

Wind Farm
Development Guidelines
for
Developers and Local Government Planners



Prepared by the
Central Local Government Region of South Australia

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1 Purpose of this Report

This Report seeks to create a set of wind farm development guidelines that have a practical value and benefit to both wind farm developers and local government planners.

The project is sponsored by the Central Local Government Region of South Australia (CLGR) with funding provided by the Local Government Association's Research and Development Scheme. The CLGR is a regional local government authority with a primary aim of co-ordinating opinion and advocating on behalf of its 15 member Councils spanning the Barossa and Clare Valleys, the Adelaide Plains through to Yorke Peninsula, the Mid North and the Flinders Ranges.

Given the significant presence of the wind industry within the CLGR area, the motivation for preparing development guidelines has flowed from the actual experiences and participation of Councils who have had to manage, locally, the process and assessment of wind farm proposals. This has, however, tended to be a complex and highly divisive undertaking in the communities they serve. Appropriately, then, the development guidelines take a realistic and commonsense approach, based on best practice as drawn from relevant publications and influenced by the practical knowledge and understanding those Councils gained in dealing with wind farm development applications.

Key factors identified in this Report as having some clear association in defining potential wind farm impacts that have helped inform the content of the development guidelines include:

Planning

- ◆ location and setting, surrounding land uses, nature of the built environment
- ◆ the location of turbines and proximity to dwellings
- ◆ local and arterial roads and network of proposed private access roads
- ◆ impacts on key regional land uses (mineral exploration and extraction, tourism, conservation parks and reserves, areas of significant landscape value)
- ◆ safety and operation of airports and landing strips, sea ports
- ◆ cumulative impact

Technical

- ◆ wind farm lighting
- ◆ geological landforms, geo-technical/ground stability
- ◆ emergency and bushfire management
- ◆ shadow flicker, reflection or blade glint
- ◆ interference with television, radio and other electronic equipment (ie GPS)
- ◆ construction impacts, including site access routes for construction vehicles
- ◆ site construction remediation

Environmental

- ◆ character, landscape quality, visual significance and amenity of the area
- ◆ natural environment, native vegetation, biodiversity and matters of national environment significance (EPBC Act 1999)
- ◆ areas of heritage significance, sites of cultural significance and indigenous heritage
- ◆ impact on surface and groundwater
- ◆ soils and erosion potential
- ◆ coastal erosion and/or inundation
- ◆ noise

Management

- ◆ community and stakeholder engagement, nearby property owners
- ◆ indication of whether the proposed development will proceed in stages and the timing of each stage
- ◆ construction costs of the development
- ◆ decommissioning and land rehabilitation
- ◆ local economic benefits and employment generation

2 Executive Summary

As the demand for electricity continues to increase in the State, the wind industry emerged as the electricity generator capable of providing increased electricity capacity that would deliver a range of economic and environmental benefits through the ability to reduce greenhouse gas emissions and to provide improved and more extensive energy infrastructure.

The current legislative planning framework, as with most legislative frameworks, outline to applicants, developers and Council planners the minimum documentation required to be submitted for particular kinds of development. The information accompanying these development proposals is then assessed against the set of planning policies specified in Development Plans, for which Councils have primary responsibility, and especially against the provisions of individual zones, policy areas and precincts defined in those Development Plans.

Considering that there are currently 15 operational wind farms located within South Australia, of which 8 or over half are located within the Mid North, the Central Local Government Region of South Australia (CLGR) believes there is a need to generate a set of development guidelines applicable to wind farms for the benefit of wind farm developers and local government planners.

These guidelines have been prepared with the aim of informing wind farm developers and Council planners regarding not only an acceptable level of documentation that wind farm developers must provide, but also a presumption for a higher standard of development detail that exceeds the minimum requirements and one that accepts and supports a *best practice* approach based on an appreciation of the expectations of Regional Councils and their communities.

The development guidelines also highlight the principal assessment criteria found in Development Plans, as introduced by the Minister and confirmed in October 2012. The guidelines are intended to usefully identify and explain the key factors associated with Development Plan policy to help planners determine whether particular wind farm proposals are an appropriate development or not.

However, the guidelines cannot be used as the *prima facie* instrument for the assessment of wind farm proposals as a substitute for their proper analysis against Development Plan policy. Nor do they have statutory authority within the existing planning system whereby developers have a legal obligation to comply with the information requirements recommended in the guidelines other than those defined in the legislation.

Rather, they are a tool to help reinforce and clarify the application process and the relevant assessment criteria and need to be understood and used in this context. Although they raise the bar as to the expectations for high quality development applications, this is not an unreasonable expectation given the scale of wind farms and their influence on a locality.

The CLGR has confidence that wind farm developers in the future will respect the essential value of these guidelines and will extend a greater understanding of local government and community aspirations and objectives than what has on occasions transpired in the past.

The State Government's position supports the use of renewable energy as a means of reducing adverse impacts of energy production on the environment.

To this end, the Government has placed an enhanced set of planning policies in Development Plans that explicitly acknowledges and promotes wind farm development throughout most rural areas.

Managing the application and the planning assessment process of wind farm proposals and balancing outcomes to ensure that the interests of the wind farm industry, local government and the community are given due consideration and are respected is a major challenge for planning authorities.

3 Background

3.1 Wind Farm Legislative Framework

The key legal documents that provide the legislative framework establishing the planning and development system and setting out its statutory procedures are the *Development Act 1993* and the associated *Development Regulations 2008*.

Development Act 1993

The *Development Act 1993* is the core legislation enacted by the South Australian Parliament which establishes the planning and development system and the legal structure for controlling the use and development of land throughout the State, by whom and how.

It creates the general framework for development control (including processes for assessing development applications) and vests this control primarily in Councils, with the State having a residual control function for certain classes of development and/or in certain areas of the State.

The Act sets out the powers and responsibilities of the respective 'players' in the planning system and creates formal roles for the Minister who has carriage of the Act, statutory bodies such as the Development Assessment Commission (DAC) and the Development Policy Advisory Committee (DPAC), and for local government (including Development Assessment Panels).

Simply, the Act provides the head powers for:

- ◆ making and amending planning strategy and policy
- ◆ regulating development
- ◆ creating statutory bodies to supervise and administer the system
- ◆ acquiring, managing and developing land

Development Regulations 2008

The *Development Regulations 2008* are generated under the Act and provide more of the administrative details and operating procedures that fills out the framework set by the Act. They are standard throughout the State and apply to all Councils and, importantly, set out how development applications are to be dealt with.

In conjunction with the Act, the Regulations distribute responsibility for regulating development between State and local government, including consultation and referral procedures.

The *Subordinate Legislation Act 1978* establishes a process that ensures all regulations are periodically reviewed by the Governor on the advice of the Minister so that they are relevant and up-to-date. All regulations expire ten years after they are made, but can be extended for up to four years. Regulations must be remade prior to their expiry to ensure continuity.

Other Relevant Legislation

Other planning and development related legislation that may also be applicable to wind farm development are listed below:

Under the Act, a wind turbine is considered to be a 'building' as it is a structure that is fixed to the land, and consequently is defined as a 'development'.

Wind farms comprise a series of connected wind turbines, along with ancillary infrastructure to support their operation, with the aim of generating electricity for export from the site. Collectively, this type of development is representative of a change of land use for which a development approval is needed.

- ◆ Architectural Practice Act 2009
- ◆ Building Code of Australia (not strictly legislation, but vital nonetheless)
- ◆ Mining Act 1971
- ◆ Petroleum and Geothermal Energy Act 2000
- ◆ Environment, Resources and Development Court Act 1993
- ◆ Environment Protection Act 1993
- ◆ Heritage Act 1993
- ◆ Native Vegetation Act 1991
- ◆ River Murray Act 2003
- ◆ Natural Resource Management Act 2004

Related legislation administered by other Federal Government includes:

- ◆ Environment Protection and Biodiversity Conservation Act 1999

Relevant Authority

Under the Act, each Council is responsible for controlling development in its area, although the State retains a measure of control for some developments and/or in some parts of the State. Local and State Governments therefore have a joint though separate responsibility to control and manage development within the legislative parameters.

In regard to wind farm developments, as these are private enterprise driven, Councils are the relevant authority for undertaking an assessment and determining a decision. However, some projects may be viewed as public infrastructure under Section 49 of the *Development Act* by being sponsored by a Government agency, in which case the Minister makes the decision, with DAC processing, assessing and making a recommendation on the proposal. A Council's role in the latter case is advisory only.

3.2 Planning Policy Framework

A policy mechanism is established by the Act comprising a two-tiered structure for defining and implementing planning policy, namely:

- ◆ the Planning Strategy
- ◆ Development Plans

Planning Strategy

The Planning Strategy is an expression of policy setting out the State Government's vision that provides long-term direction for land use and development in the State. It comprehensively covers a full range of social, economic and environmental issues and includes land use framework strategies that incorporate targets for population and land supply. An essential (and statutory) role of the Planning Strategy is to direct and influence local zoning and land use policy that is executed via Development Plans. The Planning Strategy, then, is the driver of Development Plan policy which, as a consequence, must be drafted to reinforce and be compatible with the 'visions' set out in the Planning Strategy.

It is important to note, though, that the Planning Strategy is not in itself a 'development assessment' policy document, and has no legal status in the assessment of individual development applications. That is the role of Development Plans.

Development Plans

Development Plans form the principal planning policy document in South Australia. They are, effectively, the development assessment 'rule book' that, in practice, is essential for achieving the aims of the planning system. They have two underlying tasks:

- ◆ prescribing a 'desired direction' and local land use policy structure (mostly expressed through a zoning scheme)
- ◆ defining a set of detailed planning policies and statements (both at a general level and zone-based)

Through land use zoning and through a series of objectives and principles of development control, applying either to a particular zone or across the whole of the Council area, a Development Plan helps inform the community on the types of development that are appropriate within particular parts of a Council area.

The policies in the Development Plan are the only policies that can be used in the assessment of a development application. And, a Development Plan is the only statutory planning policy document of which a Court will take judicial notice.

Wind Farm Policy

Under the legislation, the Minister has an independent capability for changing, upgrading or proposing new Development Plan policy in his/her own right, which can be site or issue specific and/or wide-ranging affecting multiple Council Development Plans. These powers were used by the Minister to insert across the board explicit wind farm policies into most Council Development Plans, firstly on an interim basis from October 2011 and then an amended version of the policies 'ratified' in October 2012.

This policy primarily takes the form of:

- ◆ a revised *Renewable Energy Facilities* module in the General section of the Development Plan (which includes a specific *Wind Farms and Ancillary Development* sub-heading)
- ◆ extra zone provisions (exclusively rural-based) wherein an objective, two specific principles of development control and further statements in the relevant zone Desired Character have been added
- ◆ in the relevant zone procedural matters, classing wind farms, wind monitoring masts and their ancillary development as *Category 2* for public notification purposes (with strict separation criteria)

Significantly, a central feature of the new policy is to take away visual impact, which is one of the most dramatic consequences of wind farms because of the way they 'advertise' their presence in the landscape, as part of the assessment process. This factor has been neutralised by an unmistakable acknowledgement in the policies that wind farms may need to be sited (and therefore accepted) in visually prominent locations.

Taken as a whole, the import of wind farm policy is to clearly support and promote wind farm development as an envisaged use in most rural areas, and one that in large part is designed to secure favourable outcomes.

Below is an extract from the zone *Desired Character* statement which encapsulates the wind farm policy approach introduced by the Minister:

Wind farms and ancillary development such as substations, maintenance sheds, access roads and connecting power-lines (including to the National Electricity Grid) are envisaged within the zone and constitute a component of the zone's desired character. These facilities will need to be located in areas where they can take advantage of the natural resource upon which they rely and, as a consequence, components (particularly turbines) may need to be:

- *located in visually prominent locations such as ridgelines*
- *visible from scenic routes and valuable scenic and environmental areas*
- *located closer to roads than envisaged by generic setback policy.*

This, coupled with the large scale of these facilities (in terms of both height and spread of components), renders it difficult to mitigate the visual impacts of wind farms to the degree expected of other types of development. Subject to implementation of management techniques set out by general / council wide policy regarding renewable energy facilities, these visual impacts are to be accepted in pursuit of benefits derived from increased generation of renewable energy.

3.3 Procedural Matters

Consultation

The legislation specifies that certain types of applications need to be publicly notified, thereby involving the public and giving neighbours, for instance, the opportunity to examine and express their views on particular development proposals. There are three categories of public notification ranging from none at all (Category 1) to full notice being given in a newspaper and to a broader range of landowners/occupiers (Category 3).

The middle category, ie Category 2, involves notifying only those adjacent landowners/occupiers that abut the subject land.

As a result of the Ministerial policy, wind farm proposals have been categorised as **Category 2** forms of development if they achieve certain separation distances from (mostly) urban-types of development.

Whereas Category 3 notification provides an opportunity for third-parties to appeal a decision of the relevant authority to the Environment, Resources and Development Court if they are aggrieved by that decision, Category 2 confers no such right.

Community members therefore have no redress in the event that wind farm applications are approved.

However, if a wind turbine is located closer than the 2 kilometre buffer to the land uses or zones specified (see box), then the wind farm application would default to a Category 3 notification and the process that follows from this, notably providing a right of appeal to third-parties not available in the 'normal' Category 2 process.

Formal Referrals

Schedule 8 of the *Development Regulations* lists certain types of development that are in particular locations or involve particular activities that must be referred to various Government Agencies or other bodies for their assessment and response before the relevant authority can make its decision.

Development that involves the establishment of a wind farm has to be referred to the **Environment Protection Authority (EPA)** for **regard/advice** only relating to the potential for noise impacts (*Item 9A* of the Schedule Table).

This is the only referral item in Schedule 8 that specifically references wind farms per se. In this regard, the referral to the EPA is absolute in that it applies across the board to any wind farm application irrespective of where it is located.

But, there are other formal referrals that potentially may be required under Schedule 8 that are conditional depending upon the particular circumstances of wind farm location and/or turbine siting. The following bodies may therefore be formally involved:

◆ **Coast Protection Board** (*Item 1* of the Schedule Table)

Where a development is on coastal land.

