

# **PUBLIC SERVICE COMMISSION OF WISCONSIN**

## **Memorandum**

June 22, 2011

### **FOR COMMISSION AGENDA**

TO: The Commission

FROM: Robert Norcross, Administrator  
Deborah Erwin, Renewable Energy Specialist  
Andrew Kell, Program and Policy Analyst  
Gas and Energy Division

RE: Electric Provider Renewable Portfolio Standard Compliance 5-GF-206  
for CY 2010

Suggested Minute: The Commission (accepted/did not accept) the reports of Wisconsin electric providers and aggregators as to their compliance with the requirements of Wis. Stat. § 196.378(2)(a)2. The Commission directed the Gas and Energy Division to inform each electric provider of its compliance with the statute.

### **2010 RENEWABLE PORTFOLIO STANDARD COMPLIANCE REPORT**

#### **Compliance Summary**

##### **Background**

Wisconsin Stat. § 196.378, known as the Renewable Portfolio Standard (RPS), requires Wisconsin retail electric providers to provide a minimum percentage of the electricity they supply at retail from renewable resources, and annually report renewable energy sales and activity to the Commission. Under Wis. Stat. § 196.378(2)(c), the Commission must inform each provider whether it is complying with this minimum percentage. An electric provider's RPS requirement for each year is calculated by multiplying the applicable renewable percentage by the average of the provider's retail sales from the previous three years. For each calendar year (CY) from 2006 through 2009, electric providers were required to meet a baseline percentage equal to the average of the electric provider's renewable energy percentage for the

years 2001 through 2003. All Wisconsin electric providers met this baseline percentage through CY 2009.

Electric providers achieved compliance with their baseline RPS requirements by selling electricity to their retail customers from renewable resources and by using Renewable Resource Credits (RRC) created in previous years. RRCs are created when an electric provider sells electricity from renewable resources in excess of that year's RPS requirement, and they can be sold to other electric providers or banked for use in future years. Only certain renewable facilities are eligible to create RRCs: a facility placed in service on or after January 1, 2004; upgrades to an older facility that have occurred on or after January 1, 2004 and that increase the existing facility's output; and a facility owned by a retail customer of the electric provider regardless of in-service date. See Wis. Stat. § 196.378(3)(a)2.

Electric providers use the Midwest Renewable Energy Tracking System (M-RETS), an electronic renewable energy tracking database, to track their renewable energy and to demonstrate RPS compliance. One megawatt hour (MWh) of renewable energy is tracked in M-RETS as one M-RETS Certificate. Each M-RETS Certificate indicates whether the renewable energy the Certificate represents is eligible for the RPS, and whether it is eligible to create a tradable, bankable RRC under Wisconsin law. M-RETS Certificates that are eligible to create tradable, bankable RRCs under Wisconsin law can be electronically "converted" into an RRC in M-RETS.<sup>1</sup> Wisconsin electric providers demonstrate compliance with the RPS by retiring M-RETS Certificates and RRCs representing the amount of eligible renewable energy required. Electric providers also use M-RETS to bank excess RRCs for use in future years, as allowed by statute.

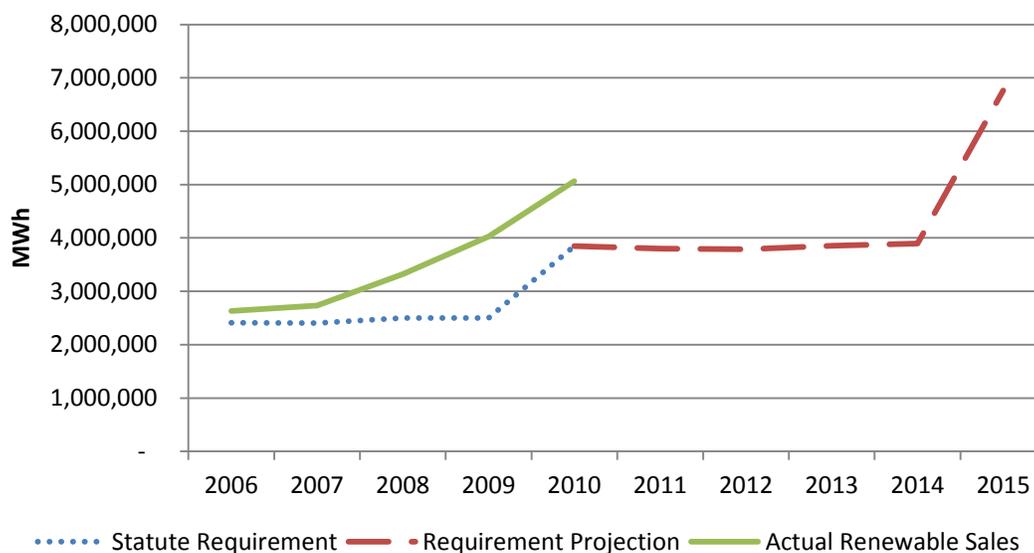
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<sup>1</sup> An M-RETS Certificate that is eligible for the RPS but is not eligible to create an RRC represents generation from a facility placed in service before January 1, 2004. Generation from these facilities cannot be banked for use in future years.

## RPS Compliance in 2010

Beginning in CY 2010, electric providers were required to achieve a renewable energy percentage at 2 percent above their respective baselines. Commission staff has reviewed data provided by electric providers and M-RETS, and has confirmed that all Wisconsin electric providers have complied with their CY 2010 RPS requirements. Excluding sales attributable to green pricing programs, which are discussed later, over 5 million MWh, or 7.3 percent of the electricity sold at retail in Wisconsin in CY 2010, came from renewable resources. Actual RPS renewable sales have increased 92.5 percent from CY 2006 to CY 2010, represented in Figure 1 below. This rate of progress will likely flatten over the next few years as electric providers maintain sufficient renewable sales and RRCs to continue to satisfy their baseline plus 2 percent requirements, which will apply through CY 2014.

**Figure 1: WI Statewide RPS Renewable Sales Required vs. Actual (MWh)<sup>2</sup>**



<sup>2</sup> The statewide perspective is the sum of all Wisconsin electric provider RPS renewable sales, excluding green pricing sales. Statute requirement is the sum of all Wisconsin electric provider renewable sales requirements, which are based on individual percentage requirements multiplied by the respective previous three-year average of total retail sales. The requirement projection assumes 1.0 percent statewide annual retail sales growth rate from 2011-2015; this growth rate assumption is also used for individual provider requirements in figures below. The slight decrease in renewable sales requirements from 2010 through 2012 reflects a loss of load that is likely due at least in part to the impact of the recent economic recession on previous years' sales.

Under the RPS statute, for CY 2015 and thereafter, electric providers must achieve a renewable energy percentage of 6 percent above their baselines. Most electric providers have now positioned their level of renewable sales somewhere between CY 2010 and CY 2015 percentages, and will likely bank enough RRCs to be in compliance in CY 2015 without additional renewable resource procurement. However, in order to sustain the 6 percent above baseline renewable energy requirement beyond CY 2015, most providers will need to add renewable resources at some point. The exceptions are likely to be those electric providers whose 2010 renewable sales already meet or exceed their respective 2015 RPS requirement levels: WPPI Energy, an aggregator for its municipal members; Oconto Electric Cooperative; Princeton Municipal Water and Electric Utility; Wonewoc Electric and Water Utility; and Washington Island Cooperative. Table 1 below contains the “top ten” electric providers that have achieved the highest proportion of their CY 2015 requirement in CY 2010.

**Table 1: 10 Most Advanced Electric Providers in Attaining 2015 RPS Percentage<sup>3</sup>**

<b>Electric Provider</b>	<b>2010 RPS Sales as Percent of 2010 Total Retail</b>	<b>2015 RPS Percent Requirement</b>	<b>% of 2015 RPS Requirement Achieved in 2010</b>
WPPI Energy	14.88	10.24	145%
Oconto Electric Coop	12.28	10.71	115%
Princeton Mun Wtr & Elec Util	8.55	8.21	104%
Wonewoc Electric & Water Util	8.83	8.69	102%
Washington Island Cooperative	9.41	9.35	101%
Mazomanie Electric Utility	8.20	8.45	97%
Hazel Green Municipal Utility	8.48	8.87	96%
Central Wisconsin Elec Coop	8.53	8.94	95%
North Central Power Co Inc	37.15	39.11	95%
Sheboygan Falls Utilities	8.24	8.77	94%

<sup>3</sup> 2010 RPS renewable sales are divided by 2010 total retail sales instead of the previous three-year sales average used for compliance for the purposes of this table, as the 2007-2009 total sales average is skewed by the recession and will not likely represent sales levels in 2015. A complete table with all electric providers can be found in Appendix A.

