



Crookwell 3 Wind Farm  
Appendix 2

# ENVIRONMENTAL ASSESSMENT REQUIREMENTS





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Our ref: 10/01492

Mr Shaq Mohajerani  
Engineering Manager  
Crookwell Development Pty Ltd  
Level 5, 8 Help Street  
Chatswood NSW 2067

Dear Mr Mohajerani

**Proposed Crookwell 3 Wind Farm, Upper Lachlan Local Government Area (Application Reference: 10\_0034)**

The Department has received your major project application for the proposed Crookwell 3 wind farm project.

I have attached a copy of the Director-General's requirements (DGRs) for the preparation of an Environmental Assessment for the project. These requirements have been prepared following the Planning Focus Meeting held on 17 March 2010 and in consultation with the relevant government agencies. I have also enclosed a list of relevant guidelines that you may wish to refer to during the preparation of the Environmental Assessment.

It should be noted that the Director-General's requirements have been prepared based on the information provided to date. Under section 75F(3) of the Act, the Director-General may alter or supplement these requirements if necessary and in light of any additional information that may be provided prior to the Proponent seeking approval for the project.

I would appreciate it if you could contact the Department at least two weeks before you propose to submit the Environmental Assessment for the project to determine:

- the fees applicable to the application;
- relevant land owner notification requirements;
- consultation and public exhibition arrangements that will apply;
- options available in publishing the Environmental Assessment via the Internet; and
- number and format (hard-copy or CD-ROM) of the Environmental Assessment that will be required.

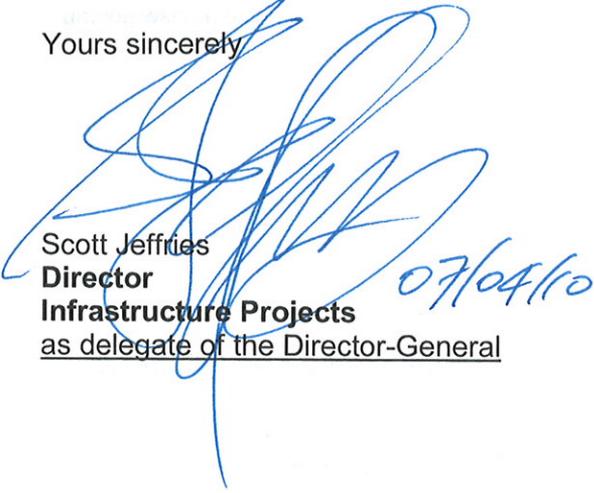
Prior to exhibiting the Environmental Assessment, the Department will review the document to determine if it adequately addresses the DGRs. The Department may consult with other relevant government agencies in making this decision. If the Director-General considers that the Environmental Assessment does not adequately address the DGRs, the Director-General may require the Proponent to revise the Environmental Assessment to address the matters notified to the Proponent. Following this review period the Environmental Assessment will be made publicly available for a minimum period of 30 days.

If your project includes any actions that could have a significant impact on matters of National Environmental Significance, it will require an additional approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This approval would be in addition to any approvals required under NSW legislation and it is your responsibility to contact the Department of the Environment, Heritage, Water and the Arts to determine if an

approval under the EPBC Act is required for your project (6274 1111 or <http://www.environment.gov.au>).

If you have any enquiries about these requirements, please contact Ms Swati Sharma, Environmental Planning Officer, Infrastructure Projects on 02 9228 6221 or via email ([swati.sharma@planning.nsw.gov.au](mailto:swati.sharma@planning.nsw.gov.au)).

Yours sincerely



Scott Jeffries  
**Director**  
**Infrastructure Projects**  
as delegate of the Director-General