Note that 'coastal land' is interpreted in the Schedule as meaning a zone having 'Coast' or 'Coastal' (or as similarly suggested or indicated) in its name or, in the absence of such zones, meaning land that comprises rural land and is within 500 metres of the mean high water mark

A development located on 'coastal land' must be referred to the CPB, for **direction** if earthworks are involved on sites within 100 metres of the mean high water mark, and where the volume of material exceeds 9 cubic metres in total, and for **regard/advice** only in any other case.

Zone wording conferring Category 2 public notification status:

Wind farms and ancillary development such as substations, maintenance sheds, access roads and connecting power-lines (including to the National Electricity Grid) where the base of all wind turbines is located at least 2000 metres from:

- (a) *an existing dwelling or tourist accommodation that is not associated with the wind farm;*
- (b) *a proposed dwelling or tourist accommodation for which an operable development plan consent exists;*
- (c) *the boundaries of any Airfield, Airport, Centre, Community, Fringe, Historic Conservation, Home Industry, Living, Mixed Use, Residential, Settlement, Tourist, Township or Urban Zone, Policy Area or Precinct or any Heritage Area (including within the area of an adjoining Development Plan).*

Wind monitoring mast and ancillary development

Schedule 8 Item '1(1) - Interpretation' preamble defines what is meant by a wind farm for the purpose of this Schedule:

wind farm means an undertaking where 1 or more wind turbine generators (whether or not located on the same site) are used to generate electricity that is then supplied to another person for use at another place.

Where a wind turbine or similar associated infrastructure is not affected by 'coastal land' (ie it is not in the prescribed zone or it is more than 500 metres of the mean high water mark) then *no* mandatory referral is required.

◆ **Commissioner of Highways** (*Item 3* of the Schedule Table)

Where a development is likely to create a new or alter an existing access point or to change the nature of movement through an existing access point in all cases onto an arterial road.

Depending upon wind farm location and how and where access to and from public roads is planned to be provided, if an arterial road is implicated a referral must be made to the Commissioner for **regard/advice** only.

◆ Minister responsible for **Heritage Places** (*Item 5* of the Schedule Table)

Where a development directly or materially affects a State heritage place.

If a State heritage place is possibly impacted upon by a wind farm proposal, a referral must be made to the Minister having responsibility for the *Heritage Places Act 1993* for **regard/advice** only.

On the occasions cited above, where a wind farm development falls within the prescribed parameters of the particular referral item, it is mandatory for the planning authority to refer the application accordingly (but remember, in the case of the EPA it is mandatory in *every* instance). These are the only compulsory or discretionary formal referrals required by the legislation.

Nonetheless, other agencies or bodies, State and Commonwealth, have an interest in wind farm developments and desirably should be involved in providing advice. These informal 'consultations' are likely to include:

- ◆ Native Vegetation Council
- ◆ Natural Resource Management Boards
- ◆ State Heritage Unit
- ◆ Country Fire Services (CFS)
- ◆ Aboriginal Heritage and Native Title issues
- ◆ Mineral Resources
- ◆ Civil Aviation Safety Authority (CASA)
- ◆ Commonwealth Environment Protection and Biodiversity Conservation Act

It has to be accepted, though, that these are **informal** in nature forwarded by the planning authority in the belief that there are questions or concerns connected to a wind farm proposal, regarding impact issues or for explanation value or the like, on which the particular body may be able to provide helpful and useful information that could influence the assessment outcome.

As this process is not mandatory, there is no obligation for any such body to respond to a request from the planning authority; it is at their discretion whether or not they wish to provide advice, information or assist in any way.

Section 49 Process

Section 49 - Crown development and public infrastructure - of the *Development Act 1993* provides another pathway for wind farm developers to seek an approval. This section deals with development proposed to be undertaken by a State agency or, and this is the key, by a person that is *supported* by a State agency for the purposes of providing public infrastructure (see box next page). Note that public infrastructure includes equipment, works etc for the supply of electricity.

Where a wind farm company has sought and received this support from an agency (eg from the Department for Manufacturing, Innovation, Trade, Resources and Energy), then DAC becomes the processing and assessing authority and subsequently prepares a report for the Minister.

The Minister may approve, in whole or in part, with or without conditions, or may refuse the development outright (sub-sections (12) and (13) of Section 49). The Minister's decision cannot be appealed by either the public or the applicant.

A Council's role in this process is quite limited, being restricted to advice only. DAC must give notice of the prescribed particulars of the application to the relevant Council, who then has an opportunity to provide a report to DAC within 2 months of that notice. If Council's report is negative, eg if it has expressed opposition to the proposal, DAC must attach a copy of this in its own report to the Minister. And, in turn, if the Minister approves the development, he/she must then lay a report on the matter before both Houses of Parliament.

If the development cost exceeds \$4 million, DAC must undertake consultation by placing a public advertisement and inviting submissions from interested persons within a 15 business day period. These are then taken into account by DAC as part of its assessment. Such persons are able to be heard personally by DAC in support of their submission, but they do not have available to them any right of appeal to the Court.

Section 49A - Electricity infrastructure development - has virtually an identical pathway as the standard Section 49 process, but this section applies specifically to a 'prescribed person' who is undertaking development for the purposes of the provision of electricity infrastructure. Regulation 68(1) of the *Development Regulations 2008* defines who such a 'prescribed person' is, namely a holder of a licence under the *Electricity Act 1996* that authorises that holder to:

- ◆ operate a distribution network or
- ◆ generate electricity or
- ◆ operate a transmission network

To what extent prospective wind farm applicants can access this pathway is dependent upon whether they firstly, qualify for and secondly, hold the required statutory licence. Sub-regulation (2) does declare, however, that a State agency within the meaning of Section 49 of the Act is not a prescribed person for the purposes of Section 49A of the Act. This may have the effect of eliminating the Section 49A pathway for wind farm applicants.

Irrespective though, as stated above, from a procedural/decision-making point of view and a Council's involvement in the process, it is perhaps irrelevant as there is little if any difference in the way an application is handled between the two sections of the Act.

Section 49(2) defines the circumstances as to what triggers State agency status (with sub-section (c) providing the crucial avenue potentially available to wind farm developers):

- (a) *a State agency proposes to undertake development (other than in partnership or joint venture with a person or body that is not a State agency); or*
- (b) *a State agency proposes to undertake development for the purposes of the provision of public infrastructure (whether or not in partnership or joint venture with a person or body that is not a State agency); or*
- (c) *a person proposes to undertake development initiated or supported by a State agency for the purposes of the provision of public infrastructure and specifically endorsed by the State agency for the purposes of this section*

4 Development Guidelines and Application Checklist

The following guidelines address the specific Development Plan provisions that relate directly to wind farm development and therefore need to be taken into account as part of the planning assessment. The structure of wind farm policy presents itself somewhat as a 'sieve' in that, at the top level, because wind farms are of benefit to the State, all areas of the State are potentially open, but the second 'sieve' limits such development to areas of sound and reliable wind; the next filter is to ensure areas free from any water-based or air transport operational constraints, with a final refinement being to avoid adverse impacts on natural environmental attributes or on other land uses (mostly of a sensitive nature, ie on people and where they live). But, even after this screening process, there remains a sizeable portion of the State's rural areas implicitly available for wind farm developments.

4.1 Assessment Criteria

<i>Renewable Energy Facilities module (General Section of Development Plan)</i>		
Development Plan Policy	Commentary	Implications for assessment
<p>Objective 1 Development of renewable energy facilities that benefit the environment, the community and the state.</p>	<p>Stresses benefit to the State and its consumers as well as to the environment.</p>	<p>Broad generic, overarching statement, but difficult to use as a measure to help judge whether a wind farm in a particular geographic area is acceptable or not. All wind farms irrespective of individual merit would be expected to 'conceptually' satisfy this universal aim.</p> <p>Any argument attempting to maintain that a wind farm would not achieve this Objective could clearly not be supportable.</p>
<p>Objective 2 The development of renewable energy facilities, such as wind farms and ancillary development, in areas that provide opportunity to harvest natural resources for the efficient generation of electricity.</p>	<p>Development is encouraged to locate in areas best able to harvest natural resources for energy production, ie target locations that have favourable wind patterns.</p>	<p>Again, a wide-ranging and over-arching statement which makes it difficult to oppose wind farms in areas where favourable wind resources are demonstrated.</p>
<p>Objective 3 Location, siting, design and operation of renewable energy facilities to avoid or minimise adverse impacts on the natural environment and other land uses.</p>	<p>The footprint of a wind farm is to be designed with impact minimisation in mind. But, by their very nature, this is hard to achieve, so there will be compromises in accepting their disposition.</p> <p>A potentially incompatible land use mix could arise where existing mining/ mineral extraction takes place on or near the wind farm site possibly giving rise to competing operational conditions between the two activities. Or where mineral leases are held over the land, a resource which could become sterilised and cannot be exploited if the wind farm is present.</p>	<p>Some leeway possibly available to 'negotiate' aspects relating to the configuration of various wind farm elements. Discretion can be exercised, for example, over the particular siting and relationship of wind farm components relative to their environmental context and locality conditions. Generally, though, the scope of exploiting these sorts of opportunities would have a somewhat limited effect on the end result and be rather specific in nature.</p> <p>The circumstances would be rare where these considerations are likely to lead to a conclusion that the wind farm as a whole is a totally inappropriate form of development in a particular setting due to the breadth of its potential for environmental and landscape damage.</p> <p>Any potential land use conflict with mining interests must be resolved to make certain a wind farm does not inhibit any ongoing mining activity or nullify mineral leases. Otherwise, the wind farm may be an ill-suited use of the particular site and should not be supported.</p>
<p>PDC 1 Renewable energy facilities, including wind farms and ancillary development, should be: (a) located in areas that maximize efficient generation and supply of electricity; (b) designed and sited so as not to impact on the safety of water or air transport and the operation of ports, airfields and designated landing strips.</p>	<p>Reinforces import of the Objectives, directs wind farm activity towards locations where turbines can capitalise upon harvesting of wind, notably coastal and inland hilly areas. But, they need to also avoid affecting operational integrity of water/air transport infrastructure.</p> <p>In relation to wind farm proposals in the vicinity of an airfield, it has been clarified that an 'airfield' means a commercial airfield but does also include a local farmer's airstrip. Although the policy is more focussed on commercial airfields, which would mostly be located within dedicated airfield zones, policy areas etc (and likely to be beyond the primary zones which encourage wind farms), it is probable that local farmers' landing areas will be within these favoured zones and conceivably can be adjacent or near to a wind farm development.</p>	<p>Again, if wind resource is 'proved-up', then proposals are prima facie acceptable. But, direction is given to avoiding certain areas where transport efficiency and safety could be jeopardised. The potential impacts on local airstrips used for agricultural spraying and the like particularly need to be identified and addressed. Accordingly, some locational examination (albeit quite limited) of the appropriateness of siting could be carried out as to the possible repercussions for the safety of local light aircraft movements.</p>

Renewable Energy Facilities module (General Section of Development Plan)

Development Plan Policy	Commentary	Implications for assessment
<p>Wind Farms and Ancillary Development sub-heading</p> <p>PDC 2 The visual impacts of wind farms and ancillary development (such as substations, maintenance sheds, access roads and wind monitoring masts) should be managed through:</p> <p>(a) wind turbine generators being:</p> <ul style="list-style-type: none"> (i) setback at least 1000 metres from non-associated (non-stakeholder) dwellings and tourist accommodation (ii) setback at least 2000 metres from defined and zoned township, settlement or urban areas (including deferred urban areas) (iii) regularly spaced (iv) uniform in colour, size and shape and blade rotation direction (v) mounted on tubular towers (as opposed to lattice towers) <p>(b) provision of vegetated buffers around substations, maintenance sheds and other ancillary structures.</p>	<p>Visual impact is not a factor in its own right to oppose a wind farm because of its cumulative scale and appearance, whether marginal or intrusive and extensive, on the landscape. Rather, this element is to be 'managed' through a set of criteria that is essentially of a technical nature than the framing of more subjective 'visual amenity-aligned' policy considerations. This management is exercised via turbine separation distances from residential uses and urban zones, as well as the turbines' spatial design and the way they look and are orientated. The principle also promotes the establishment of landscaping around ground-based structures (though not necessarily having any affinity with the turbines themselves) to help moderate 'visual impact'.</p> <p>This issue represents one of the greatest potential negatives associated with wind farms, namely their comparatively vast industrial scale and presence in rural/farming districts and their undoubted visual influence over the landscape. But, the significance of the principle makes this visual prominence largely an irrelevant factor, and one not strictly available as a valid reason in its own right for opposing a wind farm. The assessment is more focussed upon whether the impacts have been appropriately managed through the application of the criteria.</p>	<p>By spelling out that visual impact is to be a 'managed' element rather than one 'avoided' outright, this aspect of a wind farm's footprint across the landscape has become an issue of little critical importance in its own right.</p> <p>Coupled with zone policy (see section below) that recognises wind farms being an expected form of development, and one that may need to be established in prominent locations to take advantage of the wind required for operational efficiency, a proposal cannot convincingly be challenged on either land use or visual impact grounds. They appreciably reduce the emphasis that can be placed on the visual impact and visual amenity factors when assessing applications of this nature, to the extent that there is little if no ability to refuse such a development based on visual impact and loss of amenity alone.</p> <p>Without doubt, wind turbines are a substantial visible element and are responsible for having a very strong visual presence across the countryside. Although this may be seen as an intrusive and undesirable element in the landscape, as far as Development Plan policy is now concerned, exposed and prominent locations are premised more on the need to capitalise on the efficient harvesting of a natural resource (ie wind) rather than preserving visual amenity or scenic landscapes. Visual impact has been essentially taken away as a factor in determining the suitability of a wind farm development.</p> <p>The siting and layout regimes for wind farms can potentially help reduce landscape impacts. For example, the clustering of turbines to avoid significant view lines or landscape features would help mitigate their visual exposure and landscape impacts. Locating numerous turbines in an open landscape can result in negative impacts irrespective, even though it may be unavoidable in many cases due to energy efficiency determinants. The <i>number</i> of turbines in an array can be more detrimental than the <i>height</i> of the turbines themselves.</p> <p>The height of wind turbines is a design constraint – the higher the rotor and the longer the diameter of the rotor blade, the greater the amount of electricity produced. Hence, a reduction in rotor height or diameter may lead to an increase in the <i>number</i> of turbines required to generate a particular target output, which may in turn generate other unwanted effects such as firstly, the turbines having a more sizeable geographic footprint and consequential visual 'untidiness' and secondly, a corresponding increase in the total amount of land required for the entire development.</p> <p>Also, impacts caused by groups of turbines can be lessened by avoiding dense spacing which creates visual clutter and by clustering turbines into 'functional units' with substantial open space between them. This can be a useful technique for mitigating impact on particular 'targeted' views or features as well.</p> <p>Careful selection of colour and materials can reduce contrast and visual impact of wind turbines on the landscape. Colours which are muted (soft grey, tan, cream) and materials which have a matte finish can lessen distant visibility and 'identity'. However, borrowing colour from the surrounding landscape can also increase contrast where the sky is the backdrop. Because of the scale of wind turbines, most views of the tops of the towers and the rotors are against the backdrop of the sky, and as such lighter colours are frequently recommended.</p> <p>The relevant planning should not try to lock the wind farm developer into using a particular brand of turbine as this action may have the effect of preventing the adoption of improved technology. Considering the length of time that often transpires between the lodgement of an application and the actual installation of the turbines, a more advanced turbine model may be available.</p>