## **Voluntary Green Pricing Programs**

Electric providers may create retail renewable sales programs that allow customers the option of paying a premium for renewable energy. These are often referred to as green pricing programs. Electric providers present voluntary green pricing programs as an opportunity for customers to go above and beyond the amount of renewable energy that the electric provider would otherwise provide. For CY 2010 RPS compliance reporting, Commission staff also asked electric providers to report 2010 renewable sales that resulted from green pricing programs. Green pricing sales were reported by all electric providers that run these programs, and confirmed by Commission staff as being separate from electric provider RPS activity. Renewable sales under voluntary green pricing programs are not included in Figure 1 and Table 1 above related to compliance, as electric providers have indicated that these sales are not being used to satisfy RPS requirements. Further information regarding green pricing sales can be found in the Voluntary Green Pricing Programs section of this report below.

## **Appendices**

Besides compliance activity, this report contains useful information on renewable resources being used to generate electricity for Wisconsin retail customers. It provides information regarding sales of all electric energy from renewable resources sold to Wisconsin retail customers. Statistics in Appendices B through D include both RPS and green pricing sales in order to paint a full picture of retail sales from renewable resources sold to Wisconsin retail customers. Also included is information distinguishing sales by renewable generators located in Wisconsin from renewable generation occurring in other states. Because both the RPS and green pricing programs are based on retail sales of electricity, these statistics do not account for

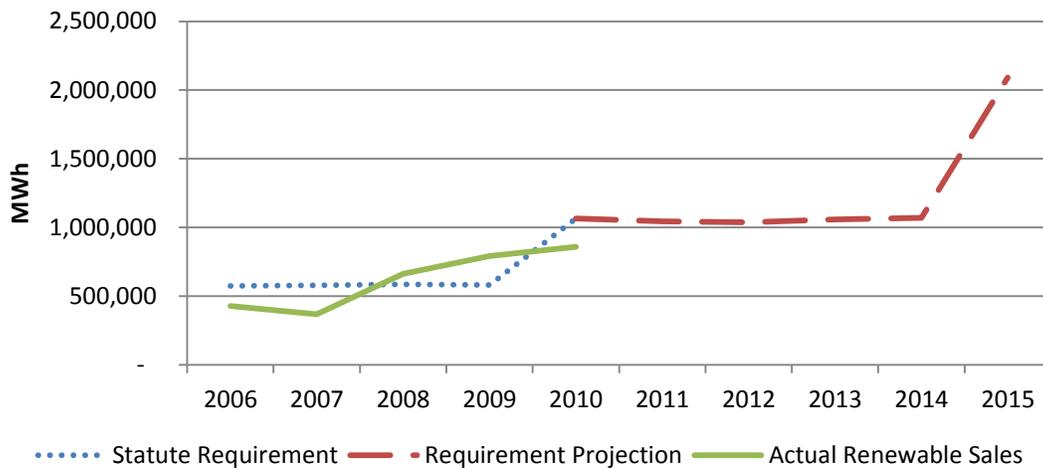
distributed renewable generation used on site that is not sold by an electric provider to a Wisconsin retail customer.

## 2010 RPS Compliance and Outlook by Largest Electric Providers

### Wisconsin Electric Power Company

Because it was able to retire RRCs from previous years to achieve compliance, Wisconsin Electric Power Company (WEPCO) was able to meet its 2010 renewable sales requirements. Figure 2, below, reflects WEPCO’s historical RPS renewable sales requirements versus actual sales achievement for CY 2006 through CY 2010, along with estimated compliance requirements through CY 2015.

**Figure 2: WEPCO RPS Renewable Sales Required vs. Actual (MWh)**



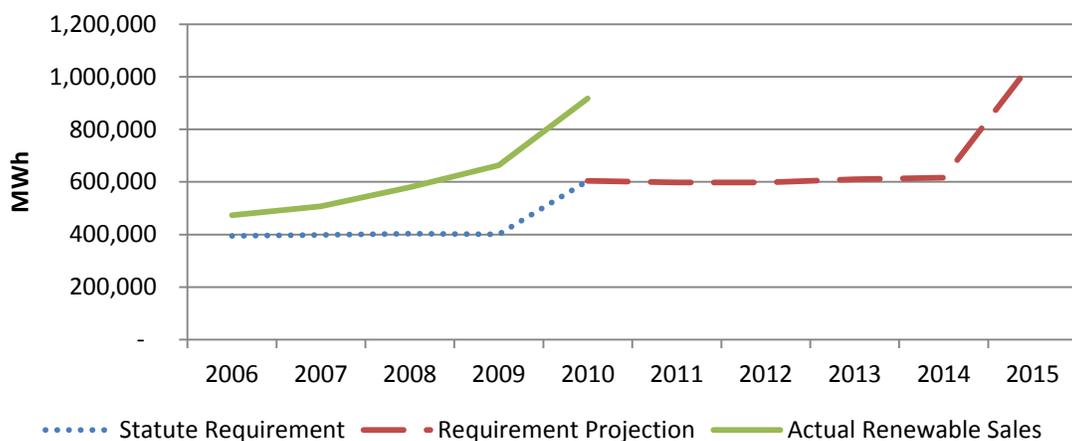
In its CY 2010 compliance filing, WEPCO described an increase in renewable sales over the last few years that came from customer distributed generation buy-back programs, purchase power agreements (PPA) from independent power producers (IPP), and construction of the 145 megawatt (MW) Blue Sky–Green Field wind project in 2008. WEPCO plans on finishing the construction of the 162 MW Glacier Hills Wind Park in 2011 in order to reach its requirements through CY 2014. To meet its 8.27 percent RPS percent requirement in CY 2015,

WEPCO proposed the 50 MW Rothschild biomass facility recently approved by the Commission, outlined initial plans to propose 5 MW and 7.5 MW solar facilities, and indicated it will procure PPAs or additional owned renewable facilities in the future.

### Wisconsin Public Service Corporation

Wisconsin Public Service Corporation (WPSC) has exceeded its compliance requirements every year by purchasing power from large wind projects, customer-owned facilities, and constructing the 99 MW Crane Creek wind project in Iowa. These assets will be enough to keep WPSC well above its requirements through CY 2014, as shown in Figure 3.

**Figure 3: WPSC RPS Renewable Sales Required vs. Actual (MWh)**

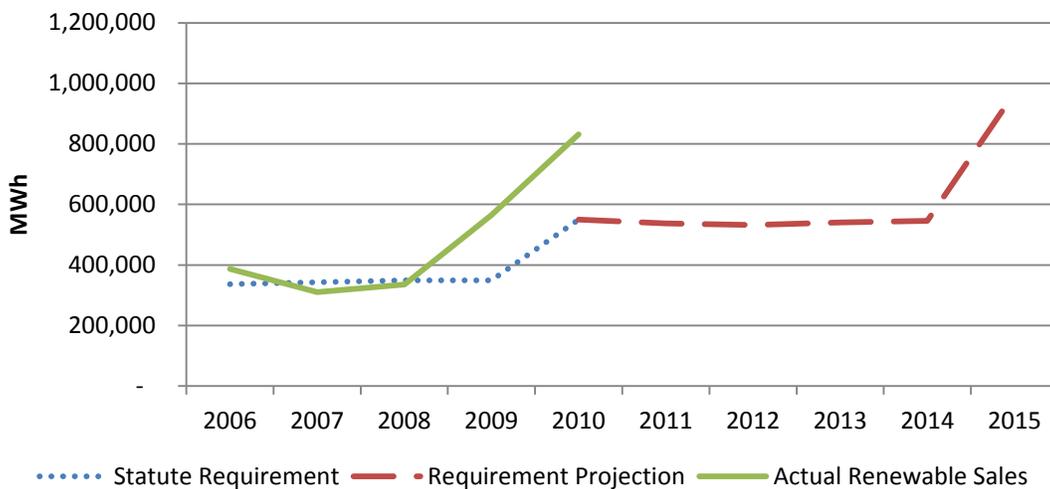


WPSC plans on expanding its base of purchases from customer-owned generation through renewable tariffs, including biogas, in order to meet its CY 2015 requirement of 9.74 percent of sales from renewable resources. In its 2010 RPS report, WPSC commented that if RPS standards scheduled to ramp up in 2015 were delayed, it would explore the possibility of marketing excess RRCs that would be available to WPSC in order to offset the ratepayer investment in renewable resources it has already made under the current law.

