

**BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN**

Investigation on the Commission's Own Motion
Regarding Advanced Renewable Tariff Development

Docket No. 05-EI-148

**COMMENTS OF CLEAN WISCONSIN AND RENEW WISCONSIN
ON THE BRIEFING MEMORANDUM**

I. INTRODUCTION.

Clean Wisconsin (CW) and RENEW Wisconsin (RENEW) appreciate the opportunity to comment on the Briefing Memorandum (Memo) prepared by Commission staff regarding Advanced Renewable Tariff (ART) development in Wisconsin. The Memo succinctly lays out the commenters' positions on many of the important issues that were addressed in the comments. However, CW and RENEW have concerns with respect to the Memo's discussion of the following topics: tariff prices; the capacity cap for individual wind and biomass projects; ART contract duration; and the overall ART program caps. These comments will address each of these concerns under the heading of the individual issues described in the Memo as well as identify CW and RENEW's preferred alternatives for Commission decision.

II. ISSUES AND ALTERNATIVES IN THE MEMO.

A. Issue One – Should the Commission expand the availability and use of ARTs in Wisconsin?

For the reasons explained in their comments submitted to the Commission on February 17, 2009, CW and RENEW believe that ARTs are necessary in order to encourage the development of small distributed renewable generation in Wisconsin. *See* Comments of RENEW and CW in Response to the Commission's Request (February 17, 2009) (PSC Ref. # 108142) (hereinafter RENEW/CW 2-17-09 Comments). Such long-term distributed renewable

energy will provide numerous benefits to the citizens of Wisconsin including improving the environment and increasing local employment and the use of local resources. *See id.* at 2.

Therefore, CW and RENEW support broad availability of ARTs.

To that end, CW and RENEW recommend a decision on Issue One that is not specified in the “Alternatives” identified in the Memo. Specifically, the Commission should order the five major investor-owned utilities¹ to offer ARTs consistent with the Commission’s decisions about covered technologies, tariff design features, and program caps for all size categories the Commission adopts.² The Commission should also require all of the non-major investor-owned utilities in the state³ and all municipal utilities to offer ARTs for size Categories 1, 2, and 3. Municipal utilities that are affiliated with a joint action agency and the non-major investor-owned utilities should also offer ARTs for Category 4 if their total load exceeds the responsibility for Category 4. Such expanded ART availability will allow small power producers throughout the state to participate in establishing renewable resources and will help ensure that technologies are employed in areas where the resource would be most effective.

B. Issue Two – Should the Commission require uniformity in the ARTs offered by Wisconsin electric utilities?

In addition to expanding the availability of ARTs, CW and RENEW believe that more uniformity will help equalize opportunities for small renewable generation developers throughout the state. Thus, CW and RENEW support a variation on Alternative Four, *i.e.*, all

¹ The five “major” investor-owned utilities in Wisconsin are Wisconsin Electric Power Company, Wisconsin Power and Light Company, Wisconsin Public Service Corporation, Northern States Power Company – Wisconsin, and Madison Gas and Electric Company.

² The Memo references four size categories for renewable energy projects: Category 1 (≤ 20 kW); Category 2 (20-200 kW); Category 3 (200 kW-1MW); and Category 4 (1-5 MW). Memo at 16. Section II.C.3 in these comments discusses CW and RENEW’s proposal to expand the size parameters for wind and biomass projects up to 15 MW either by expanding the size range in Category 4 or adding a new Category 5. *See infra* Section II.C.3. The major investor-owned utilities should offer ARTs for all category sizes ultimately adopted.

³ The “non-major” investor-owned utilities in the state are Consolidated Water Power Company, Superior Water, Light and Power Company, Northwestern Wisconsin Electric Company, Dahlberg Light and Power Company, North Central Power Company, Pioneer Power and Light Company, and Westfield Electric Company.

major investor owned utilities in the state should offer ARTs for the same list of renewable technologies with the same ART contract terms between them. Similarly, all non-major investor owned utilities and municipal utilities covered under the Commission’s decision on Issue One should offer ARTs for the same list of renewable technologies and the terms of their ART contracts should be the same.