Renewable Energy Facilities module (General Section of Development Plan)

Development Plan Policy	Commentary	Implications for assessment
<p>PDC 3 Wind farms and ancillary development should avoid or minimise the following impacts on nearby property owners / occupiers, road users and wildlife:</p> <ul style="list-style-type: none"> (a) shadowing, flickering, reflection or glint (b) excessive noise (c) interference with television and radio signals and geographic positioning systems (d) interference with low altitude aircraft movements associated with agriculture (e) modification of vegetation, soils and habitats, striking of birds and bats. 	<p>PDC, again, calls for wind farms to be designed with impact minimisation in mind but the principle focusses upon particular types of amenity impacts that are to be confronted. This is a significant policy since it provides scope for opposing a wind farm development if these matters cannot be satisfactorily addressed. Although mostly of a technical, and presumably solvable, nature they do provide a detailed template for assessing the appropriateness of the proposed wind farm.</p> <p>Shadow flicker may occur under certain combinations of geographical position and time of day, when the sun passes behind the rotating blades of a turbine and casts a moving shadow over affected areas. When viewed from a stationary position the moving shadows cause periodic flickering of the light, and glint, from the sun, giving rise to the phenomenon of 'shadow flicker'. The effect is most noticeable inside buildings, where the flicker or glint appears through a window opening or doorway.</p> <p>Noise impact is an obvious potential problem with the operation of the turbines. This factor is effectively assessed by the EPA due to the formal referral process, a lead taken by the planning authority accordingly.</p> <p>Electro-magnetic impacts are generally associated with the transmission Line between the wind farm and the connection to the electricity grid. Electric and magnetic fields can be produced by natural processes on earth, or by human activity involving electricity or electronic devices. The invisible fields are strongest at their source (near the transmission lines), and are quickly attenuated as the distance from the transmission lines increases.</p>	<p>Amenity deals with the continuing enjoyment of places, including where people live, recreational areas and travel routes and the like. Apart from being dominant visible elements, the movement of wind turbine blades themselves can also produce other visual events that may impact on amenity, such as:</p> <ul style="list-style-type: none"> ◆ sun glint and strobing effects caused by sun reflecting from the blades ◆ overshadowing ◆ shadow flicker. <p>These effects tend to be experienced by those in close proximity to a wind farm, although sun glint may be visible from several kilometres away.</p> <p>Reference to the <i>National Wind Farm Development Guidelines</i> can be helpful in understanding the issue of shadow flicker and some of the remedies that mitigate annoyance. For instance, this phenomenon does not cause an on-going issue to those persons residing in close proximity to a wind farm due to the following factors:</p> <ul style="list-style-type: none"> ◆ the wind is not always blowing - shadow flicker will not occur when the turbine is not rotating ◆ shadow flicker will not occur when the turbine is facing away from the sun ◆ cloud cover prevents shadows ◆ vegetation, topography and other buildings/development can block shadows at certain locations. <p>The noise impact assessment should be undertaken in accordance with <i>Wind Farms Environmental Noise Guidelines</i> published by the EPA in July 2009.</p> <p>The turbine manufacturer's sound power data needs to be used to predict noise emission from the proposed wind turbines. The wind farm developer needs to accept that changes to the machine type or number and placement of wind turbines will require a review of noise predictions and compliance. Noise emission from any proposed transformer sub-station associated with the wind farm is to be also included in the propagation model.</p> <p>To undertake a noise impact assessment at hub height, as required by the Guidelines, the provided sound power levels need to be re-referenced to wind speeds at 80m above ground level using the reference roughness length (Z_0) of 0.50m.</p> <p>In general the effects of wind turbines on electro-magnetic waves will normally be relatively limited. The tower and blades are slim and curved, and consequently will disperse rather than obstruct or reflect the waves. Where blades are of a material transparent or absorbent to the waves, as is commonly the case, problems are likely to be minimal. However, the location, size and design of the turbines may be important, depending on the location and nature of the communication transmission facilities.</p>
	<p>The presence of wind turbines can also have a detrimental effect on radio communications services. The scope for turbines to impact communications systems is commonly as follows:</p> <ul style="list-style-type: none"> ◆ the turbine tower may obstruct, reflect or refract the electromagnetic waves used in a range of communications systems for transmission 	<p>The communications systems most likely to be affected are those which operate at super high frequencies (particularly microwave systems operating at frequencies above about 300 MHz). These rely on line of sight between transmitter and receiver. Any obstruction in the vicinity of a straight line between these two points may cause interference and signal degradation.</p> <p>There are three types of radio communications services, point-to-point, point-to-multipoint and broadcast (radio and TV). Despite the work that may be carried out in a report to assess the likely impacts of the proposed wind farm on radio communications services in the area, it may not be possible to accurately predict the outcomes for every individual situation. Whilst the impact on point-to-point links can be predicted with a high degree of accuracy, this is not the case for point-to-multipoint and broadcast services.</p>

Renewable Energy Facilities module (General Section of Development Plan)

Development Plan Policy	Commentary	Implications for assessment
	<ul style="list-style-type: none"> ◆ the rotating blades may have similar effects, on a time-variable basis. In some cases ghosting of TV receivers close to the wind farm may occur where metal blades (or those with metallic cores or metal components such as the lightning protection system) act as an aerial to on-transmit communication signals ◆ the turbine's electrical generator itself can produce electromagnetic interference, which may need to be suppressed by shielding design and maintenance of turbines (though in practice, a generator is little different from a typical electrical motor and it is quite rare for a wind turbine generator to present this problem). <p>The State Government has not published any prescriptive policy provisions in relation to aircraft movements in the vicinity of existing or proposed wind farm developments that could be helpful in the assessment process. Due to the lack of policy direction, wind farm developers are striking their own agreements with aircraft operators regarding the minimum distances that aircraft will fly near wind turbines on a case-by-case and area/wind farm-specific basis.</p>	<p>In these circumstances, it is advisable to collect information about the services before and after construction so that if issues are identified after completion of the wind farm, a comparison can be made and the extent of the impact can be quantified and remedial action implemented.</p> <p>The height of wind farm towers can be substantial implying that their effects may be experienced by aircraft and possibly prejudice their movements. The planning authority should insist upon the developer addressing this issue and exercise due regard as to the placement of the wind farm components so that the safety of aircraft is not compromised. The policy calls for interference with low altitude aircraft movements associated with agriculture to be avoided or minimised. If this cannot be adequately demonstrated, it may give some technical ground for arguing against parts or all of the wind farm being established.</p>
	<p>The types, locations and significance of flora and fauna, particularly endangered or threatened species in the development area, are a vital consideration in determining whether a wind farm is an appropriate use or not. Although it is highly desirable that wind farms avoid exceptionally sensitive areas of vegetation, including remnant native vegetation, this may not be a practical outcome in all cases.</p> <p>During construction, the disturbance and clearance of vegetation can be avoided or minimised through careful siting and close attention to issues such as erosion, drainage run-off, habitat or food source destruction, weed and feral animal control.</p> <p>The positioning of turbines away from avian migratory routes and the use of larger, slower turning turbines, may help reduce the risk of avian strikes.</p>	<p>Development issues to be addressed include controlling run-off, maintaining water quality, stabilising topsoil and retaining existing vegetation, particularly in coastal areas where vegetation can be hard to re-establish. Any construction, particularly on slopes, should not cause erosion or surface degradation, especially in sensitive areas. As a general principle, steep slopes and ridgelines should be avoided, but such landform characteristics tend to favour ideal locations for capturing wind energy.</p> <p>The impact of wind farms upon birds and bats must be considered. The cumulative effects of wind farms may have an impact on the migratory routes of certain bird species. Solid towers and round nacelles prevent birds from nesting in the structure.</p>
<p>PDC 4 Wind turbine generators should be setback from dwellings, tourist accommodation and frequently visited public places (such as viewing platforms) a distance that will ensure that failure does not present an unacceptable risk to safety.</p>	<p>This setback requirement is related to safety factors alone, not to mitigate any perceived nuisance impacts, and seeks to secure a degree of isolation between turbines and the public. A minimum setback distance that is deemed to be safe is not prescribed however.</p>	<p>The planner must verify that the developer has supplied adequate detailed information that addresses the degree and nature of any risk of turbine failure and the implications of these findings on any nearby land uses, especially those specifically mentioned in the policy, as far as any desirable safety buffer distance is concerned.</p>

Zone-based policies (eg *Primary Production Zone or Rural Zone*)

Development Plan Policy	Commentary	Implications for assessment
<p>Objective Accommodation of wind farms and ancillary development.</p>	<p>Simple yet unambiguous statement that the zone is an acceptable, and expected, place for wind farm activity to take place.</p>	<p>Explicit intent for the zone to accommodate wind farm development, supporting an unequivocal policy goal that firmly positions this type of land use as part of the zone's core function and having the same footing as conventional primary production activities.</p>
<p>Desired Character Wind farms and ancillary development such as substations, maintenance sheds, access roads and connecting power-lines (including to the National Electricity Grid) are envisaged within the zone and constitute a component of the zone's desired character. These facilities will need to be located in areas where they can take advantage of the natural resource upon which they rely and, as a consequence, components (particularly turbines) may need to be:</p> <ul style="list-style-type: none"> ▪ located in visually prominent locations such as ridgelines ▪ visible from scenic routes and valuable scenic and environmental areas ▪ located closer to roads than envisaged by generic setback policy. <p>This, coupled with the large scale of these facilities (in terms of both height and spread of components), renders it difficult to mitigate the visual impacts of wind farms to the degree expected of other types of development. Subject to implementation of management techniques set out by general / council wide policy regarding renewable energy facilities, these visual impacts are to be accepted in pursuit of benefits derived from increased generation of renewable energy.</p>	<p>The content of the Desired Character section represents Development Plan planning policy in its own right, having the same status as the conventional Objectives and PDCs. Accordingly, its 'message' is to be also taken into account for development assessment purposes. The commentary on wind farms is an unmistakable expression of support for and endorsement of this type of development in the zone. The statements encapsulate the essence of the wind farm Objectives and PDCs written elsewhere into the Development Plan. It makes the case that whilst wind farms are potentially disruptive in landscape terms, this is to be accepted nonetheless because wind farms beneficially help the environment and our electricity generation capacity. The latter justifies the former provided a best practice approach is taken in dealing with perceived negative impacts. But, in planning terms, this represents policy direction and the planner is obliged to respect its importance in the assessment process and give it due weight.</p>	<p>The statement makes clear that planning authorities must accept that some landscape modification is to be assumed for a development of such far-reaching magnitude and uncompromising appearance. Although representing a new element in the landscape, the view is to be taken that visual amenity impact would not adversely upset the overriding character of the zone as a whole.</p> <p>The Desired Character statement emphatically acknowledges that wind farm location is driven largely by 'external' factors and not just by zoning policy. Terrain characteristics, access to suitable wind patterns, proximity to the electricity grid and inter-connector capacity all constrain the options available to operators as to where best to position such developments.</p> <p>Nonetheless, the 'market sell' about wind farms has always been about renewable energy and quotas and how important this is to a greener future and the consequent 'profit' to the community and the economy as a whole. The positives are emphasised, the potential negatives tend to be downplayed or neglected. What does seem to be missing in much of the argument is a consideration of the smaller-scale localised effects which may be a consequence of the actual intrinsic operation of a turbine itself or a wider issue related to negative amenity/ landscape change. The industry and the community will have greater confidence in and acceptance of location and operational parameters where a greater balance between the issues and their resolution can be achieved. In the meantime, as policy stands, there is little scope for opposing wind farm developments on the basis of the Desired Character sought for the zone.</p>
<p>PDC The following forms of development are envisaged in the zone:</p> <ul style="list-style-type: none"> ▪ wind farm and ancillary development ▪ wind monitoring mast and ancillary development. 	<p>Without doubt wind farms are an encouraged land use, and are recognised as being appropriate for and intended to be located within the zone. Principle confirms, and reinforces, the Objective for the zone that wind farms are an envisaged form of development. Conceptually, such development has a free run in this sense and is no more a 'foreign' land use as is conventional farming.</p>	<p>By identifying wind farms as an envisaged development in the particular zones, wind farms have been given an 'open door' invitation to establish themselves, that they are welcome in a land use sense in the same way, for instance, that farming is expected in a Primary Production Zone. The principle reinforces the earlier zone and General policies/statements and makes it clearly difficult to oppose a wind farm development on its unsuitability for or inappropriateness to be located in the zone.</p>
<p>PDC Wind farms and ancillary development should be located in areas which provide opportunity for harvesting of wind and efficient generation of electricity and may therefore be sited:</p> <ol style="list-style-type: none"> (a) in visually prominent locations (b) closer to roads than envisaged by generic setback policy. 	<p>Again, PDC stresses the self-evident goal for wind farms needing to take advantage of areas having reliable and healthy wind characteristics. The implication though, recognised in the policy, is that they are likely to be exposed to view and perhaps close to public roads, but that these factors, in themselves, are not reasons to resist their presence in such locations.</p>	<p>Realistically, because of their structural nature, size and range, the visual consequences arising from a wind farm cannot be totally mitigated. Visual impacts are deemed to be acceptable because the benefits of green energy production outweigh any perceived loss of landscape quality. In any event, the top level policy direction makes clear that wind farms are, as of right, to be located in favourable wind areas. On this question, a planning authority may have difficulty arguing otherwise, thus depreciating the weight that can be applied to the visual aspects.</p>

