

PUBLIC SERVICE COMMISSION OF WISCONSIN

Memorandum

August 27, 2012

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-214
for CY2011

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 instructed staff to work with electric providers that mistakenly retired more credits than were necessary for CY 2011 compliance to allow the electric providers to use the additional credits that were retired unnecessarily this year towards their CY 2012 Renewable Portfolio Standard obligations, if the electric providers otherwise would have been able to bank the amount of credits that were unnecessarily retired for use towards their CY 2012 obligation. The Commission directed the Gas and Energy Division to inform each electric provider of its compliance with the statute.

2011 RENEWABLE PORTFOLIO STANDARD COMPLIANCE REPORT

Compliance Summary

Background

Wisconsin Stat. § 196.378, known as the Renewable Portfolio Standard (RPS), applies to all electric providers that serve retail customers in Wisconsin. These electric providers include all investor-owned utilities, municipal utilities, and electric cooperatives that serve residential and business customers in the state. The 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. Beginning in CY 2010, electric providers were required to achieve a renewable energy percentage at 2 percent above their respective baselines. All Wisconsin electric providers complied with their CY 2010 RPS requirements. For CY 2011 through 2014, electric providers are required to maintain a renewable energy percentage at 2 percent above their baselines. In order to comply with the RPS in 2015 and thereafter, electric providers will need to meet and sustain a level that is 6 percent above their respective baselines.

Electric providers achieve compliance with their 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. RRCs 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 increase the facility's output and that occur on or after January 1, 2004; 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.¹ 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.

RPS Compliance in 2011

According to the RPS law, individual electric provider requirements for 2011 are determined by adding 2 percent to the electric provider’s renewable baseline percentage; this is the same percentage that electric providers were required to maintain for calendar year 2010. To determine the amount of the electric provider’s MWh requirement for CY 2011, the compliance year RPS percent requirement is multiplied by the average of electric provider’s total electricity sales to Wisconsin retail customers in 2008, 2009, and 2010. After receiving RPS reports from electric providers and aggregators and verifying information in M-RETS, Commission staff has determined that all 118 Wisconsin electric providers are in compliance with their CY 2011 RPS requirements.

¹ An M-RETS Certificate that is eligible for the RPS but is not eligible to create an RRC represents generation from a facility that cannot be banked for use in future years.

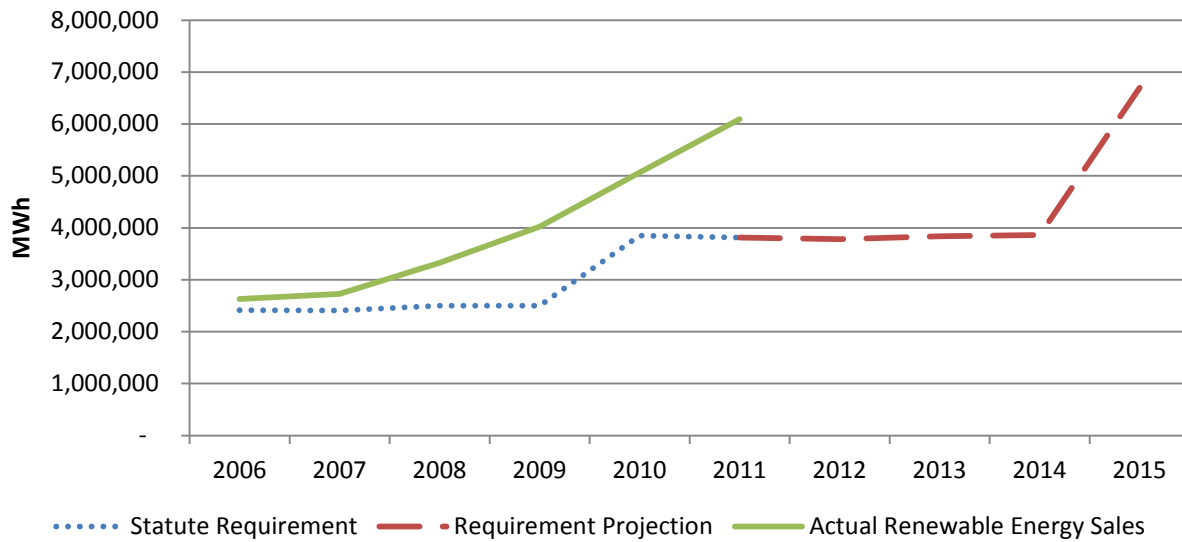
RPS Compliance through 2015 and Beyond

Commission staff has collected data and qualitative information from Wisconsin electric providers over the last few years through RPS compliance reports in order to assess the ability of each provider to meet future RPS requirements, to project the need for additional renewable resources, and to create statewide statistical information that can address potential renewable policy issues. While all 118 electric providers are required to satisfy the RPS, three wholesale providers conduct RPS compliance activity on behalf of their members, aggregating the compliance requirements and activities of those member municipal utilities and electric cooperatives. These three aggregators represent a total of 73 municipal electric utilities and electric cooperatives. Of the 45 other Wisconsin electric providers and three aggregators that are required to meet RPS obligations, 36 have achieved 2011 renewable sales levels that already appear sufficient to meet their 2015 requirements.² Of the remaining 11 electric providers and one aggregator, four are very close to meeting their 2015 requirements. The other eight claim they will be able to procure resources to meet future requirements through wholesale purchase agreements, new utility-owned generation, Purchase Power Agreements (PPA) with Independent Power Producers or RRC purchases from other Wisconsin electric providers. More electric provider-specific information is contained in subsequent sections of this memorandum and in appendices that are described below.

