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Summary

Acceptance of rural wind farms in Australia: a snapshot

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> KEY FINDINGS: SUMMARISED

The study produced four high level findings, which are briefly outlined below:

There is stronger community support for the development of wind farms than might be otherwise assumed from media coverage.
This includes support from rural residents who do not seek media attention or political engagement to express their views.

The actual and perceived local costs and benefits of wind farms are strongly influenced by the design, implementation, and community engagement processes.
Many of the benefits can be shared or communicated in ways that would enhance community support for the development of wind farms in a region.

Existing regulatory approaches provide an appropriate framework for negotiating wind farm developments, but there is scope for improving outcomes.
This study of nine wind developments found that while community concerns were sometimes overstated, limiting opportunity for community input risks undermining potential local support. The alternative of more prescriptive rules and processes to protect perceived community interests can risk forgoing developments that could deliver local benefits and achieve local support.

The emerging notion of a 'Social Licence to Operate' provides a useful framework for wind farm developers to engage local communities in ways that could enhance transparency and local support, and complement formal regulatory processes.
This approach could provide a structured and cooperative framework for exploring strategies for reducing potential adverse impacts, sharing financial benefits equitably, and building local trust and understanding through a clear communication process.

Despite the prevalence of popular media articles, there is minimal academic examination of this situation. This report provides new research that analyses community acceptance of Australian wind farms from a variety of stakeholder perspectives.

Ongoing CSIRO research that engages with the wind industry will contribute further understanding and knowledge to the possibilities and workability of an SLO for wind farms in Australia.

Summary

Acceptance of rural wind farms in Australia: a snapshot

Exploring community acceptance of wind farms: the imperative

The CSIRO Energy Transformed Flagship aims to lower greenhouse gas emissions by providing sustainable, efficient, cost effective energy solutions for electricity supply and transport.

The current policy context in which the Flagship works includes the Australian Government's amended Renewable Energy Target (RET). This Target seeks to provide 20% of Australia's electricity generation from renewable energy sources by 2020.

Wind-generated electricity is a proven renewable energy technology with excellent resources in Australia. It is anticipated that wind could contribute the early majority of renewable energy generated for the large-scale RET.

The uptake and installation of wind farms, however, is currently slow owing to the low cost and volatility of the Renewable Energy Certificate price, regulatory factors as well as community resistance. This resistance presents a 'social gap' between the documented high levels of support for wind farm development and the lower success rate and cited opposition in the media to wind farm development proposals. If popular media articles were to provide the only evidence for or against wind farms, opposition in the media would dominate—hence the need for a more academic study of community acceptance of rural wind farms in Australia.

Public consent is central to achieving cuts in Australia's greenhouse gas emissions through a combination of technological innovation, economic reform, and societal change, according to CSIRO research (Ashworth, 2011). This report provides a snapshot of community acceptance level regarding Australian wind farms from a variety of stakeholder perspectives.

Community acceptance: the methodology

The research employed a range of methods, including a literature and information review, a media analysis of newspaper articles, case studies, and semi-structured qualitative interviews with a range of stakeholders associated with wind farms.

The media analysis of 49 articles from 19 newspapers in the second half of 2010 found more reasons for wind farm opposition were reported than reasons for support. The most cited reasons for **rejecting** wind farms were:

- landscape change and visual amenity impacts
- noise impacts
- poor consultation

The most cited reasons for **supporting** rural wind farms were:

- as a means to take action against human-induced climate change,
- reduce greenhouse gas emissions
- support job creation

Wind-generated electricity is a proven renewable energy technology with excellent resources in Australia.

Nine wind farms were selected as case studies. Each case was intentionally selected to represent the states with greatest wind resources (New South Wales (NSW), Victoria (Vic) and South Australia (SA)), various stages of development (operational, under construction, proposed and rejected) and a range of sizes (below and above 30MW). When compared, common themes arose despite the different geographical, historical and developmental characteristics of each wind project. There were no obvious differences observed between the community's experiences of wind farms in each state, even though there are a variety of state-based renewable energy policies. There were, however, differences depending on the size of the wind farm, when comparing community-scale (often less than 30MW) and industrial scale wind farms.