Zone-based policies (eg *Primary Production Zone* or *Rural Zone*)

Development Plan Policy	Commentary	Implications for assessment
<p>Procedural Matters Public Notification - Category 2</p> <p>Wind farms and ancillary development such as substations, maintenance sheds, access roads and connecting power-lines (including to the National Electricity Grid) where the base of all wind turbines is located at least 2000 metres from:</p> <p>(a) an existing dwelling or tourist accommodation that is not associated with the wind farm;</p> <p>(b) a proposed dwelling or tourist accommodation for which an operable development plan consent exists;</p> <p>(c) the boundaries of any Airfield, Airport, Centre, Community, Fringe, Historic Conservation, Home Industry, Living, Mixed Use, Residential, Settlement, Tourist, Township or Urban Zone, Policy Area or Precinct or any Heritage Area (including within the area of an adjoining Development Plan).</p> <p>Wind monitoring mast and ancillary development</p>	<p>If the turbines achieve the prescribed separation distance from the particular built-form or zone elements (ie 2 kilometres), the development must be processed as Category 2 public notification only. There is no discretion for 'elevating' a proposal to Category 3 where it satisfies the obligatory buffers. However, in the event that 1 or more turbines are sited within the 2 kilometre separation buffer, then the development as a whole would default to Category 3 public notification.</p> <p>Note that it would be a very courageous planning authority to exercise its discretion in forming an opinion that a wind farm is of a minor nature only and not having unreasonable impact etc, hence determining it as Category 1.</p> <p>Wind monitoring masts can only, at best, be Category 2, though some discretion for Category 1 may be exercised (see paragraph above).</p>	<p>Where the application is clearly for Category 2 development, the adjoining landowners/occupiers are to be individually notified of the proposal in accord with the provisions of the legislation. This will provide potential representers with at least a 10 business day period in which to lodge a representation with the planning authority. Note that only those that have 'adjacent land' as defined in the <i>Development Act 1993</i> (Section 4 - Interpretation) are entitled to be given notice, no-one else.</p> <p>If a submission is received from anyone who was not entitled to be given a notice in the first place (ie someone who is not an owner/occupier of 'adjacent land'), then that submission is invalid and cannot be taken into account by the Development Assessment Panel.</p> <p>Valid representors may expressly ask to appear personally before the Panel, but this is only possible with the consent of the Panel in accordance with any Terms of Reference or Meeting Procedures the Panel (or the Council) may have determined. There is no automatic right for Category 2 representors to be able to address the meeting, the legislation affords the Panel an absolute discretion on this.</p>
<p style="text-align: center;">Summary of the key issues / impacts associated with wind farm development requiring consideration</p>	<ul style="list-style-type: none"> ◆ location and land use context ◆ landscape character and values ◆ 'technical' amenity concerns - ◆ transport - ◆ environmental concerns - ◆ management 	<ul style="list-style-type: none"> noise shadow flicker blade glint electro-magnetic / communications access network / public road use air safety operations flora and fauna construction effects public health and safety heritage - Aboriginal and European community engagement socio-economic consequences bushfire management operational management and decommissioning
	<p style="text-align: center;">Useful reference sources, guidelines, bulletins etc that can help clarify the assessment issues</p>	<p>Best Practice Guidelines for the Implementation of Wind Energy Projects in Australia, <i>Australian Wind Energy Association*</i> (2013 update)</p> <p>Wind Farms and Landscape Value National Assessment Framework, <i>Australian Council of National Trusts and Australian Wind Energy Association*</i> (2007)</p> <p>National Airports Safeguarding Framework - Guideline D: Managing the Risk to Aviation Safety of Wind Turbine Installations (Wind Farms)/Wind Monitoring Towers, <i>National Airports Safeguarding Advisory Group</i> (2012)</p> <p>Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria, <i>Department of Planning and Community Development</i> (July 2012)</p> <p>Guidelines for Wind Farm Development Planning Bulletin, <i>WA Planning Commission</i> (May 2004)</p> <p>Wind Farms Planning Bulletin - draft for consultation, <i>Planning SA</i> (August 2002)</p>

Zone-based policies (eg *Primary Production Zone* or *Rural Zone*)

Development Plan Policy	Commentary	Implications for assessment
	<p>Useful reference sources, guidelines, bulletins etc that can help clarify the assessment issues</p>	<p>Wind Farm Environmental Noise Guidelines, <i>EPA South Australia</i> (July 2009)</p> <p>National Wind Farm Development Guidelines - draft, <i>Environment Protection and Heritage Council</i> (July 2010)</p> <p>Draft standards, <i>Australian Radiation Protection and Nuclear Safety Agency (ARPANSA)</i></p> <p>Emergency Management Guidelines for Wind Energy Facilities, <i>Victorian CFA</i> (version 4, issued February 2012)</p> <p>(* now superseded by the <i>Clean Energy Council</i>)</p>

Local Government Resource Constraints - the reality . . .

Assessing wind farm applications by local government planners internally is resource hungry, particularly in terms of time commitments, if the task is to be done properly and thoroughly. This constraint is partly offset by the revenue Council receives from the application fees, especially the planning assessment fee which, for significant projects, can be up to \$200,000. This financial resource gives Councils some scope for 'buying-in' extra professional expertise and services to assist with the assessment. However, a Council does not receive the full assessment fee in any event as 5% of this fee is required to be paid to the Development Assessment Commission (DAC) in accordance with Schedule 7 of the *Development Regulations* (Distribution of Fees).

But, if the application is lodged under the Section 49 Crown development route where the Minister is the decision-maker (not DAC), the State Government receives the full development fees which are not shared with Council despite Council being involved as a consultation body with a right, and an obligation, to provide a report to DAC for consideration. DAC has to take this into account in reaching its recommendation to then put to the Minister. There is a distinct financial inequity between the two different assessment paths as far as it affects local government.

Nonetheless, to do its job responsibly, a Council should strive to undertake a rigorous review of the proposal in preparing its report for DAC but, in responding to a Section 49 proposal, it can only do so off its own back without any additional financial contribution to compensate for the absence of application fees. This places a strain on Council resources and an enormous time burden on the planner to investigate the application in detail so that an informed position can be reached and upon which the Council can finalise its report. Desirably, there should be no shortcuts on this consultation and assessment effort but the reality is that Council will be supporting it entirely with its own money (either directly by commissioning external help or indirectly through the allocation of staff resources).

Tellingly, the State Government has dismantled its former community support fund directed at financially assisting Councils, and communities, to deal with wind farm proposals. This fund, among other aims, was available for Councils to tap into in responding to the Section 49 applications described above, hence helping deliver some resource capacity for Councils to produce more exhaustive and professional reports.

In assessing a wind farm application, because of their highly specialised nature and general complexity, great reliance is put onto the expert knowledge and detailed information (and conclusions drawn) contained in the technical reports provided as part of the application. The dilemma the planner faces is to what extent are these reports and their opinions/judgements/findings etc to be accepted at face value or are to be independently questioned and re-examined in regard to their 'validity'? The latter implies commissioning peer reviews of the reports' content to get a balance on the issues, but this would be at Council's expense. Is this step needed? Legal thinking suggests that the planning authority does not need to engage in a peer review process to verify the original application reports, but that these be taken in good faith and confidence be placed on their expert professional soundness.

4.2 Information Requirements

The following provides a checklist for both wind farm developers and Council planners to use as a guide to ensure that the necessary documentation is lodged with and forms part of the application. It presents three layers (as it were) with the first two being core requirements, as a minimum, and the third taking a 'best practice' approach.

Impact assessments should be made using the best scientific knowledge available. The methodologies within these Guidelines have been produced using the best available scientific knowledge at the time of publication; however, science is constantly evolving and new information will need to be drawn upon in assessing a project.

As policy provisions are updated and changed from time to time, different or additional information, technical or other, may become necessary in the future to ensure that all potential implications of a wind farm development can be thoroughly assessed.

A. Statutory requirements

Item	Content	Significance
Development Application Form	Ensure that the applicant completes the following: <ul style="list-style-type: none"> ◆ the name of the Applicant and all relevant contact details supplied ◆ nature of the proposed development including all key aspects associated with the proposal ◆ a legal description of the subject land ◆ the estimated cost (including GST) is clearly stated ◆ make sure the DA Form is signed and dated by the Applicant 	Required under Schedule 11 of the <i>Development Regulations 2008</i> . The first and a critical step for formally registering the application and putting the proposal into the system.
Certificate of Title(s)	A copy of the Certificate of Title is required to be provided for each and every parcel of land on which wind turbines and associated infrastructure is being proposed to be sited.	To legally identify land tenure details for the subject land, including land parcel identification, ownership information and any property constraints that may apply over it (eg easements, encumbrances, rights-of-way etc). All Titles should be up-to-date and preferably no older than 12 months of the date of lodging the application to ensure land data is current.
Electricity Declaration Form	Must be completed in full by the applicant and signed and dated.	Required pursuant to Clause 2A(1) of Schedule 5 of the <i>Development Regulations 2008</i> . This declaration is required to confirm that any building/ structure (including a turbine) constructed as part of the development is not contrary to the regulations prescribed for the purposes of Section 86 of the <i>Electricity Act 1996</i> (ie the structures will meet the clearance requirements for particular voltage powerlines).
Fees	Ensure these are paid at time of lodgement and before any processing of the application is commenced.	Schedule 6 of the <i>Development Regulations 2008</i> lists the statutory fees required to be paid to the planning authority, which for Development Plan consent, comprises payment of the appropriate lodgement, planning assessment, public notification and referral fees (note that the assessment fee payable cannot be more than a maximum of \$200,000)

B. 'Base' information requirements

Item	Importance and usefulness of information requirement
Site plan and context statement	A site analysis is essential to provide a clear context for a wind farm development and its setting. Applications for wind farms should therefore include a <i>context statement</i> for the locality including an overview of the current planning framework, significant landscape and other environmental features, sites of cultural and ecological significance, characteristics (both physical and land use) and a technical assessment on the suitability of the site having regard to alternative potential sites in the area. The site analysis needs to cover, via plans, photographs or other techniques, and accurately describe: <i>In relation to the site -</i> <ul style="list-style-type: none"> ◆ the overall development boundary showing the full extent of the wind farm proposal ◆ specific site shape, dimensions and size ◆ orientation and contours

Item	Importance and usefulness of information requirement
	<ul style="list-style-type: none"> ◆ current land use ◆ the existing use and location of existing buildings or works on the land ◆ existing vegetation types, condition and coverage ◆ the landscape of the site ◆ species of flora and fauna ◆ particular sites identifying cultural heritage significance ◆ wind characteristics ◆ any other notable features, constraints (eg acid sulphate soil, highly erodible soils and land instability) or other characteristics of the site. <p><i>In relation to the surrounding area -</i></p> <ul style="list-style-type: none"> ◆ nature of existing land uses in the locality ◆ above-ground utilities ◆ access to infrastructure ◆ direction and distances to nearby dwellings, townships, urban areas, significant conservation and recreation areas, water features, tourist routes and walking tracks, major roads, airstrips/airports/aerodromes ◆ the location and use of buildings on adjacent properties ◆ the location of all existing dwellings within 2 kilometres of the nearest turbine (adopting a precautionary approach, accounting for micro-siting variation in final placement of turbines) ◆ the landscape, including any significant landscape features ◆ significance and sensitivity of the landscape, having regard to the blend and inter-mingling of topography, the extent and type of vegetation, natural features, land use patterns, built form character and community values ◆ views to and from the site, including views from existing dwellings and key vantage points including major roads, walking tracks, tourist routes and population growth corridors (if any) ◆ sites of flora and fauna, including any listed under the EPBC Act, and significant habitat corridors and movement corridors for these fauna ◆ sites of cultural heritage significance ◆ national parks, coastal reserves, Ramsar wetlands and other similar public land ◆ location of any nearby land which has particular landscape and/or environmental significance, specified coastal locations and areas identified to accommodate future urban growth, and separation distances between these and the development site ◆ any other notable features or characteristics of the area ◆ existence of mining/extractive industry activity or mineral resource areas ◆ bushfire risk areas ◆ capacity for the continuance of existing agricultural use of land after the development of a wind farm.
Wind farm design statement	<p>A wind farm design statement, in written and illustrative form, should be provided and include details of the proposed development showing:</p> <ul style="list-style-type: none"> ◆ wind farm layout, orientation and siting arrangements ◆ the number, location and specifications of the wind generator turbines (including the height of each turbine to the tip of the turbine blade when vertical above ground level) ◆ turbine design, including dimensions, height, colour and materials, and 'footprint' envelopes ◆ access points from the public road network, internal access routes and their on-site design and construction standard ◆ topsoil, overburden, vegetation clearing and rehabilitation areas ◆ small-scale plans and cross-sections showing the layout of the turbines, infrastructure, ancillary buildings and equipment ◆ the amount of electricity to be exported from the site, power outputs and description of electrical specifications and connections ◆ operational and maintenance arrangements, including any tourist-management facilities and amenities to be available to the public ◆ the layout of the wind turbine generators and associated buildings and works (this can include wind monitoring masts) ◆ proposed connections to the electricity grid ◆ a concept plan that includes the capacity of new grid connections, network transmission infrastructure, electricity utility works ◆ accurate visual simulations showing the appearance of the development in the context of the surrounding area and from key public view points ◆ measures to manage any fire risks associated with the facility ◆ a rehabilitation plan for the site, including plans for revegetation and regeneration works ◆ an explanation supporting and justifying how the proposed wind farm design derives from and responds to the site analysis (see section above).