C. Issue Three – If the Commission chooses to require uniformity in ART prices, what prices might be appropriate?

1. An appropriate price for ARTs must provide “investment certainty.”

CW and RENEW view this issue as one of the most important questions in this proceeding since the pricing of an ART contract is likely to be the driving factor in whether or not small distributed renewable generation actually gets built. CW and RENEW agree with the concept stated in Alternative One that an ART price must provide “investment certainty” as opposed to merely an “adequate incentive” for new renewable energy installations. Since the goal of ARTs is to encourage the development of distributed renewable energy generation, the means of achieving that goal must entail more than merely allowing a small power producer an opportunity to break even. To that end, CW and RENEW support ART contracts that include a single “blended” base price and a (modest) automatic inflation-based price adjustment designed to achieve “investment certainty” similar to the concept identified in Alternative 1C.

However, CW and RENEW do not believe that the prices in Table 2⁴ of the Memo are required to achieve this level of certainty. The prices in Table 2 appear unnecessarily high. A more appropriate price to provide “investment certainty” that would also lead to lower rates would be within the range between the Table 2 prices and the prices necessary to provide “adequate incentives.”

⁴ The Table 2 prices are identified as hypothetical ART prices designed to achieve “investment certainty,” and Table 3 lists prices as possible “adequate incentives.” Memo at 16, 18.

But the prices in Table 3 in the Memo do not provide “adequate incentives” and should not represent the low end of this range. For instance, Table 3 lists the price for Category 4 wind (identified in the Memo as between 1-5 MW) at 9.2 ¢/kWh for a 10-year contract. Individuals familiar with the development of wind projects in Wisconsin that would fall into the Category 4 range have determined that a price exceeding 11 ¢/kWh is necessary to provide the revenue needed to build a project of this size with a 10-year contract. *See, e.g.*, Comments of Wes Slaymaker, P.E. (May 29, 2009) (PSC Ref. # 114404). Similarly, the minimum price necessary to construct a Category 3 project would be 15 ¢/kWh (compared to 10.5 ¢/kWh in Table 3) and a Category 2 project would be 19 ¢/kWh (compared to 12 ¢/kWh in Table 3). *Id.* Thus, an appropriate price to provide “investment certainty” for wind projects under a 10-year contract⁵ would be between the following ranges (in ¢/kWh):

Technology	Category 2 (20-200 kW)	Category 3 (200 kW-1MW)	Category 4 (1-5 MW)
Wind minimum	19	15	> 11
Wind maximum	34.1	23.3	23.3

The minimum prices above may be sufficient to constitute investment certainty if they are combined with grants and incentives from the Focus on Energy (FOE) program. Although individually the FOE programs are not enough to stimulate a dramatic increase in demand for renewable generation, combined with other state funding and incentives they can cumulatively transform the market in a significant way by creating a sustained demand and raising awareness among potential customers.⁶ The FOE incentives applicable to these projects would generally offset the capital costs between 20 and 25 percent, thus allowing for some return on investment.

⁵ The tariff prices discussed in the Memo all assumed a 10-year contract. For reasons discussed in subsection 2 below, CW and RENEW support alternative contract prices of 10, 15, and 20 years. The tariff prices for 15- and 20-year contracts would be less than for 10-year contracts. *See infra* Section II.C.2.

⁶ *See* COMMISSION FOR ENVIRONMENTAL COOPERATION, FOSTERING RENEWABLE ELECTRICITY MARKETS IN NORTH AMERICA (April 2007), available at http://www.cec.org/files/PDF/ECONOMY/Fostering-RE-MarketsinNA_en.pdf.

Combining the minimum prices above with the FOE grants will also provide flexibility in the ability to guard against excessive profits for small renewable generators since modifying the FOE grants will be more manageable than changing the tariff price.

The prices in Table 2 of the Memo for solar photovoltaics (PV) are also too high and the prices in Table 3 for Categories 2 and 3 are too low to achieve “investment certainty.” Table 3 identifies tariff prices for solar PV of 30 ¢/kWh and 25 ¢/kWh for Categories 1 and 2, respectively. Memo at 18. The Memo lists the price for Category 3 as “Standard” which is defined as a customer negotiating a power purchase agreement with their utility, wheeling the power, or accepting a standard parallel generation rate based on the utility’s avoided costs. *Id.* CW and RENEW believe that an appropriate ART price to provide investment certainty for a 10-year solar PV contract would be 30 ¢/kWh for Categories 1, 2, and 3.⁷ There are currently fewer economies of scale associated with the construction of all solar PV systems that have a capacity less than 1 MW, so there is no reason to differentiate the tariff prices between these three size categories.