For each case study, in-depth, qualitative interviews were undertaken with stakeholders who represented the wind company, the local government, local opposition, local support and the turbine host. Extensive methodological procedures can be found in Section 4 of the main Wind Farms Report.

Stakeholder views of wind farms

As noted above, this research consulted a range of stakeholders on their perceptions of wind farms, and identified both a diversity and similarity of views:

- **Wind company representatives** were supportive of wind power, but many businesses were vulnerable to community acceptance issues.
- **Local government representatives** held mixed views on wind farms. Some welcomed the resulting regional development, while others observed the significant angst caused by wind farm proposals.
- **Turbine hosts**, all farmers in this sample, supported wind farms and generally did not hold concerns about visual, noise or other negative impacts.
- **Community members** publicly **opposing** local wind farms spoke as self-appointed representatives for others nursing grievances with wind farms. Most were hobby farmers with small acreages, former professionals, and/or members of Landscape Guardian groups.
- **Community members** publicly **supporting** their local wind farm were motivated by the 'climate friendly' nature of wind farms, as opposed to that generated from fossil fuels. They appreciated regional development, increased local identity, potential employment and financial opportunities arising from wind farm developments.

Section 6 in the main report gives an in-depth narrative and depiction of each wind farm involved as case studies.

Consultation: key game-changers

Inadequate consultation and engagement with the community is described as a key process contributing to social conflict around wind farm development in Australia.

As outlined in the technical report, the sense of acceptance and ownership of a local wind farm can differ according to both the scale but, perhaps more importantly, the depth and agency involvement allowed in the consultation process. For example, a wind farm approved using the Ministerial consent enabled by the legislative 'critical infrastructure clause', where appeal was prohibited caused significant community distrust of the process and developers themselves.

This issue alone sets the main stage for encouraging methods by which all stakeholders feel empowered and accepting of wind farm energy.

Towards wind farm acceptance: vital issues

The following findings are arranged in Table 1 (page 6) using the 'traffic lights' system to indicate key issues that affect community acceptance of wind farms in Australia. The findings are ranked using the following colour codes:

RED
An issue that is an acknowledged cost or unavoidable problem.

AMBER
An issue that is a 'game-changer'—if it is managed carefully, it has the potential to enhance acceptance; if poorly managed, it has the possibility to increase opposition.

GREEN
A benefit that is already being received and/or an issue that is already being managed.

The issues noted in amber colour are those that, with sufficient attention, stand to significantly increase wind farm acceptance.

Table 1: Key findings presented as a benefit, a game-changer or a cost

ASPECT	FINDING
Contextual	For some, the planning system does not adequately consider contribution from individuals and communities, especially the experience of court appeals and 'critical infrastructure' legislation.
Physical	Environmental gains include low carbon electricity, supporting farming, and improving access for fire fighting.
	While electricity generation intermittency does exist, it can be managed, predicted, and mitigated to provide a reliable source of electricity.
	Shadow flicker occurs for short periods during sunrise and sunset; blade glint is prevented through low reflectivity surface treatment.
	Small, community-scale wind farms offer local sustainability solutions to cut greenhouse gas emissions and support local development.
	The layout and number of turbines in each cluster can minimise perceived negative visual impact.
	Noise from wind turbines is reported more frequently than transportation noise with equivalent noise characteristics.
	Bird and bat deaths have occurred and require careful planning, mitigation and/or monitoring.
Economic	Communities benefit from a local wind farm through increased local business, community funds and local government revenue.
	Direct jobs are higher during wind farm construction; less for long-term operation.
	Turbine hosts can use rental income to remain on the farm post-retirement, conserve biodiversity, and prevent subdividing.
	Property prices have not been found to increase or decrease, although the potential market of buyers may be decreased.
	Wind farms can attract tourism, but may conflict with other tourism features.
	For some individuals, sufficient financial compensation will make a wind farm acceptable. This could include compensation/rental payments to all residents in a specified radius, payment of electricity bills and local government contributions.
	The expense of offshore turbines to avoid local visual impact is difficult to justify in Australia.
Social	Developers acting beyond required compliance, including willingly engaging outside the formal planning process, contribute to more accepted energy projects.
	Consultation principles of honesty and transparency, full and unbiased information, and not interpreting fund donations as buying support may increase community engagement and acceptance.
	A 'Social Licence to Operate' provides a useful framework for wind farm developers to engage local communities in ways that could enhance transparency and local support, and complement formal regulatory processes.
	There is currently no evidence linking noise impacts with adverse health effects. However, proposed wind farms can create stress, leading to negative health outcomes.
	The vocal minority are more often prominent in the media, and secure political attention. A group from the 'Landscape Guardian' movement of wind opposition contests half of all wind farm proposals. These groups often contact local residents early in the project and share concerns about wind farms.
	The reasons for opposition by some participants suggest that wind farms proposals are triggering a range of underlying cultural or ideological concerns which are unlikely to be addressed or resolved for a specific wind farm development. These underlying issues include pre-existing concerns that rural communities are politically neglected by urban centres, commitment to an anti-development stance, and opposition to a 'green' or 'climate action' political agenda.

