

MODIFICATION OF TURBINE TYPE BODANGORA WIND FARM PROJECT

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Infigen Energy to considering a modification to increase the length of the approved wind turbine blade at the Bodangora Wind Farm and has sought an opinion on the impact this may have on bird fauna. This report is in response to this request.

The following turbine dimensions are being considered as part of the modification: Option 1 and Option 2:

	Hub Height	Blade Length	Blade above Ground	Increase in Sweep
Approved	100m	114m	40m-150m	-
Option 1	85m	120m	25m-145m	1103m ² (10.8%)
Option 2	85m	130m	20m - 150m	3067 m ² (30.0%)

The flora and fauna report for the Environmental Assessment by KMA (2011) contained the following table of results from bird surveys in the area of the wind farm. Those surveys found that 97 percent of all observations were of birds active below 20 metres. This is not surprising as local tree height is between eight and 20 metres. Only 0.4 percent of observations were of birds flying above 50 metres from the ground. The results are entirely consistent with other wind farms that have been surveyed by the consultant.

The birds that fly above 20 metres can be divided into those that fly individually and those that flock. The former includes the birds of prey, while the latter includes the Sulphur-crested Cockatoo and Galah.

The following conclusions are made in relation to modifying the turbine type and potential for increased bird strike

- No threatened bird species were recorded flying or are likely to be flying above 20 metres.
- The species that were recorded above 20 metres are common and widespread species.
- Based on the survey results in the attached table, for all options the difference in blade tip height makes no change to the birds potentially affected. That is, regardless of the modification in blade length there is the same risk of bird strike.

In summary, while there is little risk of bird collision on wind farms in Australia, as most bird activity is at low elevations, the higher the lowest point of the blade is above the ground the less likely is blade strike.

Summary of bird survey data (after KMA 2011).

Transect Survey		Height Class (No. of birds)					
No.	No. species ¹	Time	Ground	<10m	10-20m	20-50m	>50m
October 2010							
1	18	125 mins	35	39	9	4	1
2	19	60 mins	41	36	11	3	1
3	22	43 mins	49	26	4	4	2
4	10	25 mins	8	12	5	0	0
5	15	27 mins	20	11	4	3	0
6	30	270 mins	233	42	11	4	2
7	13	110 mins	79	55	15	6	0
8	12	30 mins	7	8	7	0	0
9	20	140 mins	51	31	15	6	1
10	17	110 mins	21	12	3	2	1
Total	44	940 mins (15.7 hrs)	544	272	84	32	8
Percentage	-	-	58%	29%	9%	3%	1%
July 2011							
11	20	100 mins	102	66	26	3	0
12	16	189 mins	59	59	21	0	0
13	27	184 mins	109	55	7	1	2
14	14	37 mins	12	16	0	0	0
15	17	60 mins	51	75	25	3	0
16	25	300 mins	119	78	2	6	0
17	17	65 mins	26	33	1	22	0
18	21	105 mins	73	148	6	2	
19	17	35 mins	49	81	0	3	
Total	48	1075 mins (17.9 hrs)	600	611	88	40	2
Percentage	-	-	45%	46%	7%	3%	0.2%
Total	60	2015 mins (33.6 hrs)	1144	883	172	72	10
Percentage	-	-	50%	39%	8%	3%	0.4%

1. Native species only included.

Reference

Kevin Mills & Associates (2011). Flora and Fauna Assessment, Bodandora Wind Farm, Shire of Wellington, New South Wales. Prepared for Infigen Energy Pty Limited, Sydney, August.