Figure 1, which reflects aggregated electric provider requirements compared to actual sales from renewable energy, shows that over 6 million MWh of renewable energy were generated and available to meet RPS obligations in 2011.

² For the purposes of providing an outlook on 2015 compliance, 2011 renewable sales are divided by 2011 total retail sales to arrive at a more forward-looking renewable energy percentage. For a complete list see Appendix A.

Figure 1 Wisconsin Statewide RPS Renewable Energy Sales Required vs. Actual (MWh)



Because each electric provider has its own RPS percentage requirement and compliance is measured based on comparing each percentage to each electric provider’s retail sales, the overall statewide picture of what the RPS requires can change over time as retail sales rates change inconsistently across electric provider service territories. Commission staff projects electric provider requirements for 2015 RPS compliance to be 9.57 percent of statewide total retail sales.³ As reflected in Figure 1, Commission staff projects that about 6.7 million MWh of renewable energy will be needed to meet all 2015 electric provider requirements. However, in order to meet the statewide goal of 10 percent by 2015 stated in the RPS statute,⁴ Commission staff projects that 7 million MWh of renewable sales will be needed.⁵ This represents approximately 1 million MWh worth of annual retail sales from renewable resources above 2011 sales levels.⁶ It is possible that activity by electric providers that have not yet achieved their

³ Actual future statewide aggregate percentage will depend upon individual electric provider load growth. If load growth is consistent across providers, this aggregate percentage will remain the same.

⁴ Wisconsin Stat. § 196.378(2)(a)1.

⁵ This projection assumes 1 percent statewide annual growth in total retail sales using 2011 as a base year.

⁶ This estimate excludes renewable energy sales from voluntary green pricing programs, as electric providers have confirmed they are not using green pricing sales to comply with RPS requirements.

2015 targets will drive renewable energy procurement of the approximately 1 million additional MWh needed statewide to meet the 10 percent goal by 2015. However, these electric providers could also opt to purchase RRCs from the banks of other electric providers that have exceeded their own requirements for the last several years. In the latter of these two scenarios, it would be possible to observe total compliance by all electric providers, while still falling short of the statewide RPS renewable energy goal of 10 percent in CY 2015.

As noted earlier, when an electric provider sells more renewable energy at retail to Wisconsin customers than it needs to satisfy its RPS requirement, the excess can be banked in the form of RRCs. A number of electric providers have been exceeding their RPS requirements for several years, and are projected to continue to exceed their requirements for at least several years into the future. Based on information provided by electric providers in their RPS filings this year, it appears that the aggregate picture of banked RRCs available for compliance with the RPS in future years is quite large: approximately 9 Million MWh of RRCs are available for use in future years.⁷ In past years, a number of electric providers indicated they had little or no plans to purchase RRCs from other electric providers for RPS compliance because they did not believe there would be many RRCs available. As of CY 2011, the opposite appears to be the case. While a large portion of these banked RRCs are probably planned for use by the electric providers currently owning them, other electric providers have future RPS compliance plans that largely depend on purchasing RRCs for compliance. At this time, it appears this may be a viable compliance strategy. However, electric providers planning to use RRC purchases for RPS compliance in future years should be aware that RRCs currently available could also be sold to

⁷ Total includes RRCs whose eligibility will expire in 2012, 2013, 2014, and 2015. It does not include RRCs that have been created or will be created from renewable generation occurring in CY 2012.

electric providers in other states for compliance with another state's RPS or for satisfaction of a voluntary renewable energy program or other voluntary market claim.

Appendices

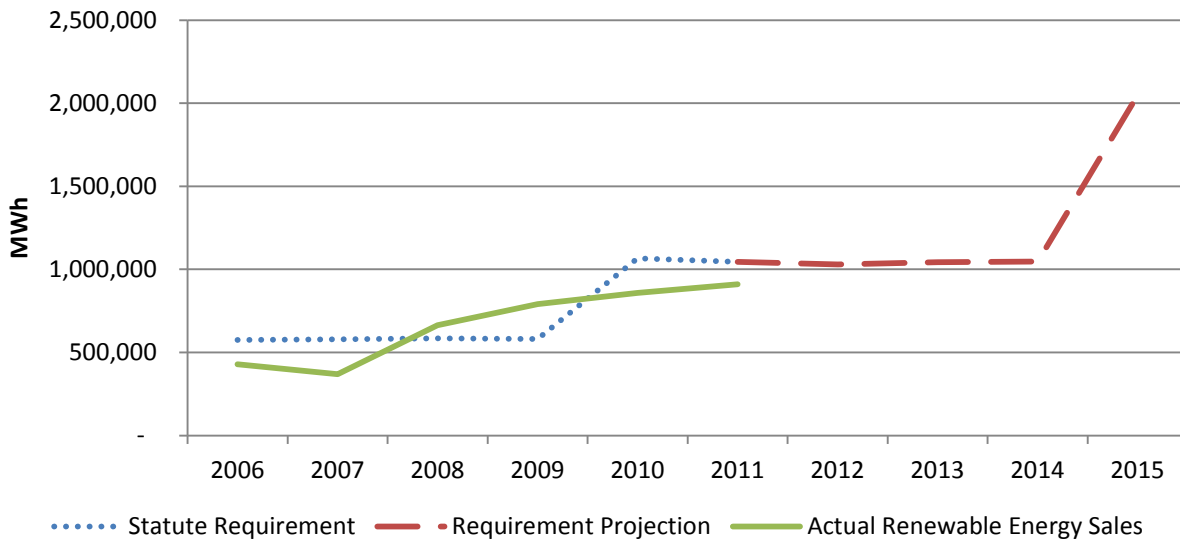
As mentioned previously, a compilation of electric provider RPS compliance reports over the last few years has enabled Commission staff to establish a robust set of renewable energy statistics based on sales of electricity to Wisconsin retail customers. Appendices A through E at the end of this memorandum contain updated information on individual electric provider renewable energy sales, and figures that represent statewide statistics on renewable resources that are available to meet RPS requirements.