07/04/10

## Director-General's Requirements

### Section 75F of the *Environmental Planning and Assessment Act 1979*

<b>Project</b>	Construction and operation of a wind farm that will have a generation capacity of 45 to 116 megawatts. The wind farm is to include two development parcels to the east and south of the existing Crookwell 1 wind farm and approved Crookwell 2 wind farm (referred to as Crookwell 3 East and Crookwell 3 South). The project includes up to 35 wind turbines and associated infrastructure, including access tracks, internal cabling and underground connections to link Crookwell 3 East and South to the approved substation within Crookwell 2 wind farm.
<b>Site</b>	Approximately 17 kilometres to the south east of Crookwell, in the Upper Lachlan local government area.
<b>Proponent</b>	Crookwell Development Pty Ltd
<b>Date of Issue</b>	7 April 2010
<b>Date of Expiration</b>	7 April 2012
<b>General Requirements</b>	<p>The Environmental Assessment (EA) must include:</p> <ul style="list-style-type: none"> <li>• an <b>executive summary</b>;</li> <li>• a <b>detailed description</b> of the project including: <ul style="list-style-type: none"> <li>→ construction, operation and decommissioning details;</li> <li>→ the location and dimensions of all project components including the wind turbines (including map coordinates and AHD heights), electrical sub stations, underground cabling between turbines and underground connection linking Crookwell 3 East and South to Crookwell 2 wind farm substation, on site control room and equipment storage, temporary concrete batching plant(s), construction compounds and access roads;</li> <li>→ a timeline identifying the proposed construction and operation of the project components, their envisaged lifespan and arrangements for decommissioning and staging;</li> <li>→ supporting maps/plans clearly identifying existing environmental features (e.g. watercourses, vegetation), infrastructure and landuse (including nearby residences and approved residential developments or subdivisions) and the location/ siting of the project (including associated infrastructure) in the context of this existing environment; and</li> <li>→ resourcing requirements (including, but not limited to, water supply and gravel).</li> </ul> </li> <li>• consideration of any <b>relevant statutory provisions</b> including the consistency of the project with the objects of the <i>Environmental Planning and Assessment Act 1979</i>;</li> <li>• an <b>assessment of the key issues</b> outlined below, during construction, operation and decommissioning (as relevant). The Environmental Assessment must assess the worst case as well as representative impact for all key issues considering cumulative impacts, as applicable, from the surrounding Crookwell 1 Wind Farm (existing), other approved wind farms in the viewshed of the project, and the Crookwell 2 Wind Farm (approved), including associated key ancillary components;</li> <li>• a <b>draft Statement of Commitments</b> detailing measures for environmental mitigation, management and monitoring for the project;</li> <li>• a <b>conclusion justifying the project</b> taking into consideration the environmental, social and economic impacts of the project; the suitability of the site; and the public interest; and</li> <li>• <b>certification by the author</b> of the EA that the information contained in the Assessment is neither false nor misleading.</li> </ul>
<b>Key Assessment Requirements</b>	<p>The EA must include assessment of the following key issues:</p> <ul style="list-style-type: none"> <li>• <b>Strategic Justification</b> - the EA must: <ul style="list-style-type: none"> <li>→ include a strategic assessment of the need, scale, scope and location for the</li> </ul> </li> </ul>

	<p>project in relation to predicted electricity demand, predicted transmission constraints and the strategic direction of the region and the State in relation to electricity supply, demand and electricity generation technologies;</p> <ul style="list-style-type: none"> <li>→ include a clear demonstration of quantified and substantiated greenhouse gas benefits, taking into consideration sources of electricity that could realistically be replaced and the extent of their replacement;</li> <li>→ include an analysis of the suitability of the project with respect to potential land use conflicts with existing and future surrounding land uses (including rural residential development, land of significant scenic or visual value, land of high agricultural value, mineral reserves and conservation areas), taking into account local and strategic landuse objectives; and</li> <li>→ describe the alternatives considered (location and/or design) for all project components, and provide justification for the preferred project demonstrating its benefits including community benefits (for example community enhancement programs) on a local and strategic scale and how it achieves stated objectives.</li> </ul> <ul style="list-style-type: none"> <li>• <b>Visual Impacts</b> - the EA must:       <ul style="list-style-type: none"> <li>→ provide a comprehensive assessment of the landscape character and values and any scenic or significant vistas of the area potentially affected by the project. This should describe community and stakeholder values of the local and regional visual amenity and quality, and perceptions of the project based on surveys and consultation;</li> <li>→ assess the impact of shadow "flicker", blade "glint" and night lighting from the wind farm;</li> <li>→ identify the zone of visual influence (no less than 10 kilometres) and assess the visual impact of all project components on this landscape;</li> <li>→ include photomontages of the project taken from potentially affected residences (including approved but not yet developed dwellings or subdivisions with residential rights), settlements and significant public view points, and provide a clear description of proposed visual amenity mitigation and management measures;</li> <li>→ provide an assessment of the feasibility, effectiveness and reliability of proposed mitigation measures and any residual impacts after these measures have been implemented.</li> </ul> </li> <li>• <b>Noise Impacts</b> - the EA must:       <ul style="list-style-type: none"> <li>→ include a comprehensive noise assessment of all phases and components of the project including, but not limited to, turbine operation, the operation of the electrical substation, construction, and traffic noise. The assessment must identify noise sensitive locations (including approved but not yet developed dwellings), baseline conditions based on monitoring results, the levels and character of noise (e.g. tonality, impulsiveness etc) generated by noise sources, noise criteria, modelling assumptions and worst case and representative noise impacts;</li> <li>→ in relation to wind turbine operation, determine the noise impacts under operating meteorological conditions (i.e. wind speeds from cut in to rated power), including impacts under meteorological conditions that exacerbate impacts (including varying atmospheric stability classes and the van den Berg effect for wind turbines). The probability of such occurrences must be quantified;</li> <li>→ include monitoring to ensure that there is adequate wind speed/profile data and ambient background noise data that is representative for all sensitive receptors;</li> <li>→ provide justification for the nominated average background noise level used in the assessment process, considering any significant difference between daytime and night time background noise levels;</li> <li>→ include an assessment of vibration impacts associated with the project;</li> <li>→ if any noise agreements with residents are proposed for areas where noise criteria cannot be met, provide sufficient information to enable a clear</li> </ul> </li> </ul>
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understanding of what has been agreed and what criteria have been used to frame any such agreements;

