

**Gerald McTiernan**

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**From:** Saeed Khan <Saeed.Khan@rpsgroup.com>  
**Sent:** 27 May 2015 16:15  
**To:** McCann John (John.McCann@seai.ie); Kennedy Matthew (Matthew.Kennedy@seai.ie); Jim Gannon; David Phelan  
**Subject:** 45dB results  
**Attachments:** Table 4.pdf; Table 3.pdf

Hi All,  
Please find attached Table 3 and Table 4 with the 45dB results.

Please contact me if you have any query.

Thanks,  
Saeed

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Saeed Khan MSc (GIS), PGDip, MIEI  
GIS Manager - RPS  
West Pier Business Campus,  
Dun Laoghaire, County Dublin,  
Ireland  
Tel: +353 (0) 1 488 2900  
Direct: +353 (0) 1 4882934  
Mobile: +353 (0) 86 312 5098  
Email: [Saeed.Khan@rpsgroup.com](mailto:Saeed.Khan@rpsgroup.com)  
www: [www.rpsgroup.com/ireland](http://www.rpsgroup.com/ireland)

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**Table 4 - Details of the land cover classes (Memorandum dated 29/04/2015) and the model calculation (20% of capacity delivered)**

Absolute Noise Limit 45 dB

Location	Spatial extent (scale)		Height	Matching Minimum Wind Speed at Tip Height (m/s)	Setback from sensitive properties (residences, schools)	Area available (km <sup>2</sup> ) matching minimum wind speed	Remaining Area (km <sup>2</sup> ) following application of 45dB limit	Percent of ROI land Area	Capacity available (MW)	Assumed Capacity Factor for Tip Heights	Capacity Output Potential (GWh)
	Existing guidelines	New									
Mountain Moorland and hills	> 150m	Tend towards large	Existing guidelines Any height	7.75	Min 500m, multiplier of 5 (750m max)	293.14	271.55	0.39%	543.10	33.33%	1,347.84
	< 150m	Tend towards small	Medium	8	Min 500m, multiplier of 6 (750m max)	20.55	19.16	0.03%	38.32	30.00%	85.60
Transitional marginal land	Ridges and hilltops preferred	Tend towards small	Medium and short	8	Min 500m, multiplier of 7 (875m max)	0.33	0.10	0.00%	0.20	30.00%	0.45
	Flat farm land	Tend towards small	Medium	8	Min 500m, multiplier of 7 (875m max)	70.84	2.76	0.00%	5.52	30.00%	12.33
Flat peat land	Large	Tend towards large	Tall	7.75	Min 500m, multiplier of 5 (850m max)	8.23	2.76	0.00%	16.32	33.33%	40.50
	Urban town & villages	Tend towards small	Short	8	Min 1km from town & villages	0	8.16	0.01%	0.00	30.00%	0.00
Lakeside	Industrial	Tend towards small	Short	8	Min 600m	0	0.00	0.00%	0.00	30.00%	0.00
	Set back from water	Tend towards small	-	8	Min 500m, multiplier of 8 (800m max)	0	0.00	0.00%	0.00	30.00%	0.00
Coastal	Large	Tend towards large	Tall may be acceptable	8	Min 500m, multiplier of 8 (800m max)	6.76	6.46	0.01%	12.92	30.00%	28.86
	Small	Tend towards small	Short	8	Min 500m, multiplier of 8 (800m max)	0	0.00	0.00%	0.00	30.00%	0.00
						399.85	308.19		616.38		1,515.58

Republic of Ireland Land Area (km <sup>2</sup> )	70,273
Capacity Intensity (MW per km <sup>2</sup> )	10
Losses	15%
Hours in the Year	8,760

**Table 3 - Details of the land cover classes (Memorandum dated 29/04/2015) and the model calculation**

Absolute Noise Limit 45 dB

Location	Spatial extent (scale)		Height		Matching Minimum Wind Speed at Tip Height (m/s)	Setback from sensitive properties (residences, schools)	Area available (km <sup>2</sup> ) matching minimum wind speed	Remaining Area (km <sup>2</sup> ) following application of 45dB limit	Percent of ROI land Area	Capacity available (MW)	Assumed Capacity Factor for Tip Heights	Capacity Output Potential (GWh)
	Existing guidelines	New	Existing guidelines	New								
Mountain Moorland and hills	> 150m	Tend towards large	Any height	150m	7.75	Min 500m, multiplier of 5 (750m max)	293.14	271.55	0.39%	2,715.50	33.33%	6,739.20
	< 150m	Tend towards small	Medium	125m	8	Min 500m, multiplier of 6 (750m max)	20.55	19.16	0.03%	191.60	30.00%	428.00
Transitional marginal land	Ridges and hilltops preferred	Tend towards small	Medium and short	125m	8	Min 500m, multiplier of 7 (875m max)	0.33	0.10	0.00%	1.00	30.00%	2.23
Flat farm land		Tend towards small	Medium	125m	8	Min 500m, multiplier of 7 (875m max)	70.84	2.76	0.00%	27.60	30.00%	61.65
Flat peat land	Large		Tall	170m	7.75	Min 500m, multiplier of 5 (850m max)	8.23	8.16	0.01%	81.60	33.33%	202.51
Urban/Industrial	Urban town & villages	Tend towards small	Short	100m	8	Min 1km from town & villages	0	0.00	0.00%	0.00	30.00%	0.00
	Industrial	Tend towards small	Short	100m	8	Min 600m	0	0.00	0.00%	0.00	30.00%	0.00
Lakeside		Tend towards small	-	100m	8	Min 500m, multiplier of 8 (800m max)	0	0.00	0.00%	0.00	30.00%	0.00
Coastal	Set back from water	Tend towards small	Tall may be acceptable	100m	8	Min 500m, multiplier of 8 (800m max)	6.76	6.46	0.01%	64.60	30.00%	144.30
							399.85	308.19		3,081.90		7,577.89

Republic of Ireland Land Area (km <sup>2</sup> )	70,273
Capacity Intensity (MW per km <sup>2</sup> )	10
Losses	15%
Hours in the Year	8,760