## Wisconsin Power and Light

For the first three compliance years, Wisconsin Power and Light (WP&L) achieved minimum levels of renewable sales, but it has escalated these sales significantly in the last two years with the construction of the 67.65 MW Cedar Ridge wind project, as well as through procurement of other wind PPAs and customer-owned generation. Figure 4 shows how this recent procurement activity has positioned WP&L to meet its requirements through CY 2014.

**Figure 4: WP&L RPS Renewable Sales Required vs. Actual (MWh)**

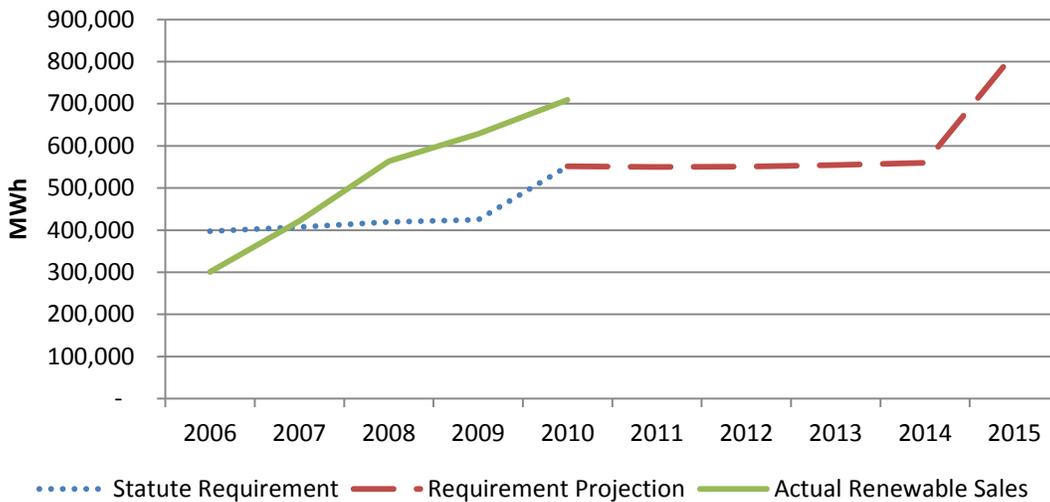


In early 2011, WP&L's 200 MW Bent Tree wind project facility came into commercial operation in Minnesota. In its RPS compliance filing, WP&L indicated that generation from this large wind project should allow it to sustain a renewable sales level above its CY 2015 RPS requirement of 9.28 percent.

## Northern States Power Company–Wisconsin

Northern States Power Company–Wisconsin's (NSPW) renewable sales levels have exceeded requirements from CY 2007 through 2010, and if held constant will stay above current requirements through CY 2014. Figure 5 shows the historical achievement of NSPW renewable sales against RPS requirements.

**Figure 5: NSPW RPS Renewable Sales Required vs. Actual (MWh)<sup>4</sup>**



In a joint effort with Northern States Power Company–Minnesota (NSPM), and on behalf of Wisconsin and Minnesota wholesale customers, NSPW has procured predominantly wind and biomass resources from owned facilities and IPPs. NSPW also purchases energy from small customer-owned solar facilities, and aggregates their energy for the purpose of creating RRCs. In order to reach a CY 2015 Wisconsin RPS percent requirement of 12.89 percent, and to reach Minnesota’s RPS requirements, NSPW and NSPM are working to procure an additional 250 MW of wind generation and are assessing the need for further owned facilities and agreements with IPPs.

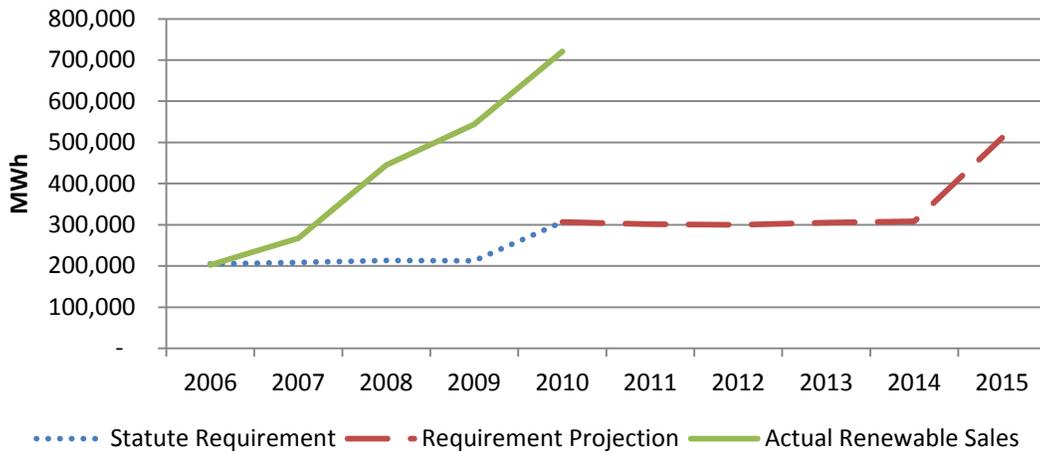
### **WPPI Energy**

WPPI Energy (WPPI) has increased its RPS renewable sales by over 250 percent in the last five years. In doing so, the electric provider exceeded its CY 2015 RPS requirement in

<sup>4</sup> The Commission approved an adjustment to NSPW’s baseline RPS percentage beginning in CY 2008 (from 6.85 percent to 6.89 percent) which primarily accounts for the increase in requirements from CY 2007 to CY 2008 in Figure 5. Additionally, sales from certain facilities previously included as renewable sales in NSPW’s filings in 2006 and 2007 are not included in this figure. The sales not included in Figure 5 relate to facilities which NSPW or NSPM contracted with but where ownership of the renewable attributes associated with energy was disputed by the parties and subject to a proceeding before the Minnesota Public Utilities Commission (MN PUC). The renewable attributes in dispute have been described as “silent Renewable Energy Credits,” referring to the contracts being “silent” regarding renewable attribute ownership. NSPW did not include sales associated with those contracts in dispute in its RPS filings in 2008, 2009 or 2010. See MN PUC docket 08-440.

CY 2009, and continued to ramp up its renewable sales in CY 2010. Figure 6 shows that WPPI is well in excess of its CY 2015 requirement.

**Figure 6: WPPI RPS Renewable Sales Required vs. Actual (MWh)**

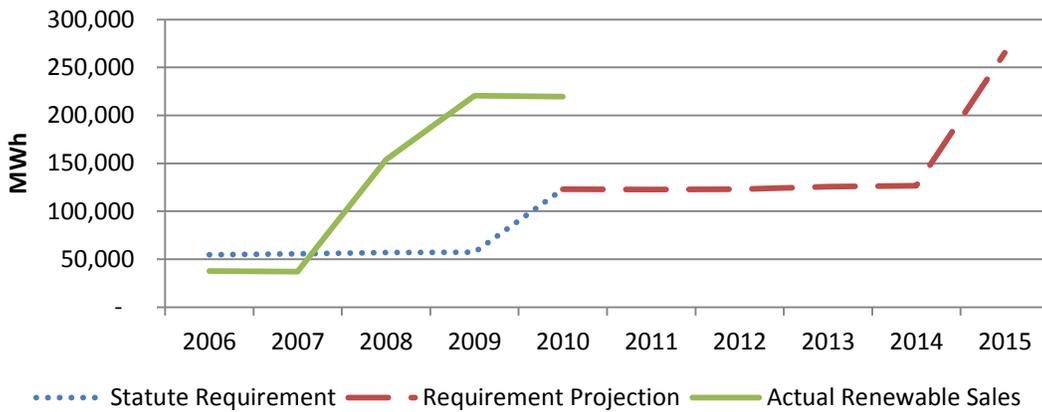


WPPI’s increase in renewable sales over the last five years is attributable to procurement of wind and small biomass resources. WPPI notes in its 2010 RPS report that because of its early achievement of future renewable requirements, any delay to these future requirements will result in excess investment costs for its members’ ratepayers when compared to other electric providers that have not been proactive in their RPS renewable resources procurement planning.

**Madison Gas and Electric Company**

After needing to use banked RRCs to meet its initial RPS requirements in CY 2006 and 2007, Madison Gas and Electric Company (MG&E) has increased its renewable sales significantly in the last three years. Figure 7 presents this trend.