Item	Importance and usefulness of information requirement
<p>Network and grid connection details</p>	<p>Not only do the wind turbines themselves require assessment, but also the associated infrastructure that service them, such as sub-stations, transmission lines and poles (frequently placed overhead), wind monitoring masts and the like which have an impact as well. The physical reality of these components tends to compound the issues associated with wind farms generally as their effects can be experienced far wider than just the operation or existence of the wind farm itself. Sometimes, this allied infrastructure is not put forward at the time of the application for the wind turbines themselves but comes after an approval is given. A planning authority is then locked-in to looking at subsequent applications for this in a favourable way in light of the prior approval, ie it would appear illogical to approve the wind farm but oppose this ancillary infrastructure to make it all work. It is preferable that applications for wind farms incorporate up-front all of the components that will be required to power the wind farm development so that the total potential impacts of the development in its entirety can be assessed as one rather than piece-meal. It has sometimes been the case that attempts to get this information to accompany the original application, and thereby form part of the initial assessment process, have not been fruitful. Applicants have been reticent to provide details regarding the ancillary infrastructure. Some of the reasons given are that they have not advanced that far in their planning to have authoritative qualified data available or that it is burdensome to use up resources to do this work at the inceptive wind turbine stage. The thrust of these arguments is that the applicants are saying to the planning authority, trust us, just look at the wind turbines now, the rest will follow and all will work out well in any event. This approach means subsequent assessment frequently occurs after the event and is too late to be meaningful.</p> <p>Accordingly, as well as providing documentation on relation to the location of wind turbines and associated ancillary infrastructure, connection details and the route of proposed transmission lines linking the wind farm sub-station and the National Electricity Grid should be provided directly with, and form part of, the wind farm application itself. The notation of the transmission line route can be done in the same manner as the location of the proposed wind turbines by using a co-ordinate system.</p> <p>It is preferable that equipment with minimal visible support be selected and that power cables should be installed underground where possible.</p> <p>Locations close to high-voltage transmission lines or power stations reduce costs and therefore are generally favoured by developers in their preliminary selection process identifying potential sites.</p> <p>Wind farm developers should liaise with the Network Service Provider (NSP) to work through any network connection issues using the requirements set out in the National Electricity Rules and similar. Detailed assessment is likely to involve computer simulations of the wind farm and its connection to the grid. This is to verify that the wind farm meets the technical standards required of generators connecting to the grid and does not cause disturbance to the electrical system or to adjoining customers or generators.</p>
<p>'Impact-related' technical reports and proposed mitigation measures</p>	<p>Noise</p> <p>A wind energy facility has the potential to create noise from the following sources:</p> <ul style="list-style-type: none"> ◆ mechanical noise produced by the wind turbine gearboxes/generators ◆ aerodynamic noise resulting from the movement of the rotor blades through the air ◆ general construction noise. <p>The degree of noise impact depends on the sensitivity of the surrounding land uses, existing background noise levels, topography and wind speed and direction.</p> <p>Mechanical noise is being increasingly addressed in modern turbines as technology improves and usually is similar to, or less than, aerodynamic noise. Aerodynamic noise generally is 'subtle' in nature and similar to the noise of wind in trees. The noise characteristics of turbines vary according to their age, make and model.</p> <p>To avoid adverse noise impacts on the amenity of the surrounding community, it is imperative that the siting and design of wind farms factor in adequate buffers or separation distances between the facility and noise sensitive premises.</p> <p>The ultimate distance between sensitive uses and the wind turbine is usually determined on the basis of acoustical studies taking into account the sound power level of the turbine and performing sound propagation modelling for the expected range of wind speeds and directions. Noise monitoring and acoustical modelling against relevant criteria must be undertaken to demonstrate the acceptability of the wind farm based on its acoustic performance and the merits of separation distances being proposed.</p> <p>Certification of whether a wind energy facility complies with the <i>Wind Farm Environmental Noise Guidelines</i> issued by the EPA must be undertaken by a professional acoustic engineer. Wind farm applicants must therefore provide the detailed technical documentation signed by an impartial, properly skilled and experienced engineer who can verify that he/she has appropriate independence, qualifications and the competency to carry out the task.</p>
<p>Flora and fauna and biodiversity</p>	<p>Applicants must address whether the proposed wind energy facility is likely to impact upon species of flora or fauna. Where it is probable that sensitive species or habitats will be present on or near the site, or use the area as a migratory corridor, applicants must conduct surveys at the appropriate time for at least 12 months preceding the application. Survey work should determine the species present, any adverse impacts likely to arise from the proposed wind farm facility and any acceptable mitigation measures that may be necessary.</p> <p>An environmental impact assessment of the proposal should be undertaken and reported on as part of an overall environmental management plan in which the nature and degree of impacts identified (on vegetation, fauna/birds, biodiversity, ground erosion/stability, surface water/groundwater and aquifers) and what design response to the site analysis and methodologies to mitigate environmental harm was taken to faithfully manage flora and fauna is thoroughly and comprehensively explained in plain English.</p>

Item	Importance and usefulness of information requirement
	<p>Potential biodiversity impacts at the site and in the surrounding area to be addressed in such an environmental management plan include:</p> <ul style="list-style-type: none"> ◆ any direct and indirect removal of native vegetation and habitat that may arise because of turbine tower footings, access tracks and other infrastructure, and options that could minimise impacts through more sensitive layout design and micro-siting approaches ◆ how unavoidable native vegetation losses are to be addressed ◆ native fauna casualties resulting from construction activities ◆ the sensitivity of any protected species to disturbance, and options for minimising risks to wildlife arising from excavation and general construction works ◆ whether any species and communities are protected under the EPBC Act ◆ the potential loss of habitat of species protected under the EPBC Act ◆ measures to minimise the impacts on any native species ◆ location of proposed fences, wires and transmission lines that may interfere with or be difficult for native fauna to avoid ◆ location of transmission lines that could pose a hazard for large bird species ◆ the degree to which some species may avoid turbines by large margins, thereby leading to loss of access to their customary habitat. <p>Additional to the above, a full dedicated avian study is recommended to take place to investigate:</p> <ul style="list-style-type: none"> ◆ anticipated bird and bat casualties resulting from collisions with moving turbine blades and with stationary infrastructure (for example towers, wind monitoring masts, fences, powerlines) ◆ the risk level associated with site selection and farm layout/micro-siting for large, slow-flying birds (eg waterbirds, raptors) ◆ where lighting is to be used, the potential of collision risk resulting from disoriented birds at night ◆ whether special consideration for some bird and bat species may be required due to their significance, behaviour or movement patterns. <p>Blade glint Blade glint can result from the sun reflecting from turbine blades. Blades should be finished with a surface treatment of low reflectivity to ensure that glint is minimised.</p> <p>Shadow flicker Shadow flicker results from the position of the sun in relation to the blades of the wind turbine as they rotate. This occurs under certain combinations of geographical position, time of day and weather conditions. The seasonal duration of this effect can be calculated from the geometry of the machine and the latitude of the site. Shadow flicker can be modelled in advance and siting and design can mitigate the problem. This is more likely to be an issue for turbines located to the east or west of a dwelling.</p> <p>Electro-magnetic interference The effect of wind turbines on electromagnetic waves will usually be relatively limited. Potential electromagnetic interference effects can be calculated from information about affected telecommunications transmitting or receiving stations, local conditions, turbine design and location. The potential for electromagnetic interference from the generation of electricity from a wind energy facility should be minimised, if not eliminated, through appropriate turbine design and siting. The siting of wind turbines in the 'line of sight' between transmitters and receivers should be avoided.</p>

C. 'Best practice' information

Item	Importance and usefulness of information requirement
<p>Landscape character and visual effect analysis</p>	<p>There is no doubt that wind farms impact upon the landscape, but the key is to determine whether or not the visual impact resulting from the development in the landscape is 'manageable'. In the context of Development Plan policy, visual exposure is unavoidable and an expected consequence of wind farm development, one which is to be accepted. Nonetheless, a landscape analysis is an essential tool in helping illustrate and interpret, to planners and the public, the magnitude of panoramic modification.</p> <p>The degree of visual impact of a wind energy facility depends on the extent of the change to the landscape caused by the development, taking into account:</p> <ul style="list-style-type: none"> ◆ the overall visibility of the development ◆ the locations and distances from which the development can be viewed ◆ the significance of the landscape and proximity to sensitive areas ◆ landscape values associated with nearby public parks, conservation areas or Ramsar wetlands ◆ landscape values associated with nearby land, specified areas of landscape and environmental significance, specified coastal locations and areas identified to accommodate future urban growth ◆ the sensitivity of the landscape features to change. <p>The features of the landscape include:</p> <ul style="list-style-type: none"> ◆ the topography of the land ◆ the location, amount and type of vegetation ◆ natural features such as waterways, coast, cliffs, escarpments, hills, gullies and valleys ◆ visual boundaries between major landscape types ◆ the type, pattern, built form, scale and character of development within the landscape, including roads, tourist amenities and walking tracks

Item	Importance and usefulness of information requirement
	<ul style="list-style-type: none"> ◆ flora and fauna habitat ◆ cultural heritage sites ◆ the nature and calibre of skyline exposure. <p>The focus on the visual vulnerability of the development revolves around:</p> <ul style="list-style-type: none"> ◆ the number, height, scale, spacing, colour and surface reflectivity of the wind turbines and towers ◆ quantity and characteristics of lighting, including aviation obstacle lighting, subject to CASA requirements and advice (though such lighting now seems to be the exception) ◆ potential to give rise to visual disorder and clutter as a consequence of turbine layout pattern ◆ the ability to view through a turbine cluster or an array of turbines because of a visually well ordered arrangement ◆ the existence of, removal or re-planting of vegetation ◆ the location and scale of other buildings and works including transmission lines and associated access roads ◆ proximity to an existing or proposed wind energy facility, having regard to cumulative visual effects. <p>The visual prominence of a wind farm is based on a number of factors which affect the perceived scenic quality of an area and its landscape amenity and character. The degree to which a wind farm development will impact on the landscape will depend partly upon mitigation techniques. Methods that can be deployed to help reduce the visual impacts of wind farms include:</p> <ul style="list-style-type: none"> ◆ locating the wind farm, ancillary buildings, access roads and transmission infrastructure to complement the natural landform contours and landform backdrop, locating arrays of turbines to reflect dominant topographical and/or cultural features, such as ridgelines, the coastline, water-courses, windbreaks or transmission lines and spacing turbines to respond to landscape characteristics - for instance, turbines reflecting landscape and topographical features may result in a random pattern that better suits a rolling, varied landform or a linear pattern more apt for a coastal edge, farmland or industrial context ◆ degree of visual exposure of the development having regard to the location, distance from which the development is visible, skyline and 'viewsheds' (zones of visual influence) ◆ location and design to minimise impacts on views from areas used for sensitive uses and tourism ◆ micro-site planning, layout and design of the turbines, infrastructure, signage and ancillary facilities ◆ ensuring all turbines, blades and towers - their profile, colour, dimensions/height and surface reflectivity - look alike, have a clean, sleek appearance and that the blades rotate in the same direction; the choice of harmonious materials and colour schemes (eg off-white and grey for turbines, low contrast for roads) to complement the skyline and the landscape backdrop to reduce visual disparity and contrast from key public view points ◆ minimising the number of turbines, as appropriate, by using the largest possible model (subject to the visual absorption capabilities and environmental considerations of the site) rather than numerous small ones ◆ limiting night lighting of the development, including obstacle lights on turbines, to that required for the safe operation of the wind farm whilst not compromising aviation safety ◆ undergrounding of electricity lines wherever practicable ◆ minimising earthworks and providing measures to prevent scouring of drainage lines and waterways ◆ minimising removal of vegetation and using advanced planting of vegetation screens comprising new vegetation of good health and quality both on- and off-site as visual buffers, ensuring sound and sensitive landform rehabilitation ◆ avoiding additional clutter on turbines, such as unrelated advertising or telecommunications apparatus.
<p>Computer modelling and photomontages illustrating transformation of landscape values</p>	<p>3D computer modelling is the creation of an accurate three-dimensional digital representation of a site and/or its context. 3D computer models are generally built using a combination of GIS and animation software, which offers a diverse range of possible output types. Traditionally, 3D computer models are used to produce static images such as photomontages. However, advanced computer hardware capabilities have resulted in an increasing use of pre-rendered 'fly-through' animations and real-time 3D environments.</p> <p>Not only does a 3D model provide the base for a range of representation outputs, it can also be a very useful 'dynamic' design tool if generated at an early stage in the design process. A 3D model (even if it is just 'wireframe'), can allow developers to visualise the potential impacts that a proposed wind farm could have on an area and, ultimately, influencing and informing decisions regarding the favoured siting and design of a wind farm and its separate components. Regrettably, much of this early work to 'prove-up' a proposal is not made available as part of the application detail even though it could be invaluable in helping inform the process and the reasons for the chosen site and design.</p> <p>Photomontages are usually prepared by the applicant in order to present a pictorial presentation of what the rural landscape will look like when wind turbines are installed at the locations proposed in the application and are a very valuable tool to help people visualise a proposed development.</p> <p>Photomontage is a process for making a composite image by combining elements of real imagery and 3D digitalisation. The primary purpose of a photomontage is to accurately portray the proposed wind farm and the way in which it may modify or change the viewed landscape, especially the 'visual' landscape, by providing realistic 'before and after' depictions. Photomontages assist in imagining the potential impacts a proposed development could have on an area from an array of viewpoints that have been recorded digitally.</p>