2011 RPS Compliance and Outlook by Largest Electric Providers

Wisconsin Electric Power Company

As its 2011 renewable sales were slightly below 4.27 percent of total retail sales, Wisconsin Electric Power Company (WEPCO) was able to achieve 2011 compliance by retiring RRCs that were both banked from previous years and purchased from other electric providers. WEPCO's historical sales levels of renewable energy versus RPS requirements, past and projected, are reflected in Figure 2.

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

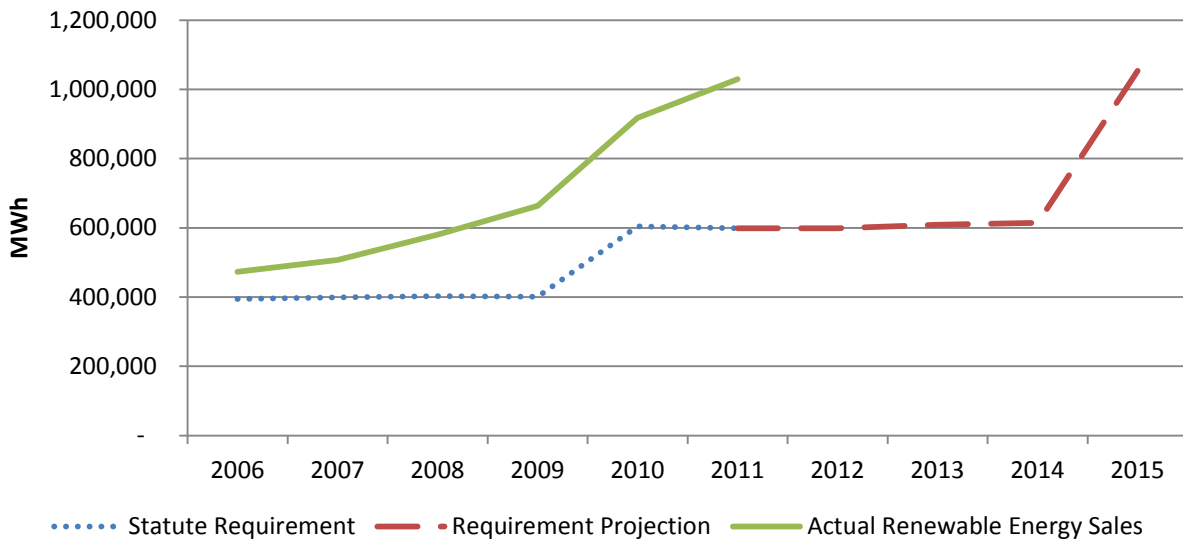


WEPCO will experience a significant growth in renewable energy sales over the next few years due to the 162 megawatt (MW) Glacier Hills Wind Park, placed in service in late 2011, and the 50 MW Rothschild Biomass plant under construction and due to be in-service in 2013. WEPCO also plans to propose two utility-scale solar facilities. These facilities will enable WEPCO to develop a bank of RRCs between 2012 and 2014 in order to meet elevated 2015 requirements, when it will have to retire over 2 million MWh worth of M-RETS Certificates and RRCs, equal to 8.27 percent of its total retail sales. Beyond 2015, WEPCO notes that to remain in compliance it will need to acquire additional resources in the form of utility-owned generation, PPA purchases, or RRC purchases from other Wisconsin electric providers.

Wisconsin Public Service Corporation

During the 2011 RPS compliance period, Wisconsin Public Service Corporation (WPSC) was able to achieve a renewable sales level that comes close to what its 2015 requirement is projected to be—slightly more than 1 million MWh. Figure 3 shows WPSC’s historical renewable sales.

Figure 3 WPSR RPS Renewable Energy Sales Required vs. Actual (MWh)