**Figure 7: MG&E RPS Renewable Sales Required vs. Actual (MWh)**

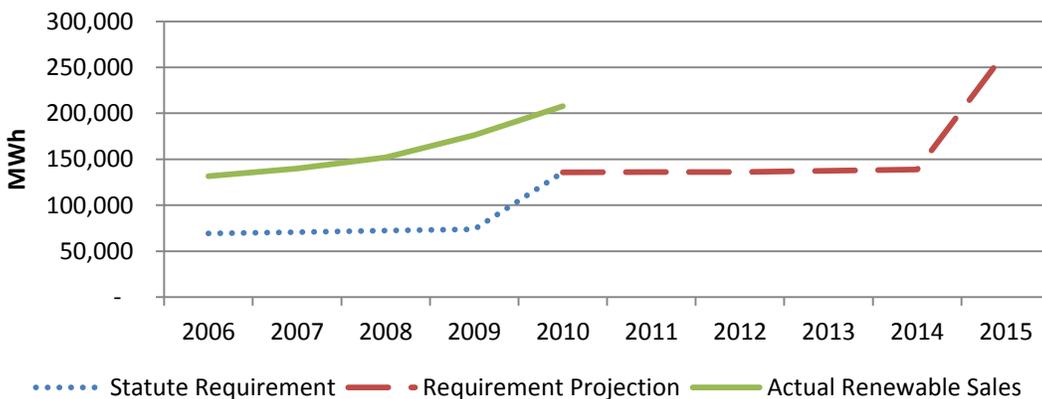


MG&E plans on using its present and future banked RRCs to meet its CY 2015 requirement of 7.73 percent from renewable sales, and procuring PPAs when necessary.

### **Dairyland Power Cooperative**

Dairyland Power Cooperative (DPC), as a wholesale provider to its distribution cooperative and municipal utility members, has been above its RPS renewable sales requirements since CY 2006 by building upon its base of hydroelectric generation with biomass and wind resources. Figure 8 shows this achievement above RPS renewable sales requirements.

**Figure 8: DPC RPS Renewable Sales Required vs. Actual (MWh)<sup>5</sup>**



<sup>5</sup> In its CY 2006 and 2007 RPS reports, DPC reported renewable sales across its interstate operating system, while in its CY 2008 RPS report and thereafter DPC reported renewable sales relating only to customers in the state of Wisconsin. Renewable sales in Figure 8 have been adjusted for CY 2006 and 2007 to reflect Wisconsin-only sales.

In order to meet CY 2015 RPS requirements, DPC has procured a renewable sales contract from the 40 MW DTE Stoneman Station, which was converted from coal to biomass as a fuel source and began commercial operation in late 2010.

### **Voluntary Green Pricing Programs**

Wisconsin electric providers have the option of creating and managing their own green pricing programs based on their assessment of customer demand and willingness to pay for electricity from renewable resources. After opting into the program, participating customers pay a premium for each kilowatt hour that represents the electric provider's additional cost of procuring renewable energy when compared to the rest of the electric provider's electric supply. Electric providers that create these programs use a mix of renewable resources to meet customer demand, but generation from wind resources usually represents the largest volume of sales. Often customers can choose to purchase either a pre-determined amount, or block, of renewable energy each month, which gives the customer cost certainty, or purchase an amount of energy equivalent to a percent of monthly consumption, up to 100 percent. For investor-owned and municipal utilities, these programs are implemented through tariffs approved by the Commission.

In CY 2010, those electric providers with green pricing programs<sup>6</sup> reported an aggregate total of 378,911 MWh of sales of electricity from renewable resources for use in these programs. Electric providers have indicated, and Commission staff has verified, that these sales are not being used to meet electric provider RPS requirements. RPS-eligible renewable sales and green pricing sales combined constitute 7.92 percent of retail electricity from renewable resources sold to Wisconsin customers in CY 2010. Considering that the current statewide sales volume from

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<sup>6</sup> Ten electric providers conducting RPS compliance activities on their own or on another electric provider's behalf reported green pricing sales, including electric providers, such as WPPI and DPC, representing multiple retail electric providers that each individually manage green pricing programs.

green pricing programs is not an insignificant amount, and that new programs and demand may increase in the future, it is appropriate to account for these sales when discussing total retail renewable sales for the state of Wisconsin. This will also aid in evaluating electric providers' future renewable energy plans and impacts of the RPS. The statistics and figures presented in the section below come from the perspective of total retail sales from renewable resources, which includes both RPS-eligible and green pricing sales.

### **Total Renewable Resources – RPS and Green Pricing**

In CY 2010, 56.0 percent of the electricity sold by electric providers derived from renewable resources came from generators located in the state of Wisconsin. This is a drop from the 62.6 percent experienced in CY 2009. Overall for CY 2010, wind resources from outside Wisconsin made up the largest proportion of total renewable sales, followed by Wisconsin hydro and Wisconsin wind.

As with previous years, without regard for the location of the resource, in CY 2010 wind resources provided the largest proportion of total renewable sales to Wisconsin retail customers, followed by hydro and various biomass resources, half of which came from landfill gas. Due to factors such as expense, scale, and the level of solar insolation in the Midwest, solar resources made up less than 0.1 percent of total renewable sales to Wisconsin retail customers in CY 2010. Statewide and individual electric provider statistics can be found in Appendices C and D, and figures of these statistics are located in Appendix E.

Attachments

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**Appendix A: Electric Providers in Order of Attaining 2015 RPS Percentage\***

Electric Provider	2010 RPS Sales as Percent of 2010 Total Retail	2015 RPS Percent Requirement	% of 2015 RPS Requirement Achieved in 2010
<b>WPPI Energy</b>	<b>14.88</b>	<b>10.24</b>	<b>145%</b>
Oconto Electric Coop	12.28	10.71	115%
Princeton Mun Wtr & Elec Util	8.55	8.21	104%
Wonewoc Electric & Water Util	8.83	8.69	102%
Washington Island Cooperative	9.41	9.35	101%
Mazomanie Electric Utility	8.20	8.45	97%
Hazel Green Municipal Utility	8.48	8.87	96%
Central Wisconsin Elec Coop	8.53	8.94	95%
North Central Power Co Inc	37.15	39.11	95%
Sheboygan Falls Utilities	8.24	8.77	94%
Wisconsin Dells Mun Elec Util	8.35	8.89	94%
Pioneer Power & Light Co	8.17	8.71	94%
Adams-Columbia Electric Coop	8.36	8.92	94%
Northwestern WI Elec Co	17.23	18.48	93%
Shullsburg Electric Utility	8.20	8.82	93%
Benton Mun Elec & Water Util	8.23	8.86	93%
Westfield Milling & Elec Co	8.17	8.81	93%
Belmont Mun Water & Elect Util	8.12	8.76	93%
Sauk City Mun Wtr & Light Util	8.17	8.82	93%
Trempealeau Mun Elc & Wtr Util	11.65	12.78	91%
Pardeeville (Village of) Elec Util	7.69	8.44	91%
<b>Wisconsin Public Service Corp</b>	<b>8.73</b>	<b>9.74</b>	<b>90%</b>
Stratford Mun Wtr & Elec Utility	8.33	9.31	89%
<b>Northern States Power Co WI</b>	<b>11.49</b>	<b>12.89</b>	<b>89%</b>
Black Earth Electric Utility	8.18	9.23	89%
Rock Energy Coop	7.91	8.93	89%
Cornell Mun Water & Elec Util	11.20	12.65	89%
<b>Wisconsin Power &amp; Light</b>	<b>8.21</b>	<b>9.28</b>	<b>88%</b>
Gresham Mun Light & Pwr Util	7.42	8.43	88%
Marshfield Elec & Water Dept	7.80	8.91	88%
Great Lakes Utilities	6.97	8.07	86%
Cadott Light & Water Mun Util	10.97	12.72	86%
Elkhorn Light & Water	8.13	9.43	86%
Rice Lake Mun Wtr & Elec Util	10.69	12.53	85%
<b>Madison Gas &amp; Electric Co</b>	<b>6.59</b>	<b>7.73</b>	<b>85%</b>
Bloomer Electric Utility	10.62	12.47	85%
Medford Electric Utility	10.56	12.41	85%
Spooner Municipal Utilities	10.54	12.55	84%
Barron Light & Water Utility	10.78	12.85	84%
Bangor Municipal Utility	10.23	12.62	81%
<b>Dairyland Power Cooperative</b>	<b>6.77</b>	<b>8.44</b>	<b>80%</b>
Consolidated Water Power Co	16.35	22.47	73%
Manitowoc Public Utilities	6.58	9.19	72%
East Central Energy	3.32	6.64	50%
<b>Wisconsin Electric Power Co</b>	<b>3.50</b>	<b>8.27</b>	<b>42%</b>
Dahlberg Light & Power Co	1.74	7.37	24%
Superior Wtr Light & Pwr Co	1.98	8.53	23%
Centuria Municipal Electric Util	0.00	18.37	0%
<b>WISCONSIN TOTAL</b>	<b>7.37</b>	<b>9.55</b>	<b>77%</b>

\* Largest electric providers described in the narrative of this memorandum are in bold. "WISCONSIN TOTAL" represents aggregated sales of all Wisconsin electric providers.

