January 8, 2003

TO: **Distributed Generation Working Group on Tariffs**

FROM: **The Minnesota Project**
The Izaak Walton League of America, Midwest Office

RE: **Comments on Green Credit for Distributed Generation**

We offer these ideas to the group as a starting point for a discussion on a green credit for distributed generation.

Introduction
The working group has agreed that Distributed Generation (DG) producers should be compensated for "green" DG. Green power reduces the impact of energy generation on a host of environmental and human health problems (premature death, asthma, global warming, mercury poisoning, etc.), and hence has great value to the public. Currently, this public value of green power is not fully translated into economic value to the utility.

However, public policy has resulted in market developments that are placing an increasing economic value on green power to the utility. For example, the Minnesota Energy Act of 2001 required every utility to achieve a "Renewable Energy Objective", as well as offer a green pricing program for every electric customer in Minnesota. Future public policy may include a state or national Renewable Energy Standard, a carbon trading regime, or additional regulation of pollutants from fossil fuel plants. We fully expect the economic value to utilities of green power to increase in future years.

Definition of green power
All renewable energy should receive a green credit. Renewable energy does not include refuse-derived fuel. Because natural gas combined heat and power systems can offer high efficiencies and significant emission reductions over other fossil-based fuel systems, they should receive some kind of green credit, although not as high as for renewable energy.

Default green credit with option to opt out
There should be a default credit for green power that is included in the DG tariff. However, customers should be allowed to opt out of this credit if they so choose. The "greenness" of the electricity is a non-power attribute, and can be separated from the energy and capacity value of the generation. If the DG customer can find a better market for this non-power attribute, they should be allowed to do so. Because the market for green power is still in its infancy, many of these markets do not currently exist, but in setting this tariff, we should be thinking ahead to a future when they do exist. Non-the-less, it is anticipated that the great majority of DG users will not wish to accrue the transaction costs involved in marketing green credits, and will accept the default credit from the utility.

Options for setting the value for a green credit
We see five basic options for setting the value of a green credit, outlined below.

1. Externality-based credit
The Public Utilities Commission has set "externality" values for six pollutants (PM, SO2, NOx, CO2, PB, CO), which were updated in 2001. The values are based on an economic valuation of the "damages" that accrue from each of the pollutants. Rather than a fixed value for each pollutant, a range of values (expressed in dollars per ton) is given for each of three generation options: urban, metropolitan fringe and rural. For example, the value for nitrogen oxides from a rural source is from $20 to $114 per ton; while the value of nitrogen oxides from an urban source is from $415 to $1094 per ton. These values are used to compare alternative future generation options.

These externality values could be used as a basis for calculating green credits. The logic is to compare the damages that you are avoiding from existing sources by using green power, and the calculation could be performed in the following manner:

1. Calculate total emissions in tons for each existing fossil fuel source in Minnesota
2. Determine if each source is urban, metropolitan fringe, or rural
3. Take the midpoint of the PUC externality value for each pollutant and category of source (urban, metro fringe and rural), and multiply times total tons of emissions for each pollutant from each source
4. Sum up the total dollar value from each plant, and divide by the total kWh of annual generation from each of these sources

This gives you a figure in $ per kWh that could be used as the basis for the green credit. Note that this does not include a major pollutant, mercury, in the calculation.

2. Market-based credit
This would be a similar calculation as above, but would use market-based values instead of externality values. Unfortunately, there are only two pollutants that have established markets. Sulfur dioxide has a well-developed national market, and could easily be used in this calculation. Nitrogen oxides trade on a market in 20 eastern states, which doesn't include Minnesota; however the market clearing price of NOx in these states could be used as a proxy to set the value here.

3. Hybrid of market and externalities methods
This method would take the market value of a pollutant when a market exists, and otherwise use the PUC externality values; so the market value of SO2 and NOx would be used, and externality values for the other pollutants. The shortcoming is that there is neither an externality value nor a market value for mercury.

4. Green tags credit
Some consumers are willing to pay solely for the green attribute of electricity outside of their utility bill, called green tags, and several markets exist that sell these attributes. Unfortunately, prices vary considerably, and it would be hard to set a single price based on these markets.

5. Green-pricing charge

Minnesota utilities currently charge a price premium for green power. This premium could be passed onto the DG owner as a green credit, after subtracting for the utility's administrative costs that are embedded in the premium.

We favor option 3: hybrid of market and externality valuation

We believe that this would come closest to reflecting the true value to the utility and the customer of green power.