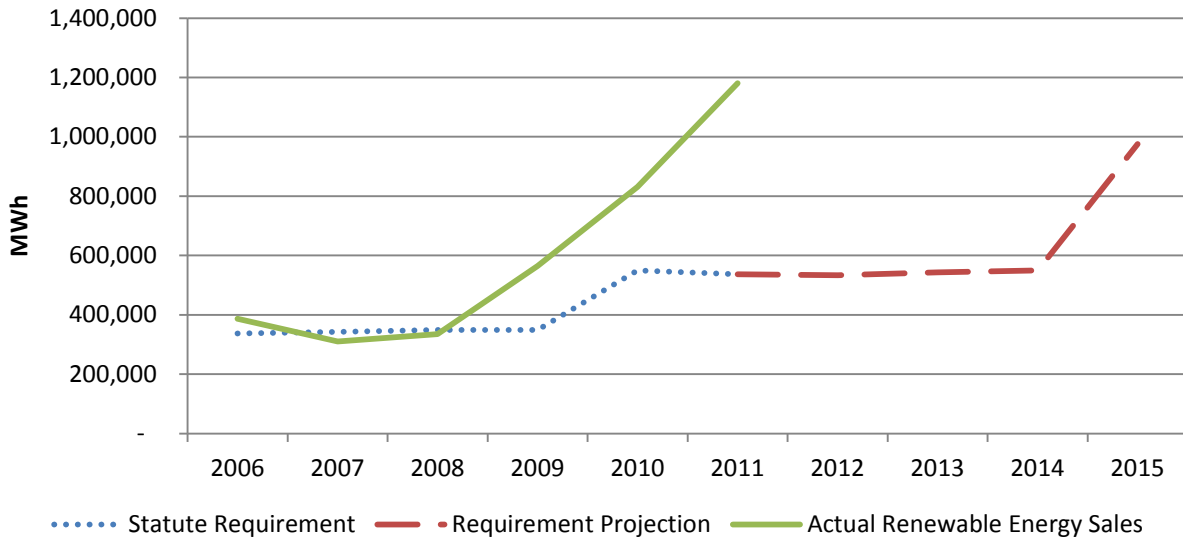


WPSR plans to maintain its renewable energy sales level for the foreseeable future and use RRCs it has been accumulating in order to meet compliance requirements in 2015 and in the few years beyond 2015. WPSR also plans on expanding its Advanced Renewable Tariff (ART) purchases from dairy farms that are installing digesters that produce biogas for electric generation, and has stated an interest in purchasing renewable energy from new large hydro facilities that would qualify for the Wisconsin RPS according to 2011 Wisconsin Act 34; such new facilities would be eligible beginning in 2016.

Wisconsin Power and Light Company

As reflected in Figure 4 below, Wisconsin Power and Light Company (WP&L) sold more electricity from renewable resources in 2011 than its requirement will be for compliance year 2015. WP&L has a 2015 RPS percent requirement of 9.28 percent of total retail sales from renewable resources, and has already demonstrated an 11.46 percent achievement in 2011. As a result, WP&L likely needs only to maintain its current renewable sales levels in the future to remain compliant well after 2015.

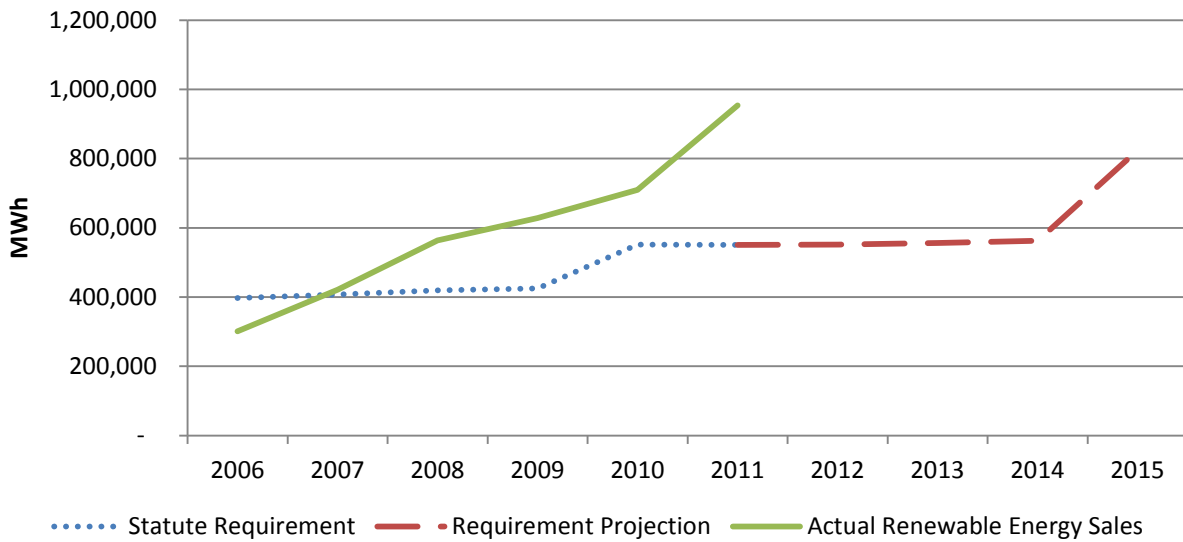
Figure 4 WP&L RPS Renewable Energy Sales Required vs. Actual (MWh)



Northern States Power Company–Wisconsin

Northern States Power Company–Wisconsin (NSPW) also surpassed its projected 2015 renewable energy sales requirements in 2011. Figure 5 below shows that NSPW is well positioned to meet future RPS renewable sales requirements for the foreseeable future, and will not need to acquire any additional renewable resources. Additionally, through its interchange agreement with Northern States Power Company–Minnesota (NSPM), NSPW will continue to acquire a load ratio share of renewable resources from the NSPW/NSPM system. In future years, the amount of renewable resources added to the NSPW/NSPM system will continue to increase in order to comply with the requirements of the Minnesota RPS, which are higher than the requirements of the Wisconsin RPS. This in turn will result in further increases in renewable resources for NSPW, through its load ratio share of the NSPW/NSPM system.