Finally, the prices for biomass and biogas should also be increased. Based on FOE’s experience to date with small biomass and biogas generation developers, more appropriate prices to achieve investment certainty for Categories 2, 3, and 4 would be 12 ¢/kWh, 11 ¢/kWh, and 10 ¢/kWh, respectively. These prices are also consistent with additional information reviewed regarding biomass stoker boiler power systems capital cost estimates and non-fuel operating and maintenance expense estimates that are included for reference in Attachment A of these comments.

⁷ As with the wind prices, these prices are assumed to be in tandem with FOE grants and incentives.

To summarize, CW and RENEW recommend the following alternative ART prices (assumed to be combined with FOE grants and incentives) as the minimum necessary to achieve investment certainty under a 10-year contract:

	Category 1 (≤ 20 kW)	Category 2 (20 - 200 kW)	Category 3 (200 kW - 1 MW)	Category 4 (1 - 15 MW)
Solar PV	\$ 0.30	\$ 0.30	\$ 0.30	Standard
Wind	n/a	\$ 0.19	\$ 0.15	\$ 0.11
Biogas or Biomass CHP	n/a	\$ 0.12	\$ 0.11	\$ 0.10

2. Generators should be allowed to choose their preferred contract duration for ARTs between 10-, 15-, or 20-year contracts.

Contract duration is as important as the price for an ART. The Memo assumes 10-year contracts in each of its analyses. In their February comments, CW and RENEW noted that generators should be allowed to choose between 10- or 15-year contracts. RENEW/CW 2-17-09 Comments at 33. CW and RENEW have since re-examined their position on this issue and concluded that generators should be allowed to choose between 10-, 15- or 20-year contracts. Having three contract durations opens the door to additional financing options for generators to pursue and will further aid in achieving investment certainty.

3. The maximum capacity for individual wind and biomass projects should be increased to 15 megawatts (MW).

The Governor’s Global Warming Task Force (GWTF) Final Report (Final Report) recommended that ARTs be developed for renewable generation projects of a size up to 15 MW. Final Report at 26. The Memo, however, caps the largest renewable energy projects at 5 MW. *See, e.g.*, Memo at 16. CW and RENEW submit that the cap for wind and biomass projects should be 15 MW as recommended by the GWTF. This may be accomplished by extending the Category 4 cap for wind and biomass to 15 MW or by creating a new Category 5 for wind and

biomass projects that range from 5+ MW to 15 MW. Increasing the cap for wind and biomass projects up to 15 MW will help augment the ability to meet the current Renewable Portfolio Standard (RPS) and any future RPS. Having a 15 MW cap is also in line with the presumption under the Energy Policy Act of 2005 that small power producers with a net capacity under 20 MW do not have nondiscriminatory access to the Midwest Independent Transmission System Operator (MISO) markets.⁸ Artificially limiting the cap to 5 MW based on presumed “practical” access to the MISO markets⁹ would flip the presumption against nondiscriminatory access on its head.

D. Issue Four – Should utilities recover the costs associated with ARTs through ordinary rates or through voluntary Green Pricing rates?

CW and RENEW support a modified version of Alternative Three on this issue. ART costs associated with all purchases should be able to be recovered through Green Pricing rates, if the utility offers a Green Pricing program and the customer selling the electricity participates in the Green Pricing program. The utility should not use these purchases for RPS compliance. In all other circumstances, ART costs should be recovered from all customers through ordinary rates and may be used by the utility for RPS compliance.

E. Issue Five – Should the Commission limit the total program size for ARTs offered by utilities, and if so, on what basis should limits be established?

This issue is as important as Issue Three with respect to the ability to create a thriving ART program. Setting a program cap that is too low will result in missed opportunities to invest in local resources that will provide generation diversity that is designed to offset the risks associated with carbon dioxide emissions. Thus, CW and RENEW support a variation on Alternative Three whereby each utility has a cap on the total installed capacity (in kilowatts or

⁸ See 18 C.F.R. § 292.309(d).

⁹ See, e.g., Wisconsin Utilities Association Comments at 5 (February 17, 2009) (PSC Ref. # 108081).

megawatts) that it has under ART contracts, but the total installed capacity cap would be based on a percentage of each utility's total kilowatt hours sold. The percentage would be the same for all utilities across the board. The concept of this cap is similar to the concept employed to create the table contained on page 27 of the Memo. However, CW and RENEW believe that the program caps for each utility should be greater than the caps identified in the table, specifically 3% of each utility's kilowatt hours sold. Proportionally, this cap would be similar to the cap recently enacted into law by the Vermont legislature as part of its new feed-in tariff program.¹⁰ Below is a revised version of the table on page 27 of the Memo that would show the impact of the 3% cap on each of the five major investor-owned utilities:

Proposed Program Sizes by Technology

Utility	Program 3% All kWh	Solar PV CF = 0.125 kW	Biogas Biomass CHP CF = 0.8 kW	Wind CF = 0.2 kW
MG&E	100,500,630	7,641	11,503	6,573
NSP	186,878,550	14,208	21,389	12,222
WEPCO	778,639,680	59,196	89,117	50,924
WP&L	325,314,270	24,732	37,233	21,276
WPSC	324,366,720	24,660	37,125	21,214

Attached as an addendum to these comments is a chart detailing the rate impacts for a fully-subscribed ART program with the assumptions proposed by CW and RENEW.