Item	Importance and usefulness of information requirement
	<p>However, whilst they can be produced accurately to a specified method, they should always be considered as a pictorial construction that interprets the expected visibility of the wind farm. To maximise effectiveness of accuracy, the method of photomontage production should portray true scale, perspective, observer position, angle of view, colour, texture, angle of the sun and distance from the observer.</p> <p>Depictions taken from a prescribed viewing location can be a limitation, however, in that it does not allow all views from many other locations that may be of as great an interest to a wider section of the community; nor do photomontages give the viewer any indication of how the final layout/design of the wind farm evolved to the application stage. It does not present a series of options of how other configurations may affect the landscape, possibly to a lesser or a greater extent, that the proposal can be further judged by and, accordingly, gives the impression that this is the optimum result. This tends to reinforce the general public's view that the selected form of the wind farm has been a 'fait accompli'.</p> <p>Nonetheless, the photomontages must, through best endeavours, display a pictorial representation that accounts for a conception that is realistic and believable and not just a token effort in order to tick the box on a checklist.</p> <p>Another useful computer-generated tool is viewshed (or 'seen area') mapping which defines land visible from a point, or series of points. In its most basic form, a viewshed map or 'zone of visual influence' attempts to identify an area of landscape relative to a proposed development in terms of the latter's visibility from and within the surrounding locality.</p> <p>Viewshed mapping should be undertaken early in a project to also help identify the most useful locations for photomontages and similar computer generated simulations as well as, in its own right, assist planners and communities to identify locations from which the wind farm will be visible. A limitation of viewshed maps is that they are principally based on landform alone and do not take into account elements of the landscape including vegetation, built form and other ancillary infrastructure which may also influence the degree of visual exposure.</p>
<p>Community and stakeholder consultation strategy</p>	<p>The co-ordination and delivery of stakeholder participation activities is the responsibility of the wind farm developer. The industry itself has recognised the importance of this step by developing, and following, its own Code of Practice for conducting community consultation.</p> <p>Best practice requires the wind farm developer to not only understand community concerns but to also engage with local government and the respective community to ensure that their interests are considered in the design and development of the wind farm project as far as possible. Understandably, though, there are also limitations to the extent to which all community expectations can be satisfied and the balance of public interest can become blurred.</p> <p>Best practice suggests that a <i>Communications and Consultation Plan</i> be prepared to form the basis for an early commitment to connect with the community as well as, at a defined 'tactical' point, local government to provide a methodology for planning and delivering on-going community participation activities during the various stages of a wind farm's progress. The level and depth of community participation must be commensurate with the intensity of community concern. It is therefore important that stakeholder involvement is tailored to the specific circumstances of a proposed wind farm, including the nature and interests of relevant stakeholders, relative to the scale and location of the wind farm development.</p> <p>The plan should clearly outline the community participation requirements and activities for each stage of the wind farm development process. It is important to note that, at times, the lengthy nature of various wind farm development stages will normally require the <i>Communication and Consultation Plan</i> to be periodically revisited and updated to ensure that it remains current and relevant to the prevailing issues. This would particularly be the case for large scale wind developments which require a greater level of investigation and a corresponding level of consultation.</p> <p>Managing community input into the assessment and management of key technical study areas, such as noise, landscape and visual impacts, fauna/bird impacts, shadow flicker and electro-magnetic interference, is one of the key goals for the consultation.</p>
<p>Socio-economic impacts</p>	<p>There are positive economic benefits to the wider community and to individual farmers/landowners in having wind farms established in the district. Particularly during the construction phase, there are short-term employment opportunities as well as an increase in economic activity in the towns as a result of workforce expenditure on local services and goods. Likewise, farmers and landowners gain financially by accommodating turbines on their property, which supplements farm income but is unlikely to become a sustainable long-term substitute for the farm business.</p> <p>In South Australia, there is no set requirement for a socio-economic impact assessment to be submitted as part of an application. However, in order to satisfy specific objectives in the Development Plan and to assist with community consultation, an assessment report should be prepared detailing the significant social and economic effects of the wind farm proposal.</p> <p>In undertaking this assessment, a range of practices, methods and inputs can be followed, including:</p> <ul style="list-style-type: none"> ◆ a site visit to gain an understanding of the wind farm site, its locality and regional characteristics and prevailing land uses that could be affected (both positively and negatively) ◆ publicly available data, primarily from the Australian Bureau of Statistics (ABS), the Federal Department of Education, Employment and Workplace Relations (DEEWR) and the South Australian Department of Further Education, Employment, Science and Technology (DFEEST), that could be used for the compilation of a demographic, workforce and industry profile and to outline pertinent social and economic trends

Item	Importance and usefulness of information requirement
	<ul style="list-style-type: none"> ◆ scientific papers and industry publications on wind energy and its potential impacts ◆ industry standard statistical assumptions, including developer-supplied information, to estimate direct and indirect employment and investment generation associated with a particular wind farm ◆ findings of other specialist reports (including traffic and transportation, landscape and visual amenity, noise and community consultation) ◆ industry documentation and briefings regarding wind farm projects, consultation findings/ experiences, economic generators and social profit for regional communities. <p>Wind farm developments generally have direct and indirect benefits for the community and its economy. Wind farms can be of considerable public interest and a tourist attraction. A management plan for visitors should be considered if the wind farm is to be accessible to or visited by the public.</p>
Cumulative impact statement	<p>Cumulative impacts occur when successive wind farm developments are located either alongside or in proximity to each other or as extensions of existing wind farm developments. The cumulative impact of multiple wind farm facilities in a region is likely to become an increasingly important issue for wind farm developments.</p> <p>Cumulative impacts can refer to landscape and visual effects, and a wide range of other environmental, social and economic impacts, both positive and negative. But, it can also be difficult for proponents to access information on other developments in the area. The best approach is to understand as far as possible how various impacts may theoretically change with the addition of another wind farm development in the area, and proactively work with regulators to co-ordinate more 'integrated' outcomes.</p> <p>Where an area is particularly well suited to wind energy production, it is probable that there will be multiple wind farm projects planned which can therefore contribute to a cumulative influence being felt over the broader area affected. Although each individual proposal must be determined as to its own merits, regard to the cumulative impacts of multiple wind farms taken collectively is also appropriate in the overall context of the locality and its ability to accommodate multiple developments, although this can be difficult in practice. A collaborative site analysis or cumulative impact audit should be called for, accompanied by plans, photographs, modelling and any other material, which describes the sites and the particular collective impacts that could be potentially generated or amplified by the proximity of multiple wind farms. These combined circumstances would have an influential bearing on the 'competency' of the specific proposal being assessed.</p> <p>In South Australia, cumulative impact is not an issue that is formally considered as part of the assessment process, based by and large on the fact that developers may not always have intentions to expand existing wind farms beyond the initial stage when lodging the original application or lack knowledge of the intentions of other wind farm operators for developing in the area (because of commercial confidentiality). However, as suggested above, information should be required and provided for cumulative impact assessments to be undertaken if existing wind farm developments are to be extended beyond that which was first proposed.</p> <p>The results from incremental impacts of multiple projects over time, either under development or about to be developed, need to be addressed and developers ought to identify those third-party developments that can be included in the assessment of indirect and cumulative impacts. Given the available tools and the nature of the impacts, this will change depending on the discipline or particular factor that contributes to the multiplier effect and is therefore relevant.</p> <p>Where multiple wind farm proposals already exist in close proximity to a new wind farm project under development, the following items should be considered:</p> <ul style="list-style-type: none"> ◆ the propensity for an increase in specific impacts that can produce compounding and accumulative pressures that are experienced beyond the single wind farm proposal itself, thereby potentially upsetting further the landscape/environmental/ecological characteristics ◆ the propensity for an increase in bird mortality due to turbine collisions over multiple sites, rather than a single wind farm ◆ the risk that the local community could well become 'fatigued' with multiple, on-going community engagement processes - an abundance of community meetings, information sessions or materials about various developments, may result in community members tiring of attending local events or engaging in local discussions or activities and become frustrated with the whole process, implying developers may wish to consider using alternative methods for engaging the local community. <p>Developers should maintain a dialogue with other wind farm developers in a region to ensure that consultation and/or development activities are planned cognisant of each other, and opportunities for joint collaboration between the developers and the affected communities be explored. Such an approach is encouraged in order to limit the risk of consultation 'fatigue' and subsequent disengagement from the process by the community and key stakeholders, which would be to the detriment of both developers and that community.</p>

Item**Importance and usefulness of information requirement****Access and transport management plan**

An assessment of the impact on the public road network is essential. Because of the nature of the heavy vehicles used during the construction period, there is great potential for road surfaces and pavements (including drainage infrastructure) to be seriously affected by the transport of equipment and freight to the development site. This has to be therefore carefully managed. This assessment should be submitted up-front as part of the development application. In general terms, assessment of the type and volume (number of movements per day) of traffic associated with the construction and operation of the wind farm, consideration of the potential impacts on the local and regional road network and any modifications to the road network that may be required (eg widening, resurfacing, drainage) should be carried out.

The following is an overview of the content and issues to be explored by a suitably qualified traffic engineer in the preparation of an *Access and Transportation Management Plan*:

Executive summary

- ◆ outline of how the assessment was undertaken, who has been involved and consulted, the defined road routes, how impacts are to be addressed and the process to be adopted to secure the necessary upgrading and on-going maintenance of the public road system

Background and existing conditions

- ◆ existing road/transport conditions
- ◆ standard of public road network
- ◆ existing traffic volumes
- ◆ road network capacity
- ◆ accident data

Access routes for construction vehicles

- ◆ exploration of suitable access options
- ◆ summary of the access options
- ◆ expected impact on road users and the community generally

Construction traffic considerations

- ◆ traffic associated with wind farm construction
- ◆ traffic for transmission line and sub-station construction
- ◆ general traffic impact
- ◆ affect on road transport and vehicle movements
- ◆ affect on road infrastructure
- ◆ road maintenance strategy

Operational traffic considerations

- ◆ traffic generation and impact on road surfaces and road drainage

Access considerations

- ◆ main and local road transport routes
- ◆ road pavements, bridges and culverts
- ◆ site crossovers
- ◆ overhanging trees/vegetation clearance
- ◆ low level power lines
- ◆ floodways, ford crossings
- ◆ vertical road alignment
- ◆ corners with high crossfall
- ◆ potential generation of noise and dust

Permits

- ◆ transport regulation (State/Police)
- ◆ local government permits

Safety considerations

- ◆ road capacity
- ◆ signage
- ◆ sight distance at intersections
- ◆ hours of transport operation
- ◆ potential for effects on pedestrians and cyclists

Subsequently, but preferably before the approval is granted, a binding Deed of Agreement (or similar) should be negotiated, and executed, between the Council itself and the applicant in respect to formally acknowledging and endorsing the *Access and Transportation Management Plan* based on the transport assessment but more securely dealing with the following matters:

- ◆ definition of roads and routes to be used for vehicles during construction and for on-going maintenance purposes
- ◆ load specifications of vehicles servicing the development
- ◆ identification of upgrade of roads required to accommodate all vehicles servicing the development
- ◆ identification of intersection treatment that is required to facilitate heavy traffic turning movements
- ◆ specification of engineering standards for pavement and drainage design and construction
- ◆ a management schedule during the construction stage of the development to minimise impact on road users
- ◆ a maintenance program for roads utilised by the vehicles servicing the development
- ◆ an agreement that all road upgrading (including drainage and water runoff measures), intersection treatment and on-going maintenance costs are to be borne by the developer of the wind farm over the anticipated operational life of the wind farm.

Once turbines are in operation, there may be relatively few vehicles based continuously at the site. The need to replace machine components will from time to time generate heavier commercial vehicle movements, but these are likely to be infrequent.

Item	Importance and usefulness of information requirement
<p>Construction and environmental management plan</p>	<p>The construction of a wind energy facility and associated infrastructure (access roads and transmission lines) must be managed to minimise on- and off-site adverse impacts on nearby residents and the environment. An environmental 'blueprint' should therefore be prepared setting out how environmental impacts will be managed through the construction phase and in accord with future operational and maintenance specifications.</p> <p>Such a plan defines and prescribes best practice management of a wind farm facility. It is an enduring, active document that is meant to run with the life of the facility and spells out how issues are to be dealt with, how they are responded to, the nature of any remedial action and who is involved, and who has primary corporate responsibility for ensuring the plan is adhered to.</p> <p>Accordingly, the preparation of a <i>Construction and Environmental Management Plan</i> is a necessity. This commonly demands all significant aspects of the project to be identified, including up-front and on-going risks, crucial potential hazards to the environment, actions to be taken (including mitigation), performance targets (where appropriate), monitoring processes during the construction of the wind farm as well as its future operational and maintenance performance.</p> <p>The <i>Construction and Environmental Management Plan</i> should form part of the application information and be 'signed off' as part of the consent granted by the planning authority.</p> <p>The plan should include:</p> <ul style="list-style-type: none"> ◆ principles of environmental management relevant to the site and nature and scale of the facility ◆ standards to be met ◆ environmental mitigation measures ◆ monitoring requirements ◆ fauna management (including bird and bat monitoring, if required) and post-construction adaptive management measures where monitoring shows the proposal may have significant impacts on species of flora and fauna, especially that listed in the EPBC Act ◆ wind farm noise compliance management and a dedicated noise complaints registration and response process ◆ emergency management and response plan ◆ decommissioning and rehabilitation requirements (see section below) ◆ maintenance of internal site access tracks and entry points from the public road network ◆ water runoff, including stormwater, and associated management erosion and sediment control ◆ dust and construction noise management ◆ controlling the extent of works ◆ vegetation management and rehabilitation requirements ◆ storage of hazardous materials ◆ weed control ◆ waste management ◆ compliance regime and complaints handling ◆ reporting and works permit requirements ◆ emergency and incident management (including fire hazard management), audit and inspection program. <p>The plan may be adjusted to capture any relevant conditions of consent or commitments to help ensure these are effectively communicated to the work site and are complied with.</p> <p>The plan should provide for the appointment of a person in the company who has absolute and unconditional authority for the carriage of the management and responsibility for the implementation of the plan throughout the construction phase and the wind farm's on-going operations.</p>
<p>Wind farm management plan and decommissioning</p>	<p>When a wind farm site is decommissioned, the demolition work will need to be properly managed and the site reinstated to its original use and condition, or other agreed use.</p> <p>If an operator decides that a wind farm will not be refurbished at the end of its operational life or that it will permanently cease operations at some point in time, the site must be decommissioned. The decommissioning of the site is always the responsibility of the operator of the wind farm. While the decommissioning of a wind farm is likely to be undertaken 20 years or more after the construction of the wind farm, decommissioning should be considered during the project development phase and as part of the original assessment.</p> <p>A <i>Decommissioning and Rehabilitation Plan</i> addressing all significant aspects of the decommissioning process should be developed as part of the <i>Construction and Environmental Management Plan</i> at the beginning of the project.</p> <p>The Plan should identify risks and/or significant environmental aspects, actions to be taken including mitigation and/or offsets (if required), performance targets (where appropriate) and monitoring processes during the decommissioning. It may also include a programme of community consultation and revisit the traffic management plan for potential impacts on the road network in removing the infrastructure.</p>