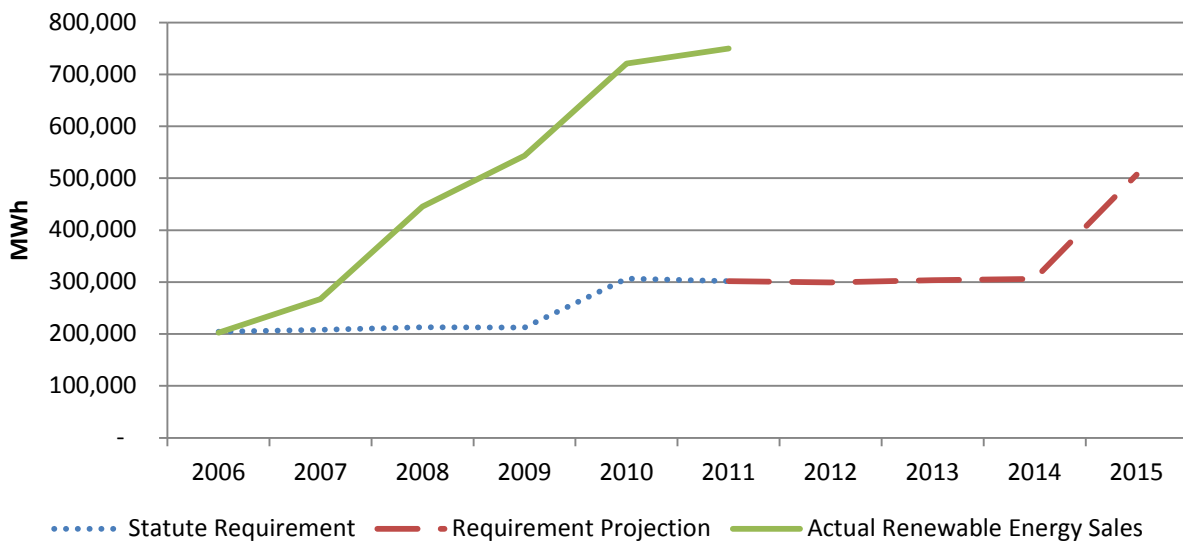
Figure 5 NSPW RPS Renewable Energy Sales Required vs. Actual (MWh)



WPPI Energy

For the last three RPS compliance years (2009-2011), WPPI Energy (WPPI) has sold more electricity from renewable resources than will be required in 2015. WPPI achieved 15.45 percent of total retail sales from renewable resources in 2011, almost 750,000 MWh as shown in Figure 6, well above its 2015 requirement of 10.24 percent.

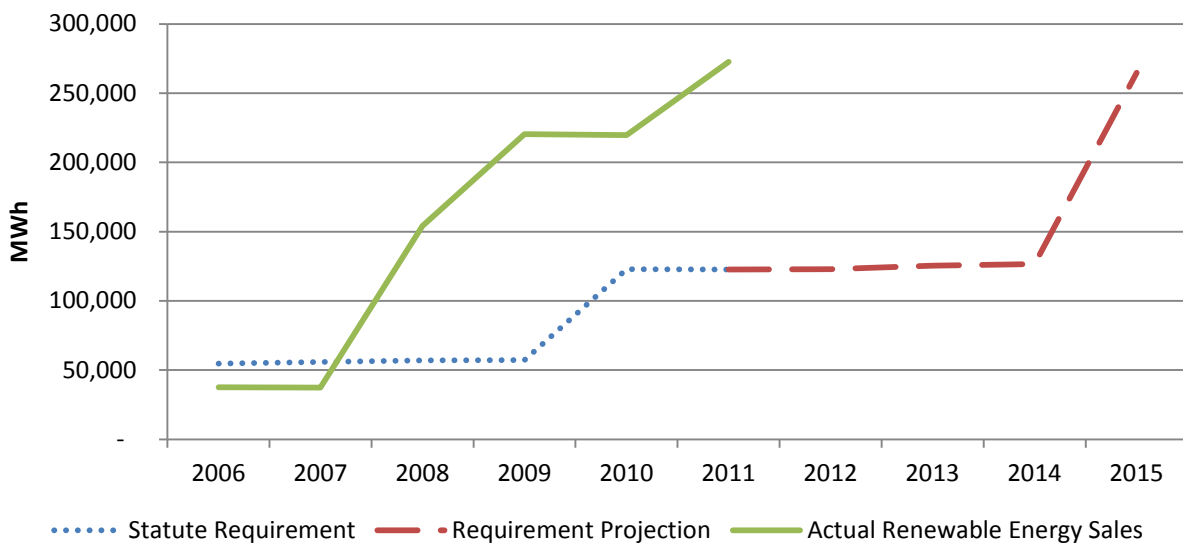
Figure 6 WPPI RPS Renewable Energy Sales Required vs. Actual (MWh)



Madison Gas and Electric Company

Like many other electric providers in the state of Wisconsin, Madison Gas and Electric Company (MGE) has also sold more electricity from renewable resources in 2011 than will be required in 2015. Figure 7 presents MGE's historical renewable energy sales versus required sales levels. MGE notes that it has acquired sufficient renewable resources to meet requirements beyond 2015, including new purchases from farmers in Dane County that use manure digesters to produce biogas as fuel for electricity generated on site and placed on the local distribution system.

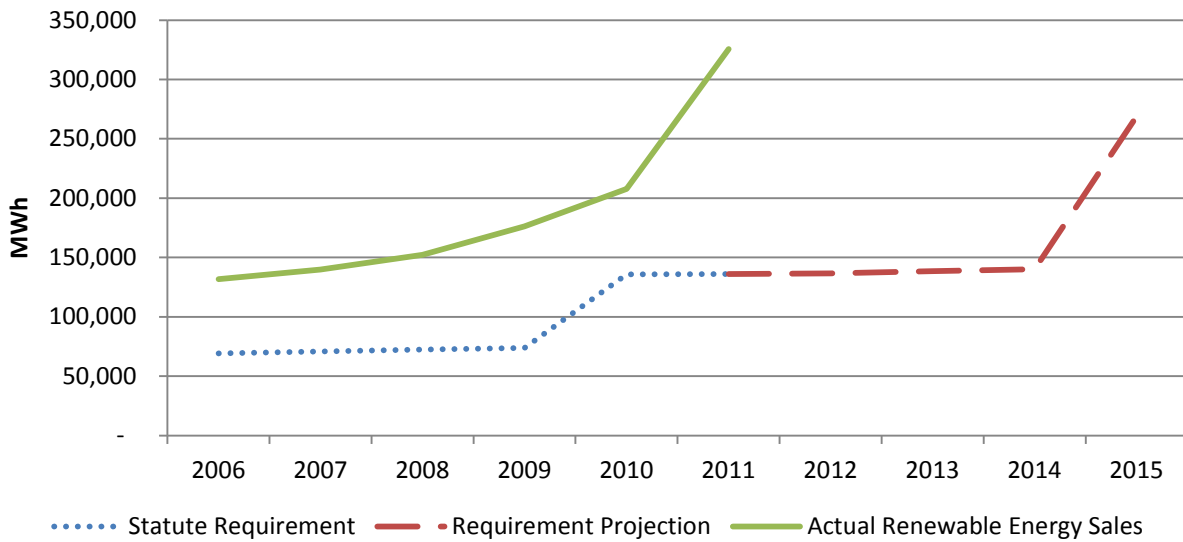
Figure 7 MGE RPS Renewable Energy Sales Required vs. Actual (MWh)