## Appendix B: 2010 Total Retail & Renewable Sales by Wisconsin Electric Provider

### COLUMN KEY FOR TABLE BELOW

Columns 7-9, 13, 14, and 16 highlight CY 2010 RPS and Green Pricing renewable sales and percentages. Other columns show compliance activity and information used in calculations. See below for description of each column.

1. Wisconsin electric provider or aggregator that must meet RPS requirements. These entities represent all electric providers of retail electric services in the state of Wisconsin (investor-owned, municipal, and cooperative).
2. CY 2010 total retail sales per electric provider (from all generators) as reported to the Commission.
3. CY 2007-2009 average annual total retail sales, as reported to the Commission. Each year's RPS requirement % is applied to the average of the previous three years of retail sales.
4. 2007-2009 average total retail sales (Col. 3) multiplied by utility's 2010 RPS percent requirement (Col. 11).
5. Electric provider compliance retirements, as reported to PSCW and verified by Commission staff through M-RETS database.
6. Assessment of electric provider's compliance activity for CY 2010. If Col. 5 is greater or equal to Co. 4 then "YES" in compliance, otherwise "NO".
7. Electric sales to Wisconsin retail customers in 2010, which were generated by a renewable resource and eligible for RPS activity, as reported by electric provider. This column does not include green pricing sales; see Col. 13-15 for green pricing information.
8. Col. 7. divided by Col. 3 (if Col. 8 > Col. 11 the utility essentially banks excess credits, if Col. 8 < Col. 11 the utility must use other credits to comply in 2010).
9. Col. 7 divided by Col.2 (for informational purposes only; this percentage is not applicable to compliance).
10. Percentage required for years 2006-2009, equal to mean percentage renewables from years 2001-2003; per Wis. Stat. § 196.378(2)(a)2.
11. Percentage required for years 2010-2014, equal to baseline % +2%; per Wis. Stat. § 196.378(2)(a)2.
12. Percentage required for years 2015 and beyond; equal to baseline % +6%; per Wis. Stat. § 196.378(2)(a)2.
13. Electric sales to Wisconsin retail customers, which were generated by a renewable resource and part of utility's voluntary green pricing program, as reported to the Commission.
14. 2010 Total renewable sales that include RPS eligible and green pricing sales (Col. 7 plus Col. 13).
15. 2010 Green pricing sales as a percent of total 2010 RPS eligible and green pricing renewable sales (Col. 14 divided by Col. 13).
16. All renewable sales (Green Pricing and RPS Energy) divided by 2010 retail sales (Col. 14 divided by Col. 2).

\* Indicates Aggregator. Additionally, starting in 2009 Great Lakes Utilities now reports in aggregate on behalf of Clintonville Water & Electric, Kiel Municipal Electric, Shawano Municipal Utilities, and Wisconsin Rapids Water Works and Lighting Commission. Though these utilities all have separate RPS requirements, they are presented together in this table. Baseline, 2010, and 2015 RPS percent requirements shown for GLU are based on weighted average sales for all four utility individual requirements. This percent requirement will float from year to year as each utility's total sales change.

1	Total Retail Sales Information		CY 2010 Compliance Activity			2010 RPS Renewable Sales Information			Provider RPS Requirements			Green Pricing Sales (GPS) Information			RPS + GPS
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Electric Provider or Aggregator*	2010 Retail Sales (MWh)	2007-2009 Ave. Retail Sales (MWh)	2010 RPS Required (MWh)	2010 M-RETS Certificates Retired	In Compliance?	Actual 2010 RPS Energy (MWh)	Actual 2010 RPS Energy as % of Ave. Sales	2010 RPS Energy as % of 2010 Retail Sales	Baseline RPS (%)	2010 RPS (%)	2015 RPS (%)	2010 GPS Sales (MWh)	2010 GPS + RPS Sales (MWh)	GPS as % of Total Renewable Sales	Total Renewable Sales as % of 2010 Retail Sales
Adams-Columbia Electric Coop	458,245	479,387	23,586	23,586	YES	38,289	7.99	8.36	2.92	4.92	8.92	90	38,379	0.23	8.38
Bangor Municipal Utility	28,888	28,931	2,494	2,494	YES	2,956	10.22	10.23	6.62	8.62	12.62	-	2,956	N/A	10.23
Barron Light & Water Utility	80,589	81,515	7,218	7,218	YES	8,688	10.66	10.78	6.85	8.85	12.85	-	8,688	N/A	10.78
Belmont Mun Water & Elect Util	20,215	18,353	874	874	YES	1,641	8.94	8.12	2.76	4.76	8.76	-	1,641	N/A	8.12
Benton Mun Elec & Water Util	5,599	5,492	267	267	YES	461	8.39	8.23	2.86	4.86	8.86	-	461	N/A	8.23
Black Earth Electric Utility	16,873	16,643	870	870	YES	1,381	8.30	8.18	3.23	5.23	9.23	-	1,381	N/A	8.18
Bloomer Electric Utility	48,982	49,215	4,167	4,167	YES	5,201	10.57	10.62	6.47	8.47	12.47	-	5,201	N/A	10.62
Cadott Light & Water Mun Util	13,108	13,414	1,170	1,170	YES	1,438	10.72	10.97	6.72	8.72	12.72	-	1,438	N/A	10.97
Central Wisconsin Elec Coop	93,677	93,838	4,636	4,636	YES	7,991	8.52	8.53	2.94	4.94	8.94	-	7,991	N/A	8.53
Centuria Municipal Electric Util	5,398	5,416	779	779	YES	0	0.00	0.00	12.37	14.37	18.37	-	-	N/A	0.00
Consolidated Water Power Co	1,496,257	1,364,947	252,106	252,106	YES	244,597	17.92	16.35	16.47	18.47	22.47	-	244,597	N/A	16.35
Cornell Mun Water & Elec Util	12,673	12,836	1,111	1,111	YES	1,419	11.05	11.20	6.65	8.65	12.65	-	1,419	N/A	11.20
Dahlberg Light & Power Co	101,376	103,241	3,480	3,480	YES	1,768	1.71	1.74	1.37	3.37	7.37	-	1,768	N/A	1.74
<b>Dairyland Power Cooperative*</b>	3,068,542	3,057,437	135,750	135,750	YES	207,826	6.80	6.77	2.44	4.44	8.44	5,452	213,278	2.56	6.95
East Central Energy	48,498	49,771	1,314	1,314	YES	1,611	3.24	3.32	0.64	2.64	6.64	56	1,667	3.36	3.44
Elkhorn Light & Water	112,795	111,538	6,056	6,056	YES	9,170	8.22	8.13	3.43	5.43	9.43	-	9,170	N/A	8.13

