

**SARAFOLEAN AND ASSOCIATES L.L.C.**  
**ENERGY SERVICES**

July 21, 2004

To: Legislative Electric Energy Task Force (LEETF) Members

Re: Renewable Energy for All Minnesotans and the True Cost of Wind Energy

At the June 29<sup>th</sup> LEETF meeting Sarafolean and Associates (SAL) requested the LEETF clearly identify the true cost of wind energy, adopt the requirement that ALL Minnesotans (regardless of their host utility) have to buy it, and that the true financial costs and subsidies for wind generation be clearly identified in the LEETF's final report to the legislature.

The following items were discussed by SAL.

1. The true cost of wind generation must be identified. To imply that the kWh cost paid to the generator is the only cost for wind power can be very misleading to ratepayers and legislative decision makers. The true cost includes payments to the wind generator for power generated and not generated, the cost of dedicated transmission, backup generation, load following, tax subsidies, above market kWh prices, and the costs associated with third party vs. utility ownership.
2. For reliability purposes, wind generation must be backed-up when the wind does not blow. Fossil or hydro units must be on standby to follow fluctuating wind speeds or provide energy that may be scheduled, but not generated. This requires dedicated fossil or hydro electric assets. True backup requirements and their costs need to be properly calculated and clearly presented. The true, all in costs need to be assigned to any wind project that is discussed.
3. The ideal backup generation for wind generation is hydro electric generation. Hydro assets can instantly follow fluctuating, or lost wind generation. The cost of hydro backup generation should be much less costly, and more environmentally friendly than dedicated natural gas or coal fired units. Backup contracts with hydro producers need to be discussed, evaluated and documented as an alternative to fossil backup.
4. Transmission upgrades and bottlenecks created by wind generation must be identified and included in the cost of wind generation. New transmission lines may be needed, but the location of wind generators may create power flow bottlenecks that can only be relieved by causing other generators to redispatch

their output becoming less efficient, or to pay wind generators for not producing power that can't flow.

Moreover, new transmission lines that will move power only 30% of the time are very expensive on a kWh transmitted basis. These costs also need to be identified and itemized in the LEETF report. Once these itemized costs are identified and reported, it will be clear just how expensive wind and renewable generation is.

5. Additional wind generation should not be built until sufficient transmission lines have been built or upgraded. The lead time to build transmission is much longer than the lead time to build wind generators, therefore, build the transmission first. If generation is built first, and the energy can not be properly delivered to customers, the generator may well be paid for energy not produced or assets not properly utilized.
6. The LEETF should define the cost of third party wind generation ownership, instead of utility ownership. Utility ownership of wind generating assets may cost Minnesota ratepayers significantly less than third party or special interest ownership. This would certainly seem to be the case for investor owned utilities whose investment, construction and operating costs are subject to the review and approval of the Minnesota Public Utilities Commission. The decisions of third party owners or developers are not subject to the same rate of return and prudence reviews required of investor owned utilities. This opens the door to the very real possibility of excessive costs being passed through to ratepayers.
7. Docket E002/M-04-864 at the Minnesota Public Utilities Commission is a request for approval of the power purchase agreement between Xcel Energy and Velva Windfarm, LLC. In that contract, Xcel Energy is obligated to pay Velva Windfarm for energy that Xcel Energy may not need. Xcel states: "During certain times of the year, load levels will be such that not all of the power produced by the Velva facility will be needed for our customer load and there will be limited ability for us to export any excess. During this situation, Xcel Energy may curtail under this contract. The curtailment payment provisions allow the Project to protect its revenue stream to remain financially whole, at the lowest cost to ratepayers."

For generating assets that typically operate only 30% of the time, it seems one-sided to require payment when one party can't take the power, yet are similar payments required when the generator can't provide power? There should be some kind of true-up provisions to ensure the generators do not have it one way.

8. To date, only Xcel Energy has been the target of legislative mandates for renewable and wind generation. Municipal, cooperatives and other investor owned utilities have been excluded from these mandates. If the Legislature truly feels that renewable and wind generation are socially desirable, every Minnesota energy consumer, of every Minnesota cooperative, municipal and investor owned

utility must be required to purchase mandated generation, as Xcel Energy ratepayers are. To burden just Xcel Energy ratepayers with heavily subsidized payments made to special interest generators is extremely discriminatory.

During the June 29<sup>th</sup> meeting, it was mentioned that the State of Texas experienced some costly and unfavorable events related to mandated wind generation. Minnesota should learn from their experiences and consider them in mandating wind or renewable generation. The following information was obtained from some sources in Texas.

1. **New Transmission Lines Can Cost a Lot of Money and Make Things Worse:**  
The McCamey to IH-10 transmission line will actually make the congestion problems in McCamey worse. Because the IH-10 Transmission Line is too small to carry any significant power, the new wind generation would flow north to McCamey and actually worsen the congestion in that area. This would mean that ratepayers would pay \$40 million for a line that would actually cause higher congestion costs.

Comment: Some in Minnesota seem to want “state-wide” wind generation assets. This is not feasible as not every region of the State has the right conditions for generating electricity with wind, nor sufficient transmission capacity to efficiently move that energy. The legislature should be wary of special interests trying to pursue their particular programs at the expense of other generators and consumers in general.

2. **Wind Generators Have Engaged in Gaming the Market:**  
Several Texas wind generators have been found to be over-scheduling power, thereby creating “phantom” congestion that ERCOT then pays the wind generator to solve. This has cost the market millions of dollars and prompted a PUC investigation. Before any additional dollars are diverted to wind generators, ratepayers must be paid back, and this behavior punished.

Comment: ERCOT operates the Texas transmission grid. In Minnesota’s case, the Midwest Independent System Operator does that. MISO’s customers would have to pay to relieve any congestion costs caused by poorly located or scheduled wind generation, so this Texas problem could also happen in Minnesota.

3. **Wind Generators are Selling Texas’ Renewable Energy Credits (RECs) to Others:**  
Texas bears the substantial burden of building transmission lines to wind generation and also pays the costs of keeping the grid up for wind power. However, some wind generators have repaid the ratepayers by selling their RECs out of state. This has the effect of driving up the cost of RECs in Texas and ensures that Texas must build more than 2000 MW of renewable capacity in order to meet their 2000 MW legislated goal. Texas does not get the credit for all the wind power generated in Texas.

Comment: Could the same situation occur in Minnesota too? Will wind generators be eligible for Minnesota wind credits on energy they do not produce, or sell out of state??

In summary, Minnesota is certainly not the only state seeking clean, economical energy. It is also not the only state beset by special interests that demand very expensive payments to subsidize non-utility owned generation sources. Ownership and operating agreements must yield the lowest cost energy for ratepayers. The actual generating assets, not third-party power purchase contracts, should be subject to established Minnesota regulatory reviews.

Paying above market prices for “clean” energy that may be largely gas or coal generation seems to be a charade. Many renewable generation sources simply can’t operate without a natural gas pipe, or a standby fossil generator backing them up. Having natural gas and coal units inefficiently standing by or relieving transmission congestion may well increase pollution.

On behalf of Minnesota industry, Sarafolean and Associates respectfully requests that Minnesota’s elected leaders make renewable decisions that affect ALL Minnesotans, not just Xcel Energy ratepayers. The true financial costs and backup power requirements associated with wind and renewable generation must be clearly documented, presented, and made part of this public debate.

Should the steering committee have any questions, or require any additional information, please contact me.

Respectfully submitted,

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Principal