Dairyland Power Cooperative

Dairyland Power Cooperative (DPC) increased its Wisconsin renewable energy sales dramatically from 2010 to 2011, and has now achieved a level that exceeds its 2015 requirements. Furthermore, DPC states that RPS requirements in other states will likely cause their future renewable energy sales levels to increase beyond historical levels shown in Figure 8.

Figure 8 DPC RPS Renewable Energy Sales Required vs. Actual (MWh)



Over-retirement of RRCs for CY 2011 Compliance

In reviewing electric provider activity demonstrating RPS compliance for CY 2011, Commission staff determined that two electric providers and one aggregator appear to have retired more RRCs than they needed for CY 2011. Specifically, DPC, Northwestern Wisconsin Electric Company (Northwestern), and North Central Power Company (North Central) appear to have over-retired compared to their obligations. DPC confirmed that its over-retirement of RRCs was due to confusion in using a new process in M-RETS that tracks the RPS value of those facilities owned or operated by the electric provider for which RPS compliance credit is given for the facility’s 2001-2003 average generation, rather than actual generation occurring each year. Northwestern and North Central have not confirmed the reason for their apparent over-retirements; however, Commission staff believes it is possible that confusion over the same new process may be the cause. The Commission may wish to consider allowing these electric providers to use the additional RRCs that were retired unnecessarily this year toward next year’s

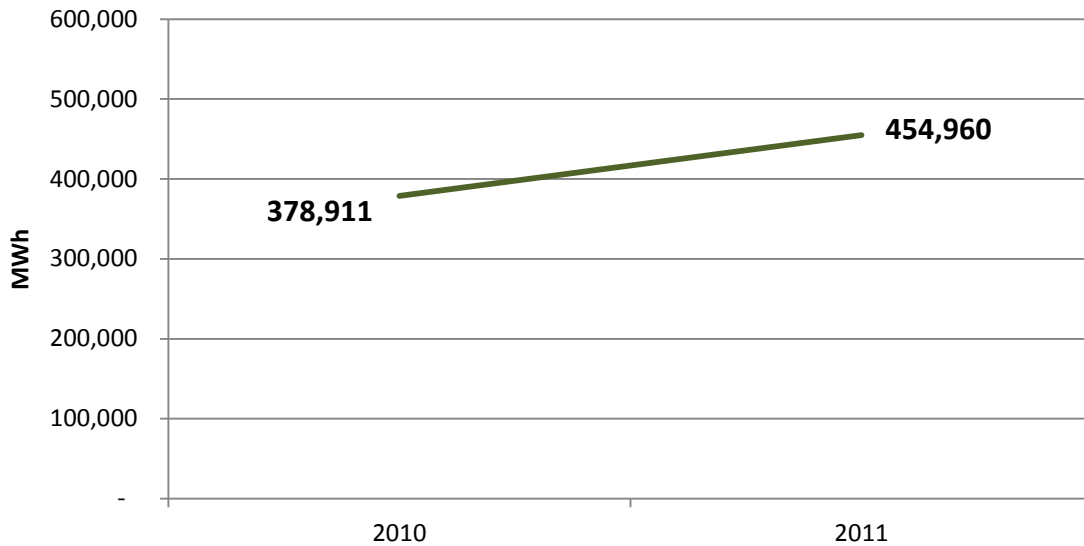
RPS obligation, if the electric providers otherwise would have been able to bank the amount of RRCs that were unnecessarily retired for use toward the next year's obligation.

Total Renewable Resources – RPS and Green Pricing

For several years, Wisconsin electric providers have offered opt-in voluntary programs to their customers that can drive the electric providers to acquire additional renewable resources beyond what is required by the RPS law. Customers that value renewable resources pay a premium on their electric bill, which is often equivalent to the incremental cost of renewable resources that is applied to a portion or the full amount of electricity the customer uses each month. All large and a few smaller electric providers currently offer this option to their business and residential retail customers in Wisconsin. Each electric provider creates a mix of renewable resources to supply customer demand—usually wind, solar, and/or one or more types of biomass, such as biogas. Commission staff has verified that all retirements for 2011 RPS compliance were used for the Wisconsin RPS alone, and were not counted for any such voluntary green pricing programs.

Most Wisconsin electric providers that offer voluntary green pricing programs continue to experience growth in green pricing sales that are attributable to customer demand. 2010 was the first year Commission staff began to collect data from all electric providers on sales of electricity attributable to green pricing programs, and Figure 9 shows the statewide growth in green pricing sales over the last two years.