- clearly outline the noise mitigation, monitoring and management measures that would be applied to the project. This must include an assessment of the feasibility, effectiveness and reliability of proposed measures and any residual impacts after these measures have been incorporated; and
- include a contingency strategy that provides for additional noise attenuation should higher noise levels than those predicted result following commissioning and/or noise agreements with landowners not eventuate.

The assessment must be undertaken consistent with the following guidelines:

- Wind Turbines - the South Australian Environment Protection Authority's *Wind Farms - Environmental Noise Guidelines* (2003);
- Site Establishment and Construction – *Interim Construction Noise Guidelines* (DECC, 2009);
- Traffic Noise – *Environmental Criteria for Road Traffic Noise* (NSW EPA, 1999); and
- Vibration – *Assessing Vibration: A Technical Guideline* (DECC, 2006).

- **Flora and Fauna** - the EA must:

- include an assessment of all project components on flora and fauna and their habitat consistent with the *Draft Guidelines for Threatened Species Assessment* (DEC, 2005), including details on the existing site conditions and quantity and likelihood of disturbance;
- The EA must specifically consider impacts to threatened species and communities listed under both State and Commonwealth legislation that have been recorded on the site and surrounding land, impacts to riparian and/ or instream habitat in the case of disturbance of waterways, and to biodiversity corridors. In addition, impact of the project on birds and bats from blade strikes, low air pressure zones at the blade tips, and alteration to movement patterns resulting from the turbines must be assessed, including demonstration of how the project has been sited to avoid and/ or minimise such impacts;
- details of how flora and fauna impacts would be managed during construction and operation including adaptive management and maintenance protocols (including the mitigation and/or management of weeds); and
- measures to avoid, mitigate or offset impacts consistent with “improve or maintain” principles. Sufficient details must be provided to demonstrate the availability of viable and achievable options to offset the impacts of the project.

- **Indigenous Heritage** - the EA must include an assessment of the potential impact of the project components on indigenous heritage values (archaeological and cultural). The EA must demonstrate effective consultation with indigenous stakeholders during the assessment and in developing mitigation options (including the final recommended measures) consistent with *Guidelines for Aboriginal Cultural Impact Assessment and Community Consultation* (DEC, July 2005).

- **Traffic and Transport** – the EA must assess the construction and operational traffic impacts of the project including:

- details of the nature of traffic generated, transport routes, traffic volumes and potential impacts on local and regional roads, bridges and intersections, including any proposed road upgrades and repairs;
- details of measures to mitigate and/or manage the potential impacts, including measures to control soil erosion and dust generated by traffic volumes;
- details of site access roads including how these would connect to the existing road network and any operational maintenance or handover requirements.

- **Hazard/Risks**– the EA must include an assessment of the potential impacts on aviation safety considering nearby aerodromes and aircraft landing areas, defined

	<p>air traffic routes, aircraft operating heights, radar interference, communication systems, and navigation aids. In addition, the EA must assess the impact of the turbines on the safe and efficient aerial application of agricultural fertilisers and pesticides in the vicinity of the turbines. The management of any land contamination must also be addressed. Potential hazards and risks associated with electric and magnetic fields and bushfires must be assessed. The EA must also detail measures to contain any hazardous substances to prevent the contamination of pasture and dams.</p> <ul style="list-style-type: none"> <li>• <b>Water Supply and Waterways</b> – The EA must determine whether an adequate and secure water supply is available for the life of the project including the statutory (licensing) context of the water supply sources, and assess potential environmental impacts associated with the identified sources, including impacts on groundwater. Where the project would cross significant waterways, the EA must identify likely impacts to the waterways and measures to minimise impacts. The EA must also assess the potential for water pollution impacts, including the risks to the environment and human health.</li> <li>• <b>General Environmental Risk Analysis</b> –notwithstanding the above key assessment requirements, the EA must include an environmental risk analysis to identify potential environmental impacts associated with the project, proposed mitigation measures and potentially significant residual environmental impacts after the application of proposed mitigation measures. Where additional key environmental impacts are identified through this environmental risk analysis, an appropriately detailed impact assessment of the additional key environmental impact(s) must be included in the EA.</li> </ul>
<p><b>Consultation Requirements</b></p>	<p>The Proponent must undertake an appropriate and justified level of consultation with the following parties during the preparation of the EA:</p> <ul style="list-style-type: none"> <li>• Upper Lachlan Shire Council;</li> <li>• Goulburn Mulwaree Council;</li> <li>• Department of Environment, Climate Change and Water;</li> <li>• NSW Office of Water;</li> <li>• Department of Industry and Investment;</li> <li>• NSW Roads and Traffic Authority;</li> <li>• NSW Rural Fire Service;</li> <li>• Land and Property Management Authority;</li> <li>• Sydney Catchment Authority;</li> <li>• Commonwealth Department of Defence;</li> <li>• Civil Aviation Safety Authority;</li> <li>• Airservices Australia;</li> <li>• Aerial Agricultural Society of Australia; and</li> <li>• the local community and landowners.</li> </ul> <p>The EA must clearly describe the consultation process and indicate the issues raised by stakeholders during consultation and how these matters have been addressed.</p>