Item	Importance and usefulness of information requirement
Bushfire management plan	<p>The prevention and management of fire is a critical part of wind farm developments. Wind farms are predominantly constructed in rural and bushland environments where bushfire is a major concern.</p> <p>A detailed risk assessment should be conducted for the project across all stages of the development to evaluate the degree of potential fire risk and to guide response and abatement measures, including emergency response plans. As all sites and project configurations are different, standard approaches cannot be adopted although there would be common elements affecting all wind farms.</p> <p>The <i>Bushfire Management Plan</i> requirements would ordinarily include:</p> <ul style="list-style-type: none"> ◆ provision of details of the wind farm site (such as wind farm location, turbine and access track/gate locations and on-site identification of assets) to assist the CFS determine and verify appropriate internal strategic and response planning ◆ development of an emergency response plan, in conjunction with the CFS, which would include agreed notification protocols, contacts and response actions ◆ design of internal access tracks to allow emergency vehicle access including the construction of all-weather surfaces, minimum track widths (including corners), maximum gradients (including entry and exit of dips), minimum weight bearing for crossovers and provision of turn arounds at heads of dead end tracks ◆ commitment to adhere to fuel load regulations and local CFS requirements around electrical compounds, transmission and distribution lines, buildings and other structures ◆ identification of water reserves in the local area which could be used for fire fighting, including provision of static water supply tanks and appropriate fittings and for on-site fire fighting infrastructure at agreed locations.
Air safety management plan	<p>The height of wind turbines can be substantial and result in potential impacts upon nearby airfields/ airstrips, aircraft performance and air safety navigation. Applicants for a wind farm should address aircraft safety issues by considering the proximity of the site to airports, aerodromes, or landing areas and the likely nature of aircraft movements in the vicinity of the proposal and how these may be affected. This review would also encompass local farm landing strips used by light aircraft for agricultural purposes and CFS operational requirements when using its aerial fleet to fight bushfires. Applicants should consult with the Civil Aviation Safety Authority (CASA) for proposals that:</p> <ul style="list-style-type: none"> ◆ are within 30 kilometres of a declared aerodrome or airfield ◆ infringe the obstacle limitation surface around a declared aerodrome ◆ include a building or structure, the top of which will be 110 metres or more above natural ground level (height of a wind turbine is that reached by the tip of the turbine blade when vertical above ground level). <p>The development application should spell out that the proponent has consulted appropriately with CASA and other local or industry aviation bodies (such as Aerotch Australasia, a large aerial agribusiness firm) in relation to aircraft safety and navigation issues and confirm that these sorts of issues have been professionally explored and dealt with.</p> <p>These communications and consequent feedback should identify all aspects affecting the air safety characteristics emerging from the wind farm, especially that from CASA, and should be encapsulated in a more formal <i>Air Safety Management Plan</i> that is then submitted to form part of the application itself. It is desirable that this plan also address any issues associated with:</p> <ul style="list-style-type: none"> ◆ light agricultural aircraft movements, the location of local landing strips and operational impacts on aerial spraying/baiting and the like that could be hindered by the existence of the proposed towers and turbines in agricultural areas ◆ in conjunction with the CFS, the safety of combatting bushfires with aerial fire fighting aircraft. <p>It has to be appreciated that CASA may recommend appropriate safeguards to ensure aviation safety which may lead to changes to turbine locations, turbine heights and/or the provision of appropriate aviation safety lighting. Planning authorities should ensure that any concerns raised by CASA are appropriately reflected in any consent issued.</p>

5 Decision Making

5.1 Relevant Considerations

In a legal sense, the only relevant considerations that may be taken into account in reaching a decision on a development proposal are those sourced from the provisions of the Development Plan. A role of the planning system is to ensure that any planning outcome is properly, fairly and soundly based and it achieves this by linking the development assessment process strongly to Development Plan policy.

A planning authority is therefore constrained by the legislation to assess development solely against that primary consideration and nothing else. In reality, when deciding whether to grant or to refuse a consent to an application for development, or on what conditions should be imposed, the planning authority must have regard to:

- ◆ the provisions of the relevant Development Plan in force at the time the application was lodged
- ◆ where relevant, any comments by a State agency, the report of a prescribed body or advice from the Development Assessment Commission, provided this relates to the provisions of the Development Plan (NB: any 'direction' made as a result of a referral under Schedule 8 *must* be complied with)
- ◆ any representations received as a result of public notification undertaken on the application, again provided those representations relate to the provisions of the Development Plan.

Arguments such as devaluation of property or health risk that are frequently raised as concerns by members of the local community against wind farm developments have no force where they are unfounded and not supported by evidence. Impacts such as negative effects on the value of neighbouring land, and on its re-sale prospects, and on perceived health problems resulting from the presence of wind farms are more of an emotional nature and have not survived legal scrutiny in the Court.

In regard to the latter, the Court has accepted the conclusions reached by the National Health and Medical Research Council (NHMRC) which conducted peer reviewed research indicating that there is currently no published scientific evidence to positively link wind turbines with adverse health effects; nor are there any known direct health impacts from shadow flicker or electromagnetic interference from correctly designed and sited wind farms.

Likewise, affects on land values are given no consideration or weight by the Court. Values of other property in a locality may fall or rise as a result of numerous factors, some relating to the outcome of planning decisions and new development or redevelopment, others for instance to public infrastructure decisions that may also affect the attractiveness of land. The Court has confirmed that land value is an outcome, not criteria upon which to judge a development proposal, nor founded in the primary Development Plan guide for assessing development and decision making. By falling outside of the planning system, land valuation is not a relevant consideration when assessing development proposals.

The *Development Act 1993* also makes it mandatory that, where a planning authority forms an opinion that a development proposal is seriously at variance with the relevant Development Plan, a consent cannot be granted (see Section 35(2) of the Act). In deciding what is 'serious' as opposed to 'not serious', a measure of judgment is called for by the planning authority. Occasionally, this judgement can be a fine line but the test is against the collective weight of relevant Development Plan policy and how forcefully this conflicts with and is in opposition to the development being applied for.

5.2 Conditions

The legislation allows a planning authority to approve a development subject to such conditions at its discretion and as it thinks fit which also run with the land and are binding and enforceable upon subsequent beneficiaries of that approval. The power to impose conditions on a planning consent is contained in Section 42 of the *Development Act 1993* (see box on next page). It is a wide power but there are constraints on its use. There are a number of principles, evolved through Court judgments, governing the soundness, legitimacy and nature of conditions that may be appropriate to place on an

approval. For instance, the Courts have addressed whether conditions may be too onerous (perhaps even ultra vires), whether they are valid or enforceable or are properly founded in a Development Plan context. The principles influencing the 'integrity' of conditions are as follows:

- ◆ conditions must have finality
- ◆ conditions cannot be used to alter the fundamental nature of an application
- ◆ conditions must relate to that development
- ◆ conditions cannot bind or fetter the discretion of authorities under other legislation
- ◆ conditions must have a planning purpose
- ◆ conditions must be fair and reasonable
- ◆ conditions must be clear and definite
- ◆ be wary of placing time limits on a development or to limit to temporary operation only
- ◆ only in rare circumstances would cash contributions be valid
- ◆ the need to seek approval under other Acts can be given only as advice or notes set out on the decision notification form and not as a condition.

Conditions cannot be used to overcome or obscure the primary question which a planning authority must first ask itself, namely, having regard to the objectives and principles of the relevant Development Plan, is the proposed development a suitable and appropriate use of the land?

As a principal duty of a planning authority is to control land use, this question, then, should always focus on whether, in the circumstances, the development will represent prima facie an acceptable and proper function for the subject land having regard to Development Plan policy.

Having addressed that primary question, and answered it affirmatively, the planning authority should only then turn its attention to appropriate conditions. But, conditions should not be used to alter the essential character of the development or constrain it in a manner that would be inconsistent with what was applied for. Nor should conditions be designed to 'refashion' a development into a more supportable use of the land. To approach a planning decision by framing conditions in these ways is to bypass the primary question.

Likewise, if a plethora of conditions are needed to help control the impact of a development to achieve a more tolerable outcome, then this raises doubt whether, in the first place, enough information detail was supplied with the application and secondly, are the development deficiencies of a more fundamental nature?

The power to impose conditions is for the purpose of enabling the planning authority to regulate incidental aspects of the development so that there is greater confidence it will not have an adverse effect upon the amenity of the neighbourhood of the development, either in the course of construction or when the development is completed. But there is

Section 42 states the following:

42—Conditions

- (1) *A decision under this Division is subject to such conditions (if any)—*
 - (a) *as a relevant authority thinks fit to impose in relation to the development; or*
 - (b) *as may be prescribed by the regulations or otherwise imposed under this Act.*
- (2) *Any such condition—*
 - (a) *is binding on, and enforceable against—*
 - (i) *the person by whom the development is undertaken; and*
 - (ii) *any person who acquires the benefit of the decision or the development; and*
 - (iii) *the owners and occupiers of the land on which the development is undertaken; and*
 - (b) *may continue to apply in relation to the development unless or until it is varied or revoked by the relevant authority in accordance with an application under this Division.*
- (3) *A relevant authority may, for example, approve a development subject to a condition—*
 - (a) *that regulates or restricts the use of any land or building subject to development; or*
 - (b) *that provides for the management, preservation or conservation of any land or building subject to development; or*
 - (c) *that regulates maintenance of any land or building subject to development; or*
 - (d) *where the applicant is seeking approval for a temporary development—that provides that, at a future time specified in the condition—*
 - (i) *the previous use of the land will revive, or a use of the land will cease; and*
 - (ii) *any person who has the benefit of the development will restore the land to the state in which it existed immediately before the development.*

an important difference between conditions which deal with incidental aspects of the proposed development and those that fundamentally affect the intended use of the land. As stated above, conditions that have the effect of 'manipulating' the very nature and essence of a development to compel that development or land to be used in a way that is significantly different from that applied for in the first place is an improper use of conditions. Likewise, to alter the fundamental or underlying character of a proposal and to handicap its 'performance' with conditions that are unworkable, unenforceable or ultra vires is also untenable.

Nor should conditions frustrate the operation of the provisions of the Development Plan by, for example, preventing or allowing a future activity for which an application may be made or which may be contrary to those provisions. If a Court finds a condition to be invalid, it must then make a decision as to whether that condition can be merely severed from the approval or whether it has indispensable authority and its deletion would seriously alter the substance of that original approval. In the latter circumstances, the approval itself is likely to be held invalid.

On a technical point, Regulation 42(3) *Development Regulations 2008* requires the planning authority to also give reasons for conditions that are imposed on a consent. A benefit of this, however, can be to highlight why the authority wishes to impose the condition and that, in turn, can assist in determining whether the condition meets the tests for validity outlined above. This sub-regulation also requires the relevant authority in imposing any condition on the basis of a 'direction' from a Schedule 8 referral body, to expressly identify that particular prescribed body.

5.3 Reserved Matters

A planning authority, when assessing a development proposal, can defer its decision on a specific matter of that proposal. Section 33(3) of the *Development Act 1993*, allows the authority to reserve its decision on a specified matter:

A relevant authority may, in granting a development plan consent, reserve its decision on a specified matter until further assessment of the relevant development under this Act.

Deadline and other pressures can understandably at times lead the planning authority to exercise the option to place reserved matters on a consent. Normally, though, it would be expected that all the relevant documentation needed to make an informed decision on the development as a whole should have been provided as part of the application in the first place, so reserved matters should be avoidable anyway.

But, if used, then caution must be exercised. Reserved matters should be used sparingly and it is unwise to defer any matter that is integral to the development. A reserved matter should really only address relatively minor and incidental details more of a technical flavour (such as stormwater, landscaping, parking, signs, lighting etc) and only after the development proposal itself is determined to be an acceptable use of the subject land, ie the primary question raised in the above section has been satisfied.

Issues that are central to and indivisible from, or have a key interdependence with, the essential qualities of a development proposal, and which will have an impact on whether consent should or should not be granted in the first place, cannot be made reserved matters to be dealt with at a later date. The development has to be regarded as a whole, not sliced into discrete and separate components that are revisited afterwards. To take any other action by way of reserving such fundamental matters is effectively to defer an assessment of the proposal against the Development Plan.

Deferred matters must be resolved prior to the granting of final development approval. But, a critical implication resulting from a refusal on a reserved matter may be to have the effect of refusing the development itself no matter how minor the reserved matter is. Courts have therefore tended to view reserved matters with some unease and have reminded planning authorities that it is a power that must be employed with great care.

In the past, some authorities have placed reserved matters by way of a condition(s) on the relevant decision notification form (DNF). However, the more appropriate approach is to include reserved matters under a separate heading, and to be clearly and independently identified as such, on the DNF quite apart from the normal conditions.

5.4 Temporary Approvals

It is self-evident that temporary approvals are approvals relating to development that is of a short-term nature only. Because of the scale involved and the level of investment commitment, it would be rare, and improbable, that a temporary approval would be sought by a wind farm applicant; and doubtlessly would be ultra vires if the planning authority attempted to time-limit in this fashion a consent to a wind farm development.

