



June 15, 2009

Mr. John Shenot
Policy Advisor, Commissioners' Office
Public Service Commission of Wisconsin
610 North Whitney Way
P.O. Box 7854
Madison, Wisconsin 53707-7854

Re: Investigation on the Commissions Own Motion
Regarding Advanced Renewable Tariff Development Docket No. 05-EI-148

Dear Mr. Shenot:

Included below are comments from Johnson Controls, Inc in response to the Commission's request for responses to the Draft Report in the above-referenced docket.

Johnson Controls appreciates the opportunity to comment on this report and in this docket and looks forward to working further with the Commission and other docket participants in this matter.

Sincerely,

A handwritten signature in black ink that reads 'Jeffrey L. DeLaune'. The signature is written in a cursive, flowing style.

Jeffrey L. DeLaune
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COMMENTS FROM JOHNSON CONTROLS INC ON DRAFT REPORT

1. The existing PV buy-back rates in the \$0.20 to \$0.25/kWh range are poor indicators of the appropriate level at which to set PV ART rates. PV ART rates must be set much higher. The existing utility solar buy-back programs referenced in the Draft Report are only attracting the earliest ‘Early Adopters’. There is no market research to inform us how large or small this group is. It is likely very small. Once this early adopter group is saturated, much higher ART rates will be needed to attract the remaining early adopters and the next market adoption group, the ‘Fast Followers’. Significantly higher PV ART rates are needed, and they are needed for all Distributed Generation Category levels including categories 3 and 4, not just for categories one and two as the report recommends. PV suffers several installation handicaps such as high cost, requiring large amounts of land area, roof loading constraints, shading, orientation, and roof age all which limits its use. But PV has several unique advantages to utilities which justifies higher ART rates. These include energy production levels highly correlated with utility load and generation profiles, energy production levels that are highly correlated with building energy loads, and the capability of being installed at customer load centers which reduce Locational Marginal Pricing (LMP) costs and node constraints, substation transformer loading, and distribution system constraints driven by building load. PV also offsets the high cost natural gas used in load-following and peaking power plants. Higher PV ART rates, and PV ART rates for all DG categories are the only way to ensure that substantial levels of PV generation are installed in order to make more than a token contribution from PV to stabilizing a business’s energy costs, reducing the money sent out of state for energy purchases, and reducing Wisconsin’s CO₂ emissions.
2. The economic analysis used to calculate PV ART levels contains the Federal Investment Tax Credit. This analysis has a critical flaw. Not-for-profit customers of utilities are not eligible for this benefit? This raises the question: Will there be two PV ART rates for each Distributed Generation Category, one for non-profits, and one for for-profit entities? If not, the PSCW is purposefully handicapping the ability of non-profit utility customers to have the same advantage as for-profit customers of using PV systems to stabilize their energy costs.
3. Wind ART levels need to include wind turbines larger than one Megawatt rated capacity. There are very few good quality wind turbines in the 100 to 1,000 kilowatt range. Municipal governments, Higher-Ed campuses, state prisons, waste-water treatment plants, and other

large commercial and industrial customers may all have interest in supplying a portion of their electricity from their own wind turbine or a small cluster of turbines. These utility customers do not necessarily have the advantage of owning a prime wind site to install a turbine. They may only have a Class 2 or 3, marginal to fair wind site. A given wind turbine can supply more electricity during a year if it can be installed on a taller tower and can use longer blades to provide a greater swept area. Most sub-megawatt wind turbines do not have these options. The 1.5 MW Vensys 82, the 1.5 MW GE xle, and the 2.0 DeWind D8.2 are all good low-speed wind turbines having blade lengths ranging for 130 to 147 feet and tower heights ranging from 215 to 330 feet. These larger-sized customer-owned wind turbines provide a customer a reasonable opportunity for stabilizing their energy costs, reducing the money sent out of state for energy purchases, and reducing Wisconsin's CO₂ emissions. The Wind ART must allow individual wind turbines or small wind clusters up to 5.0 MW of rated capacity.

4. This Advanced Renewable Tariff Proceeding focused on renewable energy equipment installations for utility customers in Wisconsin. As a result it naturally did not include a discussion of energy efficiency. However a question that needs to be raised is: Why are these utility customers potentially interested in installing an expensive, long payback renewable energy technology when they very likely could produce much greater energy cost savings for their building by using these same dollars to make energy efficiency improvements? There are several probable answers to this question. An important question for the PSCW to address however is: Can this customer motivation to install a renewable energy system be leveraged to increase the energy efficiency of buildings in Wisconsin? Can a certain amount of energy efficiency improvements be included as a requirement for customers to receive an Advanced Renewable Tariff rate? Focus on Energy incentives already exist to assist these building owners in making these energy efficiency improvements. The obvious question is: Should the utility customers of Wisconsin incur higher costs in order for utilities to provide ART tariffs when the customers receiving the ART payments may be wasting a significant portion of the energy they are using and that the renewable energy system they own is producing even if that energy is supplied to the utility side of the meter? The PSCW should require that ART tariffs include an actual energy efficiency improvement requirement metric, for example: implement all electric energy efficiency improvements with a five year payback or less.
5. While this point gets further into the details of ART tariffs than was covered in the Draft Report, it is instructive to some of the issues to be addressed in setting ART levels. What liability are utilities, their customers, and utility shareholders exposed to by providing ART tariffs? The cash flow that customers receive from their renewable energy system is an incentive, but not a guarantee, that the equipment will continue to operate and provide the benefits to the State as expected. While the risk is low of large scale abandonment of customer-owned equipment, the risk does exist and it is outside the control of the State's utilities. Several scenarios can be constructed where enough customer-owned equipment stops producing energy that utility LMP costs are raised and substation and distribution

system equipment becomes over-burdened. Most potential renewable energy system owners are not experienced energy providers. Should ART participants owning renewable energy systems above a certain size be required to provide a performance guarantee for their equipment by having a maintenance contract with a third-party provider, a performance bond, and a measurement and verification contract as a requirement for receiving the ART tariff? These items will all add costs and ART levels may need to be raised for larger renewable energy systems in order to still provide a reasonable incentive level.