1	Total Retail Sales Information		CY 2010 Compliance Activity			2010 RPS Renewable Sales Information			Provider RPS Requirements			Green Pricing Sales (GPS) Information			RPS + GPS
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Electric Provider or Aggregator*	2010 Retail Sales (MWh)	2007-2009 Ave. Retail Sales (MWh)	2010 RPS Required (MWh)	2010 M-RETS Certificates Retired	In Compliance?	Actual 2010 RPS Energy (MWh)	Actual 2010 RPS Energy as % of Ave. Sales	2010 RPS Energy as % of 2010 Retail Sales	Baseline RPS (%)	2010 RPS (%)	2015 RPS (%)	2010 GPS Sales (MWh)	2010 GPS + RPS Sales (MWh)	GPS as % of Total Renewable Sales	Total Renewable Sales as % of 2010 Retail Sales
Great Lakes Utilities*	735,470	696,994	28,366	28,366	YES	51,228	7.35	6.97	2.07	4.07	8.07	-	51,228	N/A	6.97
Gresham Mun Light & Pwr Util	23,106	20,991	930	930	YES	1,714	8.17	7.42	2.43	4.43	8.43	-	1,714	N/A	7.42
Hazel Green Municipal Utility	8,279	7,914	385	385	YES	702	8.87	8.48	2.87	4.87	8.87	-	702	N/A	8.48
<b>Madison Gas &amp; Electric Co</b>	3,331,795	3,294,333	122,879	122,879	YES	219,690	6.67	6.59	1.73	3.73	7.73	150,926	370,616	40.72	11.12
Manitowoc Public Utilities	503,401	533,377	27,682	27,682	YES	33,108	6.21	6.58	3.19	5.19	9.19	190	33,298	0.57	6.61
Marshfield Elec & Water Dept	361,117	375,680	18,446	18,446	YES	28,176	7.50	7.80	2.91	4.91	8.91	-	28,176	N/A	7.80
Mazomanie Electric Utility	26,657	28,461	1,267	1,267	YES	2,185	7.68	8.20	2.45	4.45	8.45	-	2,185	N/A	8.20
Medford Electric Utility	127,019	130,709	10,990	10,990	YES	13,418	10.27	10.56	6.41	8.41	12.41	-	13,418	N/A	10.56
North Central Power Co Inc	32,309	31,389	11,021	11,021	YES	12,004	38.24	37.15	33.11	35.11	39.11	-	12,004	N/A	37.15
<b>Northern States Power Co WI</b>	6,175,844	6,207,302	551,822	551,822	YES	709,478	11.43	11.49	6.89	8.89	12.89	5,943	715,421	0.83	11.58
Northwestern WI Elec Co	167,027	168,157	24,350	24,350	YES	28,784	17.12	17.23	12.48	14.48	18.48	-	28,784	N/A	17.23
Oconto Electric Coop	105,878	105,530	7,081	8,523	YES	13,002	12.32	12.28	4.71	6.71	10.71	-	13,002	N/A	12.28
Pardeeville (Village of) Elec Util	21,405	21,558	957	957	YES	1,647	7.64	7.69	2.44	4.44	8.44	-	1,647	N/A	7.69
Pioneer Power & Light Co	17,064	17,259	813	813	YES	1,394	8.08	8.17	2.71	4.71	8.71	-	1,394	N/A	8.17
Princeton Mun Wtr & Elec Util	10,613	11,130	469	469	YES	907	8.15	8.55	2.21	4.21	8.21	-	907	N/A	8.55
Rice Lake Mun Wtr & Elec Util	155,322	159,839	13,637	13,637	YES	16,604	10.39	10.69	6.53	8.53	12.53	-	16,604	N/A	10.69

1	Total Retail Sales Information		CY 2010 Compliance Activity			2010 RPS Renewable Sales Information			Provider RPS Requirements			Green Pricing Sales (GPS) Information			RPS + GPS
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Electric Provider or Aggregator*	2010 Retail Sales (MWh)	2007-2009 Ave. Retail Sales (MWh)	2010 RPS Required (MWh)	2010 M-RETS Certificates Retired	In Compliance?	Actual 2010 RPS Energy (MWh)	Actual 2010 RPS Energy as % of Ave. Sales	2010 RPS Energy as % of 2010 Retail Sales	Baseline RPS (%)	2010 RPS (%)	2015 RPS (%)	2010 GPS Sales (MWh)	2010 GPS + RPS Sales (MWh)	GPS as % of Total Renewable Sales	Total Renewable Sales as % of 2010 Retail Sales
Rock Energy Coop	272,470	152,253	7,506	7,506	YES	21,546	14.15	7.91	2.93	4.93	8.93	-	21,546	N/A	7.91
Sauk City Mun Wtr & Light Util	33,021	33,077	1,594	1,594	YES	2,697	8.15	8.17	2.82	4.82	8.82	-	2,697	N/A	8.17
Sheboygan Falls Utilities	178,279	178,229	8,502	8,502	YES	14,692	8.24	8.24	2.77	4.77	8.77	-	14,692	N/A	8.24
Shullsburg Electric Utility	10,278	10,251	494	494	YES	843	8.22	8.20	2.82	4.82	8.82	-	843	N/A	8.20
Spooner Municipal Utilities	33,494	33,066	2,829	2,829	YES	3,530	10.68	10.54	6.55	8.55	12.55	-	3,530	N/A	10.54
Stratford Mun Wtr & Elec Utility	17,148	17,489	929	929	YES	1,428	8.16	8.33	3.31	5.31	9.31	-	1,428	N/A	8.33
Superior Wtr Light & Pwr Co	666,080	659,318	29,867	29,867	YES	13,217	2.00	1.98	2.53	4.53	8.53	-	13,217	N/A	1.98
Trempealeau Mun Elc & Wtr Util	13,063	13,423	1,179	1,179	YES	1,522	11.34	11.65	6.78	8.78	12.78	-	1,522	N/A	11.65
Washington Island Cooperative	8,676	9,312	498	498	YES	816	8.76	9.41	3.35	5.35	9.35	-	816	N/A	9.41
Westfield Milling & Elec Co	12,962	13,134	632	632	YES	1,059	8.06	8.17	2.81	4.81	8.81	-	1,059	N/A	8.17
Wisconsin Dells Mun Elec Util	57,064	60,840	2,975	2,975	YES	4,765	7.83	8.35	2.89	4.89	8.89	-	4,765	N/A	8.35
<b>Wisconsin Electric Power Co</b>	24,533,047	24,950,726	1,065,396	1,065,396	YES	858,613	3.44	3.50	2.27	4.27	8.27	113,615	972,228	11.69	3.96
<b>Wisconsin Power &amp; Light</b>	10,130,310	10,410,455	549,672	549,672	YES	831,612	7.99	8.21	3.28	5.28	9.28	28,674	860,286	3.33	8.49
<b>WPPI Energy*</b>	4,847,437	4,918,556	306,918	306,918	YES	721,100	14.66	14.88	4.24	6.24	10.24	54,334	775,434	7.01	16.00
<b>Wisconsin Public Service Corp</b>	10,517,119	10,520,910	603,900	603,900	YES	917,722	8.72	8.73	3.74	5.74	9.74	19,631	937,353	2.09	8.91
Wonewoc Electric & Water Util	4,995	5,051	237	237	YES	441	8.73	8.83	2.69	4.69	8.69	-	441	N/A	8.83
<b>WISCONSIN TOTAL</b>	68,749,463	69,288,685	3,850,101	3,851,543	YES	5,064,081	7.31	7.37	3.55	5.55	9.55	378,911	5,442,992	6.96	7.92

## Appendix C: 2010 Renewable Retail Sales by State and Resource (MWh)

*Includes both Renewable RPS Sales and Green Pricing Sales*

Electric Provider/Aggregator*	WI Wind	WI Hydro	WI Biomass - Landfill gas	WI Biomass - Biogas	WI Biomass - Refuse-derived fuel	WI Biomass - Woody & Other	WI Biomass - Woody & Other	WI Solar	WI Subtotal	Non WI Wind	Non WI Hydro	Non WI Landfill gas	Non WI Biogas	Non WI Biomass - Refuse-derived fuel	Non WI Biomass - Woody & Other	Non WI Biomass - Woody & Other	Non WI - Solar	Non WI - Subtotal	Grand Total
Adams-Columbia Electric Coop		8,669	9,456	1,106	11			79	19,322	19,057								19,057	38,379
Bangor Municipal Utility			582						582	1,586					352	436		2,374	2,956
Barron Light & Water Utility			1,886						1,886	4,544					1,009	1,249		6,802	8,688
Belmont Mun Water & Elect Util		374	396	46					816	825								825	1,641
Benton Mun Elec & Water Util		99	108	17					224	237								237	461
Black Earth Electric Utility		314	336	39					689	692								692	1,381
Bloomer Electric Utilty			1,024						1,024	2,790					620	767		4,177	5,201
Cadott Light & Water Mun Util			283						283	771					172	212		1,155	1,438
Central Wisconsin Elec Coop		1,804	1,968	229					4,001	3,990								3,990	7,991
Centuria Municipal Electric Util									-									-	-
Consolidated Water Power Co			226,321				18,276		244,597									-	244,597
Cornell Mun Water & Elec Util			279						279	761					169	210		1,140	1,419
Dahlberg Light & Power Co			1,768						1,768									-	1,768
<b>Dairyland Power Cooperative</b>			49,689	26,142	13,794		28,123	2	117,750	70,130			25,398					95,528	213,278
East Central Energy									-	1,611				56				1,667	1,667