¹⁰ See Vermont Energy Act of 2009, 2009 Act 45 (enacted on May 12, 2009, setting a feed-in tariff program cap of 50 MW), available at <http://www.leg.state.vt.us/docs/2010/Acts/ACT045.pdf>. Vermont has a population of little more than 600,000. By contrast, Wisconsin has a population of over 5.5 million. A proportional cap for Wisconsin would be 458 MW, similar to that achieved through a cap of 3% of each utility's kilowatt hours sold.

F. Issue Six – What are the next steps the Commission should take on ART policy?

With respect to the next steps the Commission should take on ART policy, CW and RENEW favor Alternative Two. The Commission should direct staff to develop detailed ART tariff sheets based on the Commission’s decisions on Issues One through Five and seek public comment before bringing a final tariff proposal back to the Commission for approval. CW and RENEW recommend that the Commission set a near-term deadline for the tariff proposal and impose a 15-day comment period in order to guard against unnecessary delay in the implementation of these tariffs.

Should any rate impact analyses be conducted as part of this process, such analyses should consider:

- different paces of renewable adoption over five- and ten-year periods;
- projected normal increases in utility costs and rates over five- and ten-year projections based on historic trends; and
- projections of the values of carbon and other environmental credits included in the ARTs over five- and ten-year periods.

Other questions that should be answered for final implementation of the tariffs include:

- What is the time limit for a project to begin generating to avoid losing its place in an ART queue?
- How will upgrades and additions to the capacities of systems be handled? What happens if an upgrade puts a project into another category?
- Given the probability that larger projects will be broken into smaller units to qualify for ARTs, what policies will address qualifications for each category?
- Given that inflation would automatically devalue the ART price over time, should a modest allowance for inflation be a standard feature for ARTs? If so, what would be the process? Should a predetermined standard be used or one that is periodically reviewed and potentially revised?

- How will utility costs of administering ARTs be determined? Will a ceiling on utility administrative costs be allowed in proportion to the number of projects?
- Will the commission characterize utility administrative costs that qualify as legitimately ART-related?
- How will sales of renewable attributes be tracked and applied to ART cost-recovery?
- Should ART costs be equalized over time across the state's utilities like the State of Michigan's proposed ART legislation?¹¹

Answers to these questions will help pave the way for a smooth transition to the implementation of the new tariffs.

III. CONCLUSION.

CW and RENEW appreciate the Commission's consideration of these comments.

Dated this 15th day of June, 2009.

Respectfully submitted,

CULLEN WESTON PINES & BACH LLP

/s/ Kira E. Loehr

By: _____

Curt F. Pawlisch

Kira E. Loehr

Attorneys for Clean Wisconsin and RENEW Wisconsin

122 West Washington Avenue, Suite 900

Madison, WI 53703

(608) 251-0101 phone

(608) 251-2883 fax

E-mail: pawlisch@cwpb.com

loehr@cwpb.com

¹¹ See Michigan House Bill 5218, available at <http://www.legislature.mi.gov/%28S%28321ira45x3oms3555uplhliu%29%29/mileg.aspx?page=getObject&objectName=2007-HB-5218>.

ATTACHMENT A

Biomass Stoker Boiler Power Generation System Capital Cost Estimates

<i>Installed Capital Costs</i>	Tons/Day (as received)		
	100	600	900
Biomass prep-yard*	\$2,639,660	\$5,430,000	\$7,110,000
Stoker boiler	\$1,991,000	\$18,000,000	\$23,250,000
CHP—Back-Pressure (BP) Steam Turbine			
BP steam turbine capacity (MW)	0.5	5.6	8.4
BP steam turbine cost	\$425,000	\$2,500,000	\$3,250,000
Total capital cost—CHP/back-pressure turbine	\$4,630,660	\$25,930,000	\$33,610,000
Cost \$/kW—CHP/back-pressure turbine	\$9,260	\$4,630	\$4,000
Power Only—Condensing Steam Turbine			
Condensing steam turbine capacity (MW)	N/A	15.5	23.3
Condensing steam turbine cost	N/A	\$5,425,000	\$7,575,000
Total capital cost—condensing turbine	N/A	\$28,855,000	\$37,935,000
Cost \$/kW—condensing turbine	N/A	\$1,860	\$1,630