A concise but detailed table of the considerations that may affect community acceptance can be found in the Discussion Section (8) of the main Wind Farm Report.

Moving forward: a Social Licence to Operate wind farms

As one commentator stated, wind energy

> *"relies on a Social Licence to Operate ... It's simply not enough to be clean and green, the industry needs to be adept at engaging the local community"*
> Parkinson, 2011.

The discussion regarding community responses to wind farms can be considered under the umbrella concept of a 'Social Licence to Operate' (SLO). This proposed term describes the ongoing acceptance or approval for a development granted by the local community and other stakeholders (Corvellec, 2007; Thomson & Boutilier, 2011; Parsons & Moffat, 2011).

An SLO is referred to as 'ongoing' to reflect that it is a dynamic approval process that must be continually renegotiated as beliefs, opinions and perceptions can change when new information is acquired (Thomson & Boutilier, 2011). It is likely to consist of community expectations regarding the type of impact a new development will have and the behaviour of the developer (Parsons & Moffat, 2011). An SLO will be affected by the "degree of match" between these expectations and the developer's delivery on commitments (Parsons & Moffat, 2011).

While industries are subject to legal and other regulatory requirements, an SLO incorporates the additional aspects to which the industry meets the expectations of local communities, wider society, and various constituent groups.

At times, the demands and expectations for a development will result in an SLO with conditions expected by the community that may be tougher than those imposed by regulation (Gunningham *et al.*, 2004).

By definition, there is no legal requirement for a Social Licence to Operate in the wind or other industries. However, Corvellec (2007) notes that an informal SLO can develop as wind developers seek acceptance of their proposals through open communication at local meetings, local government engagement, applications and various required assessments. In instances where wind developers have gone beyond formal compliance to engage with the community, the developer's credibility has been raised with authorities and the community, and has been noted to positively influence the political and regulatory processes underpinning the granting of formal licences (Mason *et al.*, 2010).

To contribute to the growing discussion on SLO, this research offers some foundations for an SLO relevant to wind farm development in Australia. Mason *et al.*, (2010) described an acceptable development as one where the potential positive impacts represent an acceptable trade-off to the negative impacts, and where there is sufficient trust building and trustworthiness surrounding the industry and its development.

These 'potential positive impacts' and 'trust-building' criteria align well with the findings that emerged from this research around acceptable wind farm development. Indeed, the addition of positive impacts- or lack thereof- was commonly cited in the information and interviews as central to the acceptability of a wind farm.

The study findings suggest that community acceptance of wind farms could be increased by developers intentionally adopting a 'Social Licence to Operate' approach, or similar frameworks for transparent and well structured community engagement.

There is evidence that increased community acceptance from such approaches would result in increased approval and installation of wind farms, and would thus increase the possibility of achieving Australia's Renewable Energy Target in a cost effective way. For more in-depth discussion of SLOs, see Section 3.1 in the full Wind Farms Report.

References and further reading

Full details can be found in the technical report:

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