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Gone with the Wind !

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In case you come across widely differing numbers of the wind power potential in India, don't despair. There are no so called wrong figures but only conservative to unrealistic assumptions that make up for the difference. It is also not so much an issue of serious uncertainties in wind speed measurements and modelling. The speculative part is the assumption of area requirement say 12 hectares per MW of capacity, and the availability of land, say 1%, for wind farming. The above published newest table of September 2005 is based on these assumptions. Actual capacity potential could be one third or triple. Take your pick and accept the fact that one order of magnitude is a fair error when future developments are predicted.

Table 1: Standard Wind Class Definition and Indian Assessment

Class	50 m Height		Installable MW
	Wind Speed m/s	Wind Power W/m ²	
1	< 5.6	< 200	
2	5.6 - 6.4	200 - 300	43,106
3	6.4 - 7.0	300 - 400	4,680
4	7.0 - 7.5	400 - 500	397
5	7.5 - 8.0	500 - 600	16
6	8.0 - 8.8	600 - 800	-
7	8.8 - 11.9	800 - 2000	-
		Total	48,199

Nevertheless, let us assume that 45,000 MW of additional wind power up to the year 2036 may be not a too ambitious target for the next 30 years. Wind farms will then generate $50,000 * 8,760 * 0.18 = 78,840$ GWh of electricity. However in order to move up on the Human Development Index Curve, India should manage a per capita consumption of 2500 kWh as well. In other words $2.5 * 1,438,155,793/1000 = 3,595,389$ GWh should be approximately the consumption in 2036. Consequently wind power may provide 2.2% of electricity in 2036. Let us totally de-link these issues from whether someone lobbies for wind power or dislikes it. This is a fast growing industry that employs people, makes profit, becomes more and more competitive, as well as saves fossil fuels. On the other hand, it is a marginalized solution to the overriding more serious problem of inefficient use of electricity, lack of energy modesty and decoupling of economic growth from growth in electricity consumption. In case we don't get these overriding issues addressed with vigor all the efforts of the wind power industry will be gone with the wind !