

13. DECOMMISSIONING AND WASTE MANAGEMENT

Director-General's Requirements - the EA must include:

1. an assessment of the key issues relating to Decommissioning;
2. an assessment of key issues relating to Waste Management.

13.1 SUMMARY OF OBJECTIONS

Decommissioning and Waste Management: Flyers Creek Wind Turbine Awareness Group (FCWTAG) objects to the Flyers Creek Wind Farm proposal:

- 13.1.1 The arrangements for decommissioning as set out in the Environmental Assessment are inadequate and provide both the host and the community with little security to ensure the timely decommissioning and removal of the wind turbines at the end of their useful life.
- 13.1.2 The argument for a decommissioning bond is dismissed by Infigen as unnecessary whereas research shows this is the only security available to the community. **The DGRs are not met.**
- 13.1.3 There is insufficient information provided in the EA concerning waste management in any of the construction, operation or decommissioning phases.

13.2 DECOMMISSIONING

13.2.1 Introduction

The Director-General is most specific in requiring details and arrangements for the decommissioning of the wind turbine array after its functional life has expired. Chapter 3 (Project Description) deals with it in a short paragraph:

“At the end of its economic life the wind turbine equipment will either be replaced with comparable new equipment or the wind farm will be decommissioned. Replacement of the wind turbines, or repowering, would be the subject of entirely new planning process. Decommissioning would involve dismantling and removal of the above-ground equipment and site rehabilitation. Turbine footings will remain buried at a level below the ground surface acceptable to the landowner. Access tracks

may be retained depending on the landowners' wishes. Any overhead lines no longer required will be removed."

It is not dealt with in Chapter 19 (Statement of Commitments). Wind turbine life span for FCWF is stated to be 20 to 25 years. There are few, if any, wind turbines that have completed this period of operation in Australia. The Australian experience does not include the decommissioning of wind turbines, and to obtain a measure of the issues involved it is necessary to review the overseas experience.

Wind developers and some host landholders claim that "scrap value" for turbines will cover or exceed decommissioning costs¹¹.

This assumption is **incorrect** and highlights that decommissioning issues are a critical problem the wind industry and the NSW Government should now be addressing. **Industrial wind energy developers are making exactly these same claims in planning applications that have been approved in NSW without question to date¹¹.**

FCWTAG has received a report from Waste Management consultant, J. Schneider, examining the implications of the decommissioning process, and has proposed that Infigen Energy pay a bond to cover the costs of decommissioning (Appendix 6). The report's analysis clearly demonstrates that the cost of demolition and removal will be approximately \$100,000 per turbine (today's prices) and that there is no guarantee that scrap metal and material prices will be a profitable exercise. A bond of approximately \$4,200,000 is proposed.

13.2.2 Overseas Experience of Decommissioning

A recent USA study on public record was independently commissioned regarding realistic decommissioning costs for a proposed 124 turbine project in West Virginia. Energy Ventures Analysis Inc (EVA) undertook this study and found that the wind energy company's decommissioning report stated that costs would be covered by income from sale of the scrap were **incorrect**. **EVA found that the decommissioning costs for that particular 124 wind turbine development were underestimated by US\$10million.** The final decommissioning estimate (**in 2008**) was US\$100,000 per turbine. A prepaid bond estimate of US\$12+million was therefore required at the start of the project. This is examined in detail by J. Schneider (Appendix 6)

Infigen management is on record as **not favouring** any **prepaid decommissioning bond**.

A decommissioning report (2007) looking at Comfrey Wind Energy's wind turbine project of fifteen Suzlon S88 2.1MW wind turbines with a height of 80 metres and a rotor diameter of 88 metres. It found that the total estimated cost to dismantle and remove each turbine, without scrap value was US \$154,000. This is likely to be an underestimate since no infrastructure dismantling costs were submitted in this report¹¹

The Vermont Public Service Board (2009) made a ruling relating to decommissioning for a project (Deerfield Wind Project – 30MW, 15 turbines) **in which scrap value was not allowed to be considered**. Among the findings were two that are appropriate for consideration in Australia:

- “The establishment of a fund to decommission the Project is necessary in the event the Project does not succeed, or to ensure its timely and permanent removal at the end of its useful life.”
- “Salvage value for scrap is vulnerable to market price volatility and thus should not be considered a reliable funding source for decommissioning the Project. The amount placed in the decommissioning fund should represent the full estimated costs of decommissioning without netting out estimated salvage value.”¹¹

Future industrial wind energy projects in USA will more than likely require a prepaid bond, without inclusion of any scrap value. It is considered that the fluctuating nature of the scrap metal market cannot be relied upon to predictably cover the cost of decommissioning. Further the IWT industry has not factored any inflationary values for increased labour and maintenance costs at the 20 year expiry of IWT life.

There are currently 19,500 derelict IWT in California alone which remain idle, and for which no legal ownership can be enforced. Should this circumstance occur in NSW the Law would mandate that ownership would revert to the Landowner who would have to assume financial responsibility for turbine removal.

It should be noted that much of the materials contained in the IWT are of a hazardous nature and currently cannot be recycled in Australia.

13.2.3 Decommissioning in New South Wales

In 2009 the New South Wales Parliament, Legislative Council, General Purpose Standing Committee No. 5 held an inquiry into *Rural Wind Farms*. The Inquiry report made several recommendations, specifically recommendation 9 states: “*That the Minister for Planning address decommissioning of wind turbines in the NSW*

Planning and Assessment Guide for Wind Farms, including responsibility for decommissioning, the time period in which turbines should be dismantled and removed and how decommissioning will be funded. And that the Government consider requiring the developer to pay a bond.”

Should future government legislation in New South Wales require a bond to be paid by the energy developer, this would place an additional financial burden that may halt a project after a lease has been signed, potentially leaving the landholder tied to an onerous long term lease agreement without income. The potential problem should decommissioning not be underwritten is that this financial burden reverts to the landholder and/or the community.

The NSW guidelines should require for an Australian Bank Guarantee & upfront AAA bond to cover decommissioning costs at the start of the project. The government should administer the decommissioning fund.

It is worthy of note that current decommissioning and IWT removal does not remove the hundreds of tons of concrete foundation. This remains for ever - as may underground cabling!



Figure 13.1 Typical evacuation site of end-of-life wind turbine

13.2.4 Decommissioning Arrangements for Flyers Creek Wind Farm

Apart from the brief mention of decommissioning in the Environmental Assessment

there appears to be no decommissioning arrangements. When asked about this at a recent Council Community forum (28/11/2011, Blayney) Infigen's Senior Development Manager replied that **no bond would be necessary** as the scrap value of the turbines would cover all costs. In fact he resists the idea of a bond altogether. One assumes this is Infigen's official position.

In a letter to the NSW Department of Planning (22/07/2011) Infigen gives more information about its position on decommissioning than it does in the Environmental Assessment and, as such, bears reproducing:

"Infigen Energy takes responsibility for the decommissioning of the wind farms, including the wind turbines, as part of every one of our landowner agreements. In addition, it is customary, as in NSW, that decommissioning of the wind farm by the wind farm owner is required by the conditions of consent.

"The proposition that a company might abandon the wind turbines without decommissioning them faces several challenges:

1. "Historically, wind farms are far more likely to be re-powered (new turbines installed in place of the old turbines) than decommissioned.
2. "Even if the owner of a wind farm were to go bankrupt and leave the wind turbines standing, the scrap value of the wind turbines (towers, electric cabling etc) far exceeds the cost of bringing in a crane to dismantle the turbines. The value of scrap metal will only rise over time making this trade off even more favourable over time.