A temporary approval is more likely to be the case for wind monitoring masts which are often applied for on a short-lived basis in the first place. Their finite duration is a consequence of their preliminary role to gather wind data over an optimal period of time in order to 'prove-up' an area as to its potential suitability for wind power generation. Once these characteristics have been verified, the usefulness of the monitoring mast generally comes to an end. However, there are instances where wind farm companies wish to continue wind monitoring hand-in-hand with an established wind farm for operational and efficiency reasons.

This raises the question as to whether applications for wind monitoring masts should be described as representing a 'permanent' or a 'temporary' structure. Whether the approvals for these masts are to be truly temporary and therefore last for a limited period of time only or whether a long-term or permanent approval is sought depends, obviously, in the first instance upon what the wind farm developer applies for. Courts are wary of planning authorities forcing a temporary approval on an applicant (by way of a condition) where this was not what was originally applied for and the expectation was for an unlimited or indefinite approval.

What, then, does the term 'temporary' mean in a planning context? The Court has accepted that the most common situation in which a temporary development authorisation will be granted is one in which there are sound planning reasons why a permanent authorisation should not be granted, ie a situation where the reasons arguing that a permanent authorisation should not be granted either do not apply or do not apply with the same force to a temporary authorisation of the same development. The reasoning and assessment applied to a temporary authorisation may be materially different and as a consequence may produce a different end result.

Also, the Court has provided some guidance as to the appropriateness of a planning authority granting a temporary approval, after taking an assessment of the development as a whole, and taking into account:

- ◆ the nature of the development involved
- ◆ the relevant provisions of the Development Plan
- ◆ the character of the locality in which it lies
- ◆ the likely future rate of development of that locality
- ◆ the length of time for which the authorisation is sought
- ◆ a variety of other matters.

5.5 Extensions to Approvals

The legislation allows a relevant authority to extend the time period for a development approval, either up front at the time it makes its initial decision on an application, or on its own initiative or upon the receipt of a written request by the applicant for an extension (see box on next page, especially the Section 40(3) wording). The Courts have determined that the consent/approval need not be current at the time a request for an extension is applied for.

Frequent reasons given for seeking extensions to approvals commonly include delays in arranging development finance, difficulties in establishing construction agreements and/or a changing economic environment affecting the development's viability.

When a developer lodges an application for an extension to an existing approval that has lapsed, the planning authority has a discretion as to whether to extend the life of that approval or not. That discretion should be exercised by having regard to the relevant facts of the particular matter but the Courts have helpfully given direction as to the factors that ought to be addressed in granting such an extension, as follows:

- ◆ the length of delay in applying for the extension (and allowing for the rationale for the applicant needing an extension of time)
- ◆ the reasons for the delay (as noted above, there is no automatic bar to an application for an extension being made after the consent has lapsed)
- ◆ whether the applicant has pursued a development approval with diligence
- ◆ whether there has been a change to the Development Plan or to the planning legislation that are relevant to the application such that there may be consequent prejudice suffered by the grant of or refusal to extend the period
- ◆ any other factors appropriate to the circumstances.

The critical factor identified from the above would be the 'status' of Development Plan policy and whether this had changed or not to that which applied when the development was first approved. If it has, then depending upon the content and extent of the policy changes, the overall suitability of the development may not be as clear cut as previously and therefore an extension may not be appropriate.

The attitude of neighbours is not a relevant consideration in determining whether an application to extend a consent should be agreed to as the issue of the development's alignment with Development Plan policy and its suitability and 'fit' within its locality were addressed in the original assessment. The planning authority need not consider this further as it is not re-doing the planning assessment of the proposal, it is merely determining if it is reasonable to grant a longer period of time in which to allow the development to get started.

Wind monitoring masts, in particular, are subject to applications for extensions to their authorisations but in these cases mostly to overcome (usually) the temporary approval originally granted. Masts, because their function is directed at identifying favourable wind areas for harvesting wind energy, were normally authorised in select locations for a 3 year period. But it is now the case that their operative value to wind farm developers goes beyond just having this short-term function.

For instance, wind monitoring data is used to source capital for future projects thereby necessitating longer time-frames being committed to monitoring and to the on-going measurement of wind characteristics. The function of masts has therefore taken on more than just a 'temporary' role 'proving-up' a particular wind farm site. It is also the case that as finance has become more difficult for developers to secure or as Commonwealth renewable energy programs are reviewed and/or redrafted, the period in which wind monitoring masts are needed tends to lengthen, often extending to a 5 year period or beyond.

Once wind monitoring masts are in place doing their planned job, the principal focus of many wind farm developers then turns towards developing the wind farm proposal itself with a result that ensuring mast approvals are current has been overlooked on occasions. Failure to ensure a temporary wind monitoring mast approval remains operative has led, in extreme cases, to some masts having to be removed at the expiration of the approval. And, where the extension of time application is not successful, the only path open to a wind farm developer is to make a new application for the mast requiring a fresh assessment and decision, with a possibility of a different outcome second time round.

Section 40—Determination of application (*Development Act 1993*)

- (2) *A development authorisation under this Division remains operative for a period prescribed by the regulations.*
- (3) *A relevant authority may, on its own initiative or on the application of a person who has the benefit of any relevant development authorisation, extend a period prescribed under subsection (2).*

Regulation 48—Lapse of consent or approval (*Development Regulations 2008*)

- (2) *A period prescribed by sub-regulation (1) may be extended by a relevant authority—*
 - (a) *when the relevant consent or approval is given; or*
 - (b) *at such later time as may be appropriate.*

(¹ The periods specified in sub-regulation (1) require substantial commencement of the development within 12 months from the operative date of the consent/approval and substantial completion within 3 years.)

5.6 Land Management Agreements

Section 57A of the *Development Act 1993* provides for Land Management Agreements (LMA) in relation to development applications by empowering a Council (or the Minister) to enter into such an agreement with the owner of the land that may relate to the development, management, preservation or conservation of land (see box for extract of Section 57A).

LMAs are therefore a tool that can help ensure that a development is managed in an acceptable way. They are not, however, a substitute for the proper development assessment process outlined in the legislation that a planning authority must adhere to. LMAs cannot be used to facilitate a way around Development Plan policy or to 'legitimise' any development that may be at odds with that policy. There must be a genuine nexus between an LMA and what the Development Plan supports.

Be aware also that a party cannot be coerced into participating in an LMA. All parties must be of similar mind and be equally willing to enter into the agreement.

In the event that an agreement is believed to be a useful mechanism for supporting or sustaining components of a wind farm development, the planning authority would be strongly advised to seek legal opinion both on the reasons and the substance as to why an LMA is believed to be necessary in the first place and also on the actual legal structure and wording of the document itself. This may help avoid future ambiguities and misunderstandings, as well as the prospect of the agreement subsequently being determined as invalid.

An LMA is only binding when it has been noted on the Certificate of Title for the land affected. Also, it runs with the land and is binding upon subsequent property owners, irrespective that the agreement was enacted with the original owner.

A register of LMAs must be kept available for public inspection and a person is entitled, on payment of a prescribed fee, to a copy of an agreement.

57A—Land management agreements—development applications

- (1) *Subject to this section, a designated authority may enter into an agreement under this section with a person who is applying for a development authorisation under this Act that will, in the event that the relevant development is approved, bind—*
 - (a) *the person; and*
 - (b) *any other person who has the benefit of the development authorisation; and*
 - (c) *the owner of the relevant land (if he or she is not within the ambit of paragraph (a) or (b) and if the other requirements of this section are satisfied).*
- (2) *An agreement under this section may relate to any matter that the person applying for the development authorisation and the designated authority agree is relevant to the proposed development (including a matter that is not necessarily relevant to the assessment of the development under this Act).*
- (3) *However, the parties proposing to enter into an agreement must have regard to—*
 - (a) *the provisions of the appropriate Development Plan; and*
 - (b) *the principle that the entering into of an agreement under this section by the designated authority should not be used as a substitute to proceeding with an amendment to a Development Plan under this Act.*
- (4) *An agreement under this section cannot require a person who has the benefit of the relevant development authorisation to make a financial contribution for any purpose that is not directly related to an issue associated with the development to which the agreement relates.*

Appendix A

South Australian Government Policy Position on Wind Farms

Planning policy in relation to the development of wind farms was first introduced by the State Government through the *Wind Farms Plan Amendment Report (Ministerial)* on 24 July 2003.

This Plan Amendment Report (PAR) was placed on interim approval meaning that the policy provisions came into effect immediately. Note that the same strategy was later adopted in the *Statewide Wind Farms DPA* released in October 2011.

The original PAR introduced a few high level, but very general, policy provisions which gave some recognition to the technical impacts that should be assessed in future wind farm developments. However, the policy provisions at that stage gave no guidance to issues such as setback requirements for a wind farm proposal generally or for individual wind turbines.

As for public notification, most wind farm applications were processed as a Category 3 form of development. This occurred essentially on the basis that as neither the Development Plan nor the *Development Regulations 2008* (Schedule 9) listed wind farms specifically as either Category 1 or Category 2, they therefore became Category 3 by default. This provided appeal rights to third-parties to challenge wind farm approvals.

However, a degree of discretion was exercised by some planning authorities when it came to wind monitoring masts. In a number of instances, wind monitoring masts were processed as Category 1 forms of development, because of the opinion formed that these were of a minor nature and not likely to unreasonably impact on owners/occupiers, and thus required no public notification.

As part of its package, the Government had earlier issued in August 2002 a '*Wind Farms - Guide for Applicants*', along with a draft '*Wind Farms Planning Bulletin*' for consultation, to some extent as a precursor to the changes subsequently made to expressly acknowledge wind farms in the planning framework of Development Plans.

The guide was written to assist wind farm developers and planning authorities by providing an indication of the information required as part of a wind farm development application. The accompanying Planning Bulletin was drafted in response to '*. . . a review of early wind farm developments in the state, research into interstate and overseas wind farm issues and . . . the increasing complexity of (wind farm) issues, particularly in regard to more prominent locations.*'

The Planning Bulletin has yet to be released in a final form.

During the period between 2003 and 2011, most of the guidelines that had been prepared by then Planning SA were not updated and much of the policy that related to wind farm and associated infrastructure (eg wind monitoring masts) were omitted from many rural Council Development Plans.

In October 2011, the Government introduced a *Statewide Wind Farms Ministerial Development Plan Amendment (DPA)*, on interim operation. This meant that the significant changes introduced by the DPA applied with immediate effect which took many by surprise, including local government and especially members of the public. The nature of the new policies and their clear inference that wind farms were by and large acceptable in rural areas, almost but not quite 'as of right', led many people to believe that the wind industry was given a 'free kick'. Many public submissions resulting from the consultation process made strong points around this belief.

Another controversial policy change resulting from the DPA was in relation to the public notification process. As outlined above, prior to the 'interim' approval of the 2011 DPA, wind farm developments were classified as Category 3. However, these became listed in the relevant zones as a Category 2 form of development for the purposes of public notification if the turbines within a wind farm were located more than 2 kilometres from a township zone or the boundary of a Council area. In essence, this took away community members' right to appeal to the Court if they were aggrieved by the planning decision.

In addition to the significant reversal of the public notification process, the DPA introduced the need for additional technical studies to be undertaken by developers to determine any potential unacceptable risk to public safety associated with turbine failure and the potential interference to low altitude aerial agricultural operations in the vicinity of the project.

The 'interim' operation of the 2011 DPA remained in place until an amended replacement set of wind farm policies (revised as a result of numerous consultation submissions received) came into operation on 18 October 2012.

Broadly speaking, however, these redrafted provisions represented a refinement of the policy framework that was established in 2011 but which, by and large, simply reinforced the original intent and approach.

Significantly, under the new policy provisions, the public notification categorisation went mostly unchanged and wind farm proposals remained a Category 2 form of development where all the turbines are located:

- ◆ at least 2 kilometres from an existing or approved dwelling or tourist accommodation (other than where an agreement is in place), and
- ◆ at least 2 kilometres from Airfield, Airport, Centre, Community, Fringe, Historic Conversation, Home Industry, Living, Mixed Use, Residential, Settlement, Tourist, Township or Urban Zone, Policy Area or Precinct or any Heritage Area.

If the above criteria cannot be met, a wind farm proposal would progress to a Category 3 form of development which then subjects the application to full public notification and third-party appeal rights. It is likely that this will be the exception, however, as wind farm developers would have a strong incentive to ensure that the planning and design of a wind farm achieve these separation distances. The new public notification criteria has therefore entrenched the 'default' Category 2 public notification position with its in-built avoidance of subsequent third-party appeal rights.

Another State Government initiative, indirectly related to its policy position, was a recognition of the impact of wind farm developments within the Central Local Government Region (CLGR). The region currently produces over 50% (655MW) of the State's wind energy and already contains 8 operational wind farms, with developer interest in over 30 more locations. In view of the concentration of this industry within the Mid North region, in mid-2011, the CLGR received funding from then Renewables SA to engage a *'Wind Farm Liaison Officer'* for a 12 month period to help address the growing tensions between the Mid North regional communities, local government and wind farm developers, as the industry continues to expand at an energetic pace.

Whilst there is general support for renewable energy and opportunities for further growth in the region, there is also growing community and Council concern over what many see as the inappropriate location of these large, industrial-scale developments, inadequate development policy guidance, the cumulative impacts of multiple wind farms within a relatively condensed geographic space and over operational monitoring.

Appendix B

Acknowledgements

In order to compile much of the information contained within this document, it was necessary to seek data and documentation from numerous local Councils within the CLGR that have had wind farm activity in their districts. The information supplied relating to wind farm and wind monitoring mast applications, such as Decision Notification Forms and other relevant details, has been much appreciated. The various officers within the following Councils (and DAC) who provided information or helpful background relating to projects with which they were involved, are therefore acknowledged:

Clare and Gilbert Valleys Council

DC Mount Remarkable

District Council of Mallala

Regional Council of Goyder

Light Regional Council

Northern Areas Council

Port Pirie Regional Council

Wattle Range Council

Development Assessment Commission