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From: Tarle, Gregory [<mailto:gtarle@umich.edu>]

Sent: Sun 4/14/2013 11:02 AM

To: Kailasapathy, Sumi

Subject: Wind Power in Ann Arbor

Dear Council Member Kailasapathy,

I am concerned about the recent decision to spend over a million dollars of taxpayer money on wind turbines sited in Ann Arbor. I am currently teaching a class "Energy for our Future" at the University of Michigan. One of the first things we learn when studying wind power is that the power you can get from a wind turbine goes as the cube of the wind velocity. Effective wind turbines must be sited in places where the wind velocity is high and steady or where there are frequent high velocity gusts. Attached is a map of US Wind Resources from the Department of Energy. As you can see, wind resources are marginal at best in Ann Arbor but are excellent offshore in the Great Lakes. Winds increase with altitude (because of wind shear) and that is why large towers are needed. It is not educational to site wind turbines at sites selected for non scientific reasons.

I know that you believe you are being a good steward of the environment by promoting wind power. I am an avid environmentalist and I am very worried about the accelerating global greenhouse gas emission. Do you understand that wind power (especially when poorly sited) has a large carbon footprint? With capacity factors of ~30% (at excellent locations) and highly fluctuating power output, wind turbines displace base load power (much of which is carbon free nuclear power) and require fast reacting (usually natural gas) backup power for the remaining 70%. Extending wind farms over large areas and improving electrical distribution grids alleviates this problem somewhat but it is still a problem. Wind is not as environmentally friendly as its proponents suggest.

Please reconsider your decision to site these turbines in Ann Arbor. If you believe in expanded use of wind power and want to go ahead with this project, then please erect these turbines near the shores of Lake Michigan, or better yet, offshore. If wind is economical, you should be able to sell the power to the grid and make money for the city off the project. Finally, let me say that you should use the resources of the University of Michigan when making such decisions. There are many faculty members that would be more than happy to donate their time and advice on technical and policy issues such as these.

Regards,
Gregory Tarlé

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