Electric Provider/Aggregator*	WI Wind	WI Hydro	WI Biomass - Landfill gas	WI Biomass - Biogas	WI Biomass - Refuse-derived fuel	WI Biomass - Woody & Other	WI Biomass - Woody & Other	WI Solar	WI Subtotal	Non WI Wind	Non WI Hydro	Non WI Landfill gas	Non WI Biomass - Biogas	Non WI Biomass - Refuse-derived fuel	Non WI Biomass - Woody & Other	Non WI Biomass - Woody & Other	Non WI - Solar	Non WI - Subtotal	Grand Total
Elkhorn Light & Water		2,074	2,256	266					4,596	4,574								4,574	9,170
Great Lakes Utilities		13,309	16,881	6,412	162				36,764	11,405	3,059							14,464	51,228
Gresham Mun Light & Pwr Util		389	432	47					868	846								846	1,714
Hazel Green Municipal Utility		156	180	21					357	345								345	702
<b>Madison Gas &amp; Electric Co</b>		60,732		30,377		21		641	91,771	278,845								278,845	370,616
Manitowoc Public Utilities		3,098	4,884	1,764			23,035	169	32,950		348							348	33,298
Marshfield Elec & Water Dept		13,956	8,196	5,040					27,192		984							984	28,176
Mazomanie Electric Utility		492	540	63					1,095	1,090								1,090	2,185
Medford Electric Utility			2,641						2,641	7,199					1,599	1,979		10,777	13,418
North Central Power Co Inc			9,570						9,570	1,626					808			2,434	12,004
<b>Northern States Power Co WI</b>			130,482			21,261	105,505		257,248	383,838	10,317				64,018			458,173	715,421
Northwestern WI Elec Co			13,184						13,184	10,420					5,180			15,600	28,784
Oconto Electric Coop		4,476	6,594			1,620			12,690		312							312	13,002
Pardeeville (Village of) Elec Util		375	396	46					817	830								830	1,647
Pioneer Power & Light Co		316	348	39					703	691								691	1,394
Princeton Mun Wtr & Elec Util		209	216	24					449	458								458	907
Rice Lake Mun Wtr & Elec Util			3,268						3,268	8,908					1,979	2,449		13,336	16,604
Rock Energy Coop		4,869	5,328	620	5				10,822	10,724								10,724	21,546

Electric Provider/Aggregator*	WI Wind	WI Hydro	WI Biomass - Landfill gas	WI Biomass - Biogas	WI Biomass - Refuse-derived fuel	WI Biomass - Woody & Other	WI Biomass - Woody & Other	WI Solar	WI Subtotal	Non WI Wind	Non WI Hydro	Non WI Landfill gas	Non WI Biogas	Non WI Biomass - Refuse-derived fuel	Non WI Biomass - Woody & Other	Non WI Biomass - Woody & Other	Non WI - Solar	Non WI - Subtotal	Grand Total
Sauk City Mun Wtr & Light Util		612	672	76					1,360	1,337								1,337	2,697
Sheboygan Falls Utilities	3,323	3,636	424						7,383	7,309								7,309	14,692
Shullsburg Electric Utility	193	204	22						419	424								424	843
Spooner Municipal Utilities		695							695	1,894					421	520		2,835	3,530
Stratford Mun Wtr & Elec Utility	708	420	252						1,380		48							48	1,428
Superior Wtr Light & Pwr Co							13,217		13,217									-	13,217
Trempealeau Mun Elc & Wtr Util		299							299	817					181	225		1,223	1,522
Washington Island Cooperative	408	240	144						792		24							24	816
Westfield Milling & Elec Co	238	276	28						542	517								517	1,059
Wisconsin Dells Mun Elec Util	1,077	1,188	133						2,398	2,367								2,367	4,765
<b>Wisconsin Electric Power Co</b>	416,796	49,447	205,394	15,035				1,233	687,905		284,323							284,323	972,228
<b>Wisconsin Power &amp; Light</b>	201,983	205,392	29,826	2,371				1,011	440,583	419,696							7	419,703	860,286
<b>WPPI Energy Wisconsin Public Service Corp</b>	236,296	225,083	35,998	3,157			6,713	274	507,521	250,788	17,125							267,913	775,434
Wonewoc Electric & Water Util	78,215	254,051	63,804	30,366			58,573		485,009	395,234	57,110							452,344	937,353
Woneoc Electric & Water Util	96	108	17						221	220								220	441
<b>TOTAL per State and Resource</b>	1,055,656	1,241,203	408,416	64,901	22,902	253,442	3,409	3,049,930	1,909,396	373,650	25,398	56	76,508	8,047	7	2,393,062	5,442,992		
<b>% of Total 2010 Renewables</b>	19.4%	22.8%	7.5%	1.2%	0.4%	4.7%	0.1%	56.0%	35.1%	6.9%	0.5%	0.0%	1.4%	0.1%	0.0%	44.0%	100.0%		

## Appendix D: 2010 Statistics Generated from Electric Provider Data

*Includes both Renewable RPS Sales and Green Pricing Sales*

### 2010 Total Sales to Wisconsin Retail Customers (renewable and nonrenewable)

	(MWh)	% of Total Sales
2010 Total Wisconsin Retail Sales	68,749,463	100.0%

### Renewable Sales by State

State	(MWh)	% of Total Sales	% of Renewable Sales
TOTAL Renewable Sales from Wisconsin	3,049,930	4.4%	56.0%
TOTAL Renewable Sales from Other States	2,393,062	3.5%	44.0%
<b>TOTAL Renewables Sales from ALL STATES</b>	<b>5,442,992</b>	<b>7.9%</b>	<b>100.0%</b>

### Renewable Sales by Renewable Resource

Renewable Resource	(MWh)	% of Total Sales	% of Renewable Sales
Wind	2,965,052	4.3%	54.5%
Hydro	1,614,853	2.3%	29.7%
Biomass	859,670	1.3%	15.8%
Solar	3,416	0.0%	0.1%
<b>TOTAL Renewable Sales from ALL RESOURCES</b>	<b>5,442,992</b>	<b>7.9%</b>	<b>100.0%</b>

### Biomass Sales Broken Down

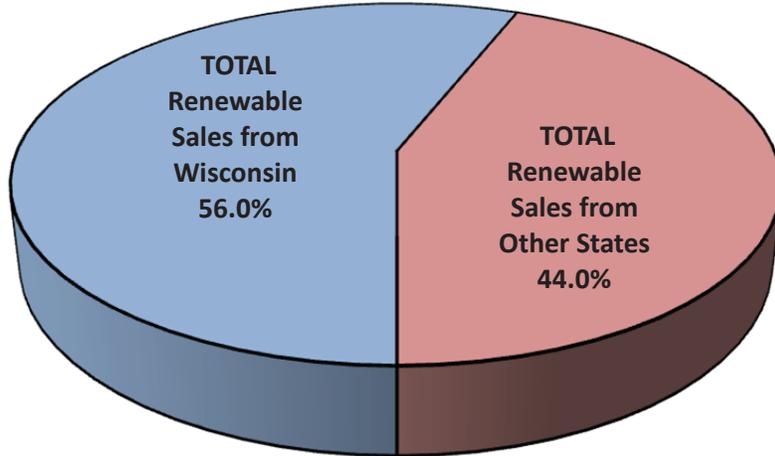
Biomass Type	(MWh)	% of Total Sales	% of Renewable Sales
Biogas	64,957	0.1%	1.2%
Refuse-derived	99,410	0.1%	1.8%
Woody & Other	261,489	0.4%	4.8%
Landfill gas	433,814	0.6%	8.0%
<b>TOTAL from Biomass</b>	<b>859,670</b>	<b>1.3%</b>	<b>15.8%</b>