*Prep-Yard costs are estimated based on the capital cost curve developed in section 4.1.5

Reference: U.S. ENVIRONMENTAL PROTECTION AGENCY COMBINED HEAT AND POWER PARTNERSHIP, BIOMASS COMBINED HEAT AND POWER CATALOG OF TECHNOLOGIES at 83 (September 2007).

Biomass Stoker Boiler Power Systems Non-Fuel O&M Cost Estimates

O&M Cost Components	Tons/Day (as received)		
	100	600	900
Prep-yard O&M	\$400,000	\$320,000	\$320,000
Boiler section O&M	\$160,000	\$1,095,000	\$1,110,000
Steam turbine O&M	\$15,000	\$177,000	\$265,000
Total O&M	\$575,000	\$1,592,000	\$1,695,000
Non-fuel O&M (\$/kWh)/(back-pressure turbine)	\$0.146	\$0.036	\$0.026
Non-fuel O&M (\$/kWh) (condensing turbine)	N/A	\$0.013	\$0.009

Reference: U.S. ENVIRONMENTAL PROTECTION AGENCY COMBINED HEAT AND POWER PARTNERSHIP, BIOMASS COMBINED HEAT AND POWER CATALOG OF TECHNOLOGIES at 83 (September 2007).

ATTACHMENT B

Rate Impacts for a Fully-Subscribed ART Program with Proposed Program Sizes and ART Incentives
 (assuming the following subscription proportions on a kWh basis: solar PV CAT1 25%, CAT2 50%, CAT3 25%;
 wind CAT2 15%, CAT3 10%, CAT4 75%; biogas/biomass CHP CAT2 15%, CAT3 60%, CAT4 25%)

Utility	Sector	Sales MWh	Average Retail Price cents/kWh	Parallel Generation Rates in Effect \$/kWh	Cost of Fully-Subscribed Program Using Parallel Generation Rates \$	Cost of Fully-Subscribed Program Using ART \$	Difference in Program Costs (ART - Parallel Generation) * \$	Additional Cost per kWh \$/kWh	Annual Cost Increase for a Typical Wisconsin Household (10,000 kWh/yr) \$	Annual Cost Increase for a Typical Wisconsin Household (10,000 kWh/yr) %
MG&E	Res	833,549	13.58							
MG&E	Com	2,236,505	9.00							
MG&E	Ind	279,967	6.25							
MG&E	All	3,350,021	9.91	0.0498	\$ 5,004,503	\$ 12,747,392	\$ 7,742,889	\$ 0.0023	\$ 23	1.70%
NSP	Res	1,902,776	9.36							
NSP	Com	2,764,494	7.34							
NSP	Ind	1,562,015	5.33							
NSP	All	6,229,285	7.45	0.0649	\$ 12,127,381	\$ 23,703,475	\$ 11,576,094	\$ 0.0019	\$ 19	1.99%
WEPCO	Res	8,246,285	10.88							
WEPCO	Com	9,025,538	9.15							
WEPCO	Ind	8,682,833	6.61							
WEPCO	All	25,954,656	8.85	0.0532	\$ 41,420,088	\$ 98,761,820	\$ 57,341,732	\$ 0.0022	\$ 22	2.03%
WP&L	Res	3,539,611	11.18							
WP&L	Com	2,370,268	9.54							
WP&L	Ind	4,933,930	6.68							
WP&L	All	10,843,809	8.77	0.0552	\$ 17,955,812	\$ 41,262,512	\$ 23,306,701	\$ 0.0021	\$ 21	1.92%
WPSC	Res	2,826,796	11.85							
WPSC	Com	4,013,504	8.48							
WPSC	Ind	3,971,924	5.31							
WPSC	All	10,812,224	8.20	0.0636	\$ 20,627,959	\$ 41,142,326	\$ 20,514,367	\$ 0.0019	\$ 19	1.60%

*Using a different benchmark for avoided cost other than the current parallel generation rates, such as the cost of generation a utility is likely to require next in a carbon-constrained world (e.g., a 50 MW wind farm), would render any “premium” for the ART program even lower.