## Relevant Guidelines - For Reference

### General

Wind Energy Facilities draft Environmental Impact Assessment Guidelines (Planning NSW, June 2002)

Best Practice Guidelines for Implementation of Wind Energy Projects in Australia (Auswind, 2006)

### Visual

Wind Farms and Landscape Values: National Assessment Framework (Australian Wind Energy Association and Australian Council of National Trust, June 2007).

### Ecology

Cumulative Risk for Threatened and Migratory Species (Commonwealth Department of Environment and Heritage, March 2006).

Wind Farms and Birds: Interim Standards for Risk Assessment, (Auswind, July 2005).

Assessing the Impacts on Birds – Protocols and Data Set Standards (Australian Wind Energy Association).

Threatened Biodiversity Survey and Assessment – Guidelines for Developments and Activities (Working Document) (DEC, 2004).

### Aviation Hazard

Advisory Circular 139-18(0) Obstacle Marking and Lighting of Wind Farms (Civil Aviation Safety Authority, July 2007). Note: this advisory is currently withdrawn however a replacement has to date not been issued.

Windfarm Policy (Aerial Agricultural Association of Australia, December 2009)

Powerlines Policy (Aerial Agricultural Association of Australia, December 2009)

### Water Quality

National Water Quality Management Strategy: Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000).

The NSW State Groundwater Quality Protection Policy (DLWC, 1998).

The NSW State Groundwater Dependent Ecosystems Policy (DLWC, 2002).

Department of Water and Energy's Guidelines for Controlled Activities (February 2008):

- Watercourse Crossings;
- Instream Works;
- Laying Pipes and Cables in Watercourses;
- Outlet Structures; and
- Riparian Corridors.



**Office of the Director General**

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Our ref.: MP 10\_0034

Dear Mr Mohajerani

**Subject: Supplementary Director-General's Requirements for Crookwell 3 Wind Farm MP 10\_0034**

I refer to the Director-General's requirements which were issued for the above project on 7<sup>th</sup> April, 2010.

These requirements specify that the community must be consulted during the preparation of the Environmental Assessment and relevant issues must be addressed in the document.

It is clear from submissions being received by the Department that many members of the community are not satisfied with the level and nature of consultation being undertaken by proponents during the preparation of wind farm environmental assessment documents.

I wish to emphasise the importance of effective and genuine community consultation and the need for proposals to proactively respond to the community's concerns.

Accordingly, under section 75F(3) of the *Environmental Planning and Assessment Act*, I am issuing supplementary requirements which must be addressed in the preparation of your Environmental Assessment. These requirements are:

1. a comprehensive, detailed and genuine community consultation and engagement process must be undertaken. This process must ensure that the community is both informed of the proposal and is actively engaged in issues of concern to them, and is given ample opportunity to provide its views on the proposal. Sufficient information must be provided to the community so that it has a good understanding of what is being proposed and of the impacts. There should be a particular focus on those non wind farm associated community members who live in proximity to the site;
2. the Environmental Assessment must clearly document and provide details and evidence of the consultation process and who was consulted with;
3. all issues raised during the consultation process must be clearly identified and tabulated in the Environmental Assessment; and
4. the Environmental Assessment must state how the identified issues have been addressed, and how they have informed the proposal as presented in the

Environmental Assessment. In particular, the Environmental Assessment must state how the community's issues have been responded to.

I wish to emphasise that the Department will review compliance with these, and other, requirements during its adequacy review of the Environmental Assessment. If it does not adequately respond to these requirements it will not be accepted as adequate for public exhibition.

Your contact officer for this proposal, Anna Timbrell, can be contacted on 9228 6345 or via email at [anna.timbrell@planning.nsw.gov.au](mailto:anna.timbrell@planning.nsw.gov.au). Please mark all correspondence regarding the proposal to the attention of the contact officer.

Yours sincerely,

*SHaddad*

Sam Haddad  
**Director-General**

*16/8/2011*