### Renewable Sales by State and Renewable Resource

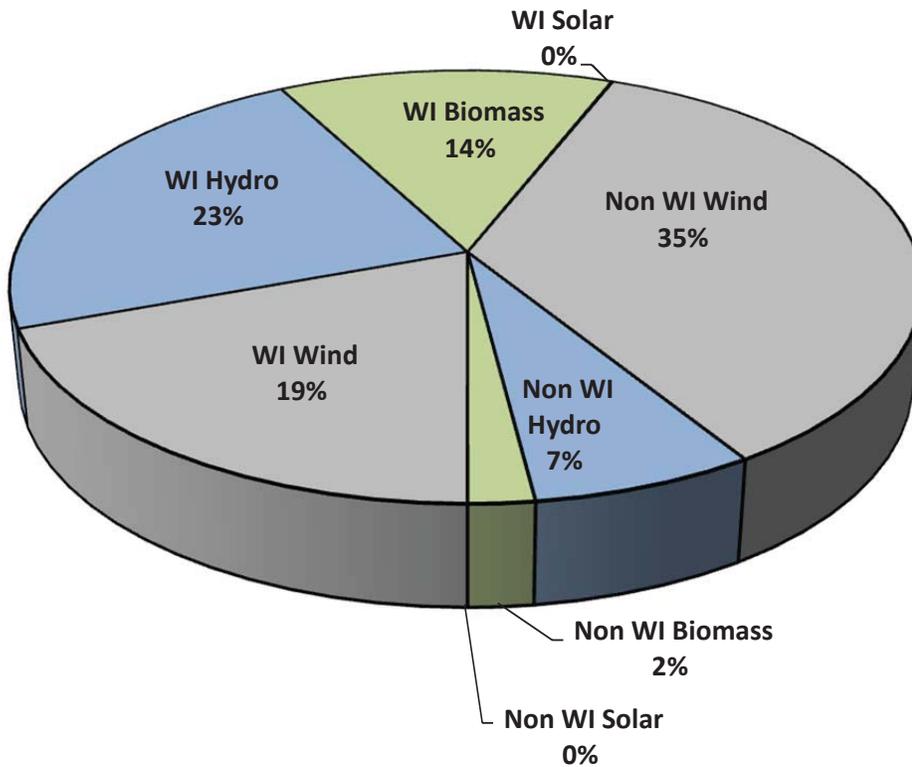
State / Renewable Resource	(MWh)	% of Total Sales	% of Renewable Sales among WI Resources	% of Renewable Sales among Non WI STATE Resources	% of Renewable Sales among ALL Resources
WI Wind	1,055,656	1.5%	34.6%		19.4%
WI Hydro	1,241,203	1.8%	40.7%		22.8%
WI Biomass	749,661	1.1%	24.6%		13.8%
WI Solar	3,409	0.0%	0.1%		0.1%
Non WI Wind	1,909,396	2.8%		79.8%	35.1%
Non WI Hydro	373,650	0.5%		15.6%	6.9%
Non WI Biomass	110,009	0.2%		4.6%	2.0%
Non WI Solar	7	0.0%		0.0%	0.0%
<b>TOTAL Renewables Sales from ALL STATES AND RESOURCES</b>	<b>5,442,992</b>	<b>7.9%</b>			<b>100.0%</b>

**Appendix E: 2010 Figures of Statistics  
Generated from Electric Provider Data**  
*Includes both Renewable RPS Sales and Green Pricing Sales*

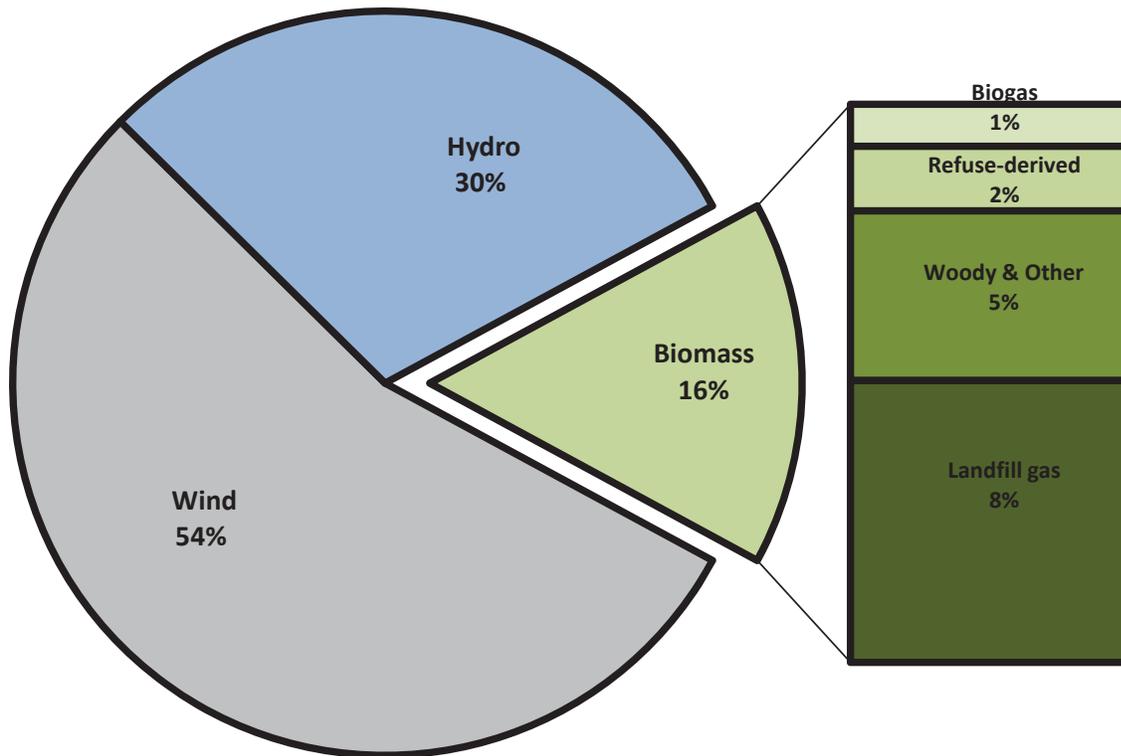
**2010 Renewable Sales by State**



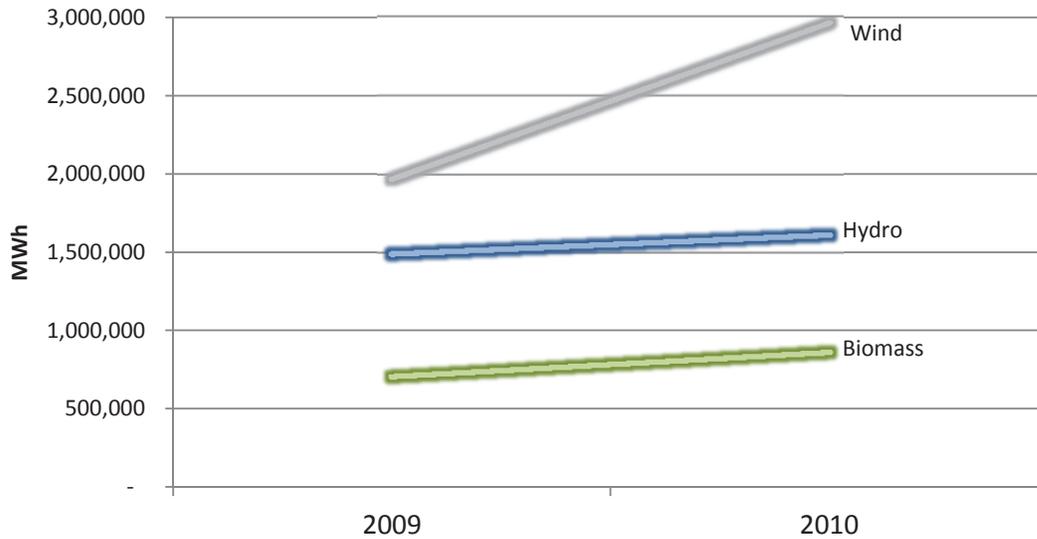
**2010 Renewable Sales by State and Resource**



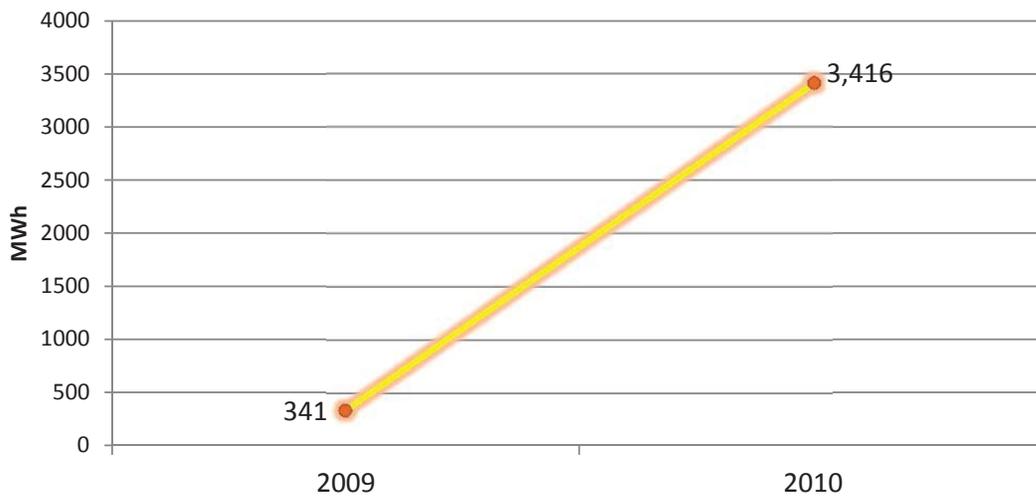
## 2010 Renewable Sales by Resource



### Retail Sales by Renewable Resource (2009-2010)\*



### Retail Sales from Solar Photovoltaic (2009-2010)\*



\* 2009 data do not contain all renewable sales that fall under utility voluntary green pricing programs, however 2010 data contain all utility sales that were under these programs in addition to renewable sales that were not. None of these data include distributed generation that was used directly on site without being sold by a Wisconsin electric provider.