Figure 9 Renewable Energy Sales Attributable to Wisconsin Electric Provider Green Pricing Programs (MWh)



As was shown in Figure 1 at the beginning of this memorandum, RPS-eligible retail sales of electricity exceeded 6 million MWh in 2011. Retail sales of electricity due to green pricing programs combined with RPS-eligible sales of electricity totaled over 6.5 million MWh in 2011. This represents about 9.5 percent of the 68.6 million MWh of electricity used by Wisconsin customers in 2011.

Renewable Resource Statistics

Almost 60 percent of 2011 renewable energy generation used for sales to Wisconsin retail customers came from wind facilities, with hydro and biomass energy providing about 23 and 17 percent, respectively. Less than 0.1 percent of all renewable energy sales came from solar photovoltaic facilities.

From a resource location perspective, just under half of all the renewable energy generation came from facilities located in Wisconsin. This is a shift away from a slight majority coming from Wisconsin facilities in the past, but the majority could swing back to Wisconsin facilities considering the Glacier Hills Wind Farm coming completely in-service in early 2012,

along with the Rothschild Biomass Plant expected later in 2013. According to electric provider reports, there are plans for more generation coming from dairy farm digesters burning biogas. Although renewable energy sales from hydro facilities have remained fairly flat over the last few years, electric provider contracts with large, out-of-state hydro facilities will also likely increase hydro contributions to renewable energy sales in the future. Further statistics and figures that describe resources and location of facilities can be found in the appendices to this memorandum.

Commission Alternatives

Alternative One: Accept the reports of Wisconsin electric providers and aggregators as to their compliance with the requirements of Wis. Stat. § 196.378(2)(a)2.

Alternative Two: Accept the reports of Wisconsin electric providers and aggregators as to their compliance with the requirements of Wis. Stat. § 196.378(2)(a)2; instruct Commission staff to work with electric providers that mistakenly retired more RRCs than were necessary for CY 2011 compliance to allow the electric providers to use the additional RRCs that were retired unnecessarily this year toward their CY 2012 RPS obligations, if the electric providers otherwise would have been able to bank the amount of RRCs that were unnecessarily retired for use toward their CY 2012 obligation.

Alternative Three: Do 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. and provide further instruction to Commission staff or the providers and aggregators.

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Attachments Appendices A through E

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

Electric Provider or Aggregator*	2011 RPS Renewable Energy Sales as Percent of 2011 Total Retail Energy Sales	2015 RPS Percent Requirement	Percent of 2015 RPS Requirement Achieved in 2011
WPPI Energy*	15.45	10.24	150.9
Princeton Mun Wtr & Elec Util	12.14	8.21	147.8
Pioneer Power & Light Co	12.24	8.71	140.5
Pardeeville (Village of) Elec Util	11.66	8.44	138.1
Wonewoc Electric & Water Util	11.76	8.69	135.4
Oconto Electric Coop	14.45	10.71	134.9
Westfield Milling & Elec Co	11.81	8.81	134.0
Mazomanie Electric Utility	11.27	8.45	133.3
Benton Mun Elec & Water Util	11.69	8.86	132.0
Central Wisconsin Elec Coop	11.79	8.94	131.9
Hazel Green Municipal Utility	11.61	8.87	130.9
Belmont Mun Water & Elect Util	11.43	8.76	130.5
Adams-Columbia Electric Coop	11.59	8.92	129.9
Sauk City Mun Wtr & Light Util	11.37	8.82	128.9
Wisconsin Dells Mun Elec Util	11.45	8.89	128.8
Shullsburg Electric Utility	11.36	8.82	128.7
Sheboygan Falls Utilities	11.28	8.77	128.6
Black Earth Electric Utility	11.65	9.23	126.2
Rock Energy Coop	11.15	8.93	124.9
Wisconsin Power & Light	11.46	9.28	123.5
Dairyland Power Cooperative*	10.42	8.44	123.4
Bangor Municipal Utility	15.23	12.62	120.7
Trempealeau Mun Elc & Wtr Util	15.34	12.78	120.1
Elkhorn Light & Water	11.31	9.43	120.0
Gresham Mun Light & Pwr Util	10.05	8.43	119.2
Cornell Mun Water & Elec Util	15.01	12.65	118.7
Northern States Power Co WI	15.21	12.89	118.0
Bloomer Electric Utility	14.68	12.47	117.7
Spooner Municipal Utilities	14.67	12.55	116.9
Medford Electric Utility	14.50	12.41	116.9
Rice Lake Mun Wtr & Elec Util	14.17	12.53	113.1
Barron Light & Water Utility	14.40	12.85	112.1
Washington Island Cooperative	10.42	9.35	111.5
Cadott Light & Water Mun Util	14.15	12.72	111.2
Madison Gas & Electric Co	8.12	7.73	105.0
Stratford Mun Wtr & Elec Utility	9.58	9.31	103.0
Wisconsin Public Service Corp	9.71	9.74	99.7
Consolidated Water Power Co	22.18	22.47	98.7
Great Lakes Utilities*	7.63	8.07	94.5
Marshfield Elec & Water Dept	8.36	8.91	93.8
Manitowoc Public Utilities	6.50	9.19	70.7
North Central Power Co Inc	23.17	39.11	59.2
Superior Wtr Light & Pwr Co	4.48	8.53	52.5
Wisconsin Electric Power Co	3.75	8.27	45.3
Northwestern WI Elec Co	7.46	18.48	40.4
East Central Energy	2.64	6.64	39.8
Dahlberg Light & Power Co	1.87	7.37	25.4
Centuria Municipal Electric Util	0.00	18.37	0.0
WISCONSIN TOTAL	8.88	9.57	92.8

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

All electric providers are in compliance for 2011. If an electric provider has a percentage below their RPS requirement in this table, they have used banked credits or purchased credits from another provider.