"The suggestion that a decommissioning bond be required is unnecessary, and simply represents another attempt to add additional and unnecessary costs to wind farms. Such costs would inevitably have to be passed onto NSW electricity customers, **so we trust the NSW Government would reject including a decommissioning bond in the draft wind guidelines.**"

There are several conclusions to be drawn here:

1. After 20 to 25 years there is no guarantee that Infigen will exist as a viable financial entity to assume its legal responsibility for decommissioning. The energy industry is inherently volatile and subject to takeover and acquisition. Its current viability is ultimately dependent upon **Government Subsidy** which has a finite and political end point. This does not mean that the responsibility to decommission will not be transferred to the next company, but it is easy to see this being a future difficulty with complex legal argument and ramifications. Experience throughout the USA has

found that some wind turbine farms have indeed been simply abandoned at the end of their functional life. To date it is reported that thousands of wind turbines lie abandoned with no one claiming responsibility or any enforceable legal ownership.

2. In NSW it is the land owner who bears the ultimate responsibility and should the land owner be left with abandoned wind turbines he will have to pay for and organise the decommissioning himself.
3. Infigen states that historically the wind farms are more likely to be re-powered. No wind farm in Australia is old enough for anyone to know what “historically” might happen. To contemplate the “historical” future is farcical.
4. The American experience is that the scrap value is always overestimated and in many instances will not cover the cost of removal. The landowner will therefore have to make up the shortfall, which will detract from the income he has received over the past 20-25 years. There is also the massive problem road transfer of bulk steel structures and the perennial problem of the adequacy of narrow country roads generally poorly maintained by impoverished rural Local Councils.
5. Of course, after 20-25 years the original landowner may have sold his property or younger members of the family may have taken it over. Someone who eventually owns the property for a shorter period than the 20-25 years may not appreciate having the reduced income from the turbines and yet still have to pay for decommissioning.
6. The only sensible and logical safeguard is to legislate for the prepayment of a bond by the energy company. This type of payment is now common procedure within the mining industry. At the Council community meeting (28/11/2011) Infigen’s Senior Development Officer stated that there was **no need for a bond** because, unlike the mining industry, little was required in the way of rehabilitation. However the process of dismantling will require significant logical organisation: cranes, trucks (presumably the same RAVs that were required to bring the wind turbine on site – unless the wind turbine and its parts are dismembered into smaller units), new upgrading of roads and access tracks which conceivably would have fallen back to their rural, and secondary road status. The dismantling of cabling, overhead transmission lines and hazardous material would require specialist involvement.
7. J. Schneider in his report concludes:

To ensure funds are available to the Blayney Shire Council to cover costs of decommissioning, Flyers Creek Wind Farm developers should post a surety bond or equivalent financial security instrument that would be in place on or before the date thirty (30) days after the commencement of pouring of concrete for the first wind turbine foundation, and would be in place for the life of the project. The security would be renewed by FCWF annually, or another schedule agreed to by the Blayney Shire Council and the Flyers Creek Wind Farm developers.

The amount of the financial security should be at least \$100,000 per turbine based on the figures demonstrated above, and as referenced to the requirements in the United States of America. Terms of the security should include:

- Designation of Blayney Shire Council as beneficiary;
- Terms under which funds would be dispersed;
- A provision that Blayney Shire Council could draw 50% of the funds if FCWF does not renew the security instrument prior to its expiration date; and
- An escalating factor to ensure that the full costs are covered when decommissioning occurs and/or abandonment of the project.

Every three years an independent engineering firm agreed to by both parties, will review the nett decommissioning costs in a report to the Shire Council. Any adjustment to the security value recommended by the engineer's report would be in place within ninety (90) days of delivery of the report to the Blayney Shire Council.

8. If bonds are not required under the old Part 3A assessment FCWTAG is not surprised that Infigen is anxious to complete the assessment and gain approval for the project before the possibility of a bond (leaving less profit) is imposed. This fact would explain its indecent haste as seen with the very truncated assessment period of 30 days (extended to 60) while Woodlawn Wind Farm had in excess of 100 days. Infigen is arguing any bond being payable as part of the new wind farm guidelines. **This is reprehensible and does not auger well for good community citizenship or relationships. The Director-General's requirements are certainly not met with respect to decommissioning.**

13.3 WASTE MANAGEMENT

- 13.3.1 Waste management is dealt with very perfunctorily in the Environmental Assessment and several aspects have been neglected. The issues of waste management are dealt with in more detail in the report provided by J. Schneider (Appendix 6).