

A Little Wind Power Math

1. PUC 2005 Report on Wind Power states in section 2 under wind power potential, states that their initial estimate for wind power development is 1000 megawatts (MW).
2. The National Renewable Energy Laboratory estimates total wind power potential at a little over 8,000 MW in class three winds or better. A Connecticut study escalates that of this total, approximately 2,000 MW of power is developable in the near future.
3. "Capacity Factor" is the actual amount of power generated by a wind turbine. It differs from its "nameplate output" which is the maximum it can produce under ideal conditions and sustained wind speed. [see PUC report, Wind Power Potential, note #22]
4. The national average "capacity factor" for wind turbines is approximately 28%. The Redington developer estimated production would be 5%, an extremely generous estimate.
5. Therefore, a project similar to the original proposed Redington development, which would have used huge 400 + feet tall turbines which had name plate ratings of 3 MW each, [3 MW times 30 turbines or a total of 90 MW nameplate rated] .

This means that taking into account the actual "capacity factor" output of approximately 30% per turbine, which would be approximately a third of its nameplate rating or a little less than one MW average output per turbine. (See PUC report for further discussion of this issue.

4. This would mean that based on industry and agency estimates of potential wind power outputs of between 1,000 to 2,000 MW, then the number of turbines similar to those currently being proposed by developers, would imply that between 1,000 to 2,000 turbines, each generating about 1 MW, would be required in Maine.

See PUC report for more elaboration.

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