Appendix B: 2011 Total Retail Energy Sales & Renewable Energy Sales by Wisconsin Electric Provider

COLUMN KEY FOR TABLE BELOW

Columns 7-9, 13, 14, and 16 highlight CY 2011 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 2011 total retail sales per electric provider (from all generators) as reported to the Commission.
3. CY 2008-2010 average annual total retail energy 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. 2008-2010 average total retail energy sales (Col. 3) multiplied by utility's 2011 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 2011. If Col. 5 is greater or equal to Co. 4 then "YES" in compliance, otherwise "NO".
7. Electric sales to Wisconsin retail customers in 2011, 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 2011).
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. Wisconsin aggregate baseline percentage has been updated based on current information.
11. Percentage required for years 2010-2014, equal to baseline % +2%; per Wis. Stat. § 196.378(2)(a)2. Wisconsin aggregate percentage requirement updated based on current information.
12. Percentage required for years 2015 and beyond; equal to baseline % +6%; per Wis. Stat. § 196.378(2)(a)2. Wisconsin aggregate percentage requirement projected based on current information.
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. 2011 Total renewable sales that include RPS eligible and green pricing sales (Col. 7 plus Col. 13).
15. 2011 Green pricing sales as a percent of total 2011 RPS eligible and green pricing renewable sales (Col. 14 divided by Col. 13).
16. All renewable energy sales (Green Pricing and RPS Energy) divided by 2011 total retail energy 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 Energy Sales Information		CY 2011 Compliance Activity			2011 RPS Renewable Energy 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*	2011 Retail Sales (MWh)	2008-2010 Ave. Retail Sales (MWh)	2011 RPS Required (MWh)	2011 M-RETS Certificates Retired	In Compliance?	Actual 2011 RPS Energy (MWh)	Actual 2011 RPS Energy as % of Ave. Sales	2011 RPS Energy as % of 2011 Retail Sales	Baseline RPS (%)	2010 RPS (%)	2015 RPS (%)	2011 GPS Sales (MWh)	2011 GPS + RPS Sales (MWh)	GPS as % of Total Renewable Sales	Total Renewable Sales as % of 2011 Retail Sales
Adams-Columbia Electric Coop	471,765	469,678	23,108	23,108	YES	54,655	11.64	11.59	2.92	4.92	8.92	225	54,880	0.41	11.63
Bangor Municipal Utility	26,343	28,384	2,446	2,447	YES	4,012	14.13	15.23	6.62	8.62	12.62	-	4,012	N/A	15.23
Barron Light & Water Utility	83,707	80,998	7,172	7,172	YES	12,055	14.88	14.40	6.85	8.85	12.85	-	12,055	N/A	14.40
Belmont Mun Water & Elect Util	21,270	19,583	932	932	YES	2,431	12.41	11.43	2.76	4.76	8.76	-	2,431	N/A	11.43
Benton Mun Elec & Water Util	5,371	5,519	268	268	YES	628	11.38	11.69	2.86	4.86	8.86	-	628	N/A	11.69
Black Earth Electric Utility	16,395	16,600	868	868	YES	1,910	11.51	11.65	3.23	5.23	9.23	-	1,910	N/A	11.65
Bloomer Electric Utility	49,618	48,735	4,126	4,127	YES	7,284	14.95	14.68	6.47	8.47	12.47	-	7,284	N/A	14.68
Cadott Light & Water Mun Util	13,941	13,151	1,147	1,147	YES	1,972	14.99	14.15	6.72	8.72	12.72	-	1,972	N/A	14.15
Central Wisconsin Elec Coop	96,764	94,286	4,658	4,659	YES	11,407	12.10	11.79	2.94	4.94	8.94	-	11,407	N/A	11.79
Centuria Municipal Electric Util	5,676	5,413	778	778	YES	0	0.00	0.00	12.37	14.37	18.37	-	-	N/A	0.00
Consolidated Water Power Co	1,094,662	1,395,997	257,841	257,842	YES	242,745	17.39	22.18	16.47	18.47	22.47	-	242,745	N/A	22.18
Cornell Mun Water & Elec Util	12,921	12,732	1,101	1,102	YES	1,940	15.24	15.01	6.65	8.65	12.65	-	1,940	N/A	15.01
Dahlberg Light & Power Co	102,512	102,279	3,447	3,447	YES	1,920	1.88	1.87	1.37	3.37	7.37	-	1,920	N/A	1.87
Dairyland Power Cooperative*	3,124,469	3,066,525	136,154	136,684	YES	325,504	10.61	10.42	2.44	4.44	8.44	5,352	330,856	1.62	10.59
East Central Energy	49,771	49,866	1,316	1,316	YES	1,316	2.64	2.64	0.64	2.64	6.64	389	1,705	22.82	3.43
Elkhorn Light & Water	114,524	110,407	5,995	5,995	YES	12,955	11.73	11.31	3.43	5.43	9.43	-	12,955	N/A	11.31

1	Total Retail Energy Sales Information		CY 2011 Compliance Activity			2011 RPS Renewable Energy 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*	2011 Retail Sales (MWh)	2008-2010 Ave. Retail Sales (MWh)	2011 RPS Required (MWh)	2011 M-RETS Certificates Retired	In Compliance?	Actual 2011 RPS Energy (MWh)	Actual 2011 RPS Energy as % of Ave. Sales	2011 RPS Energy as % of 2011 Retail Sales	Baseline RPS (%)	2010 RPS (%)	2015 RPS (%)	2011 GPS Sales (MWh)	2011 GPS + RPS Sales (MWh)	GPS as % of Total Renewable Sales	Total Renewable Sales as % of 2011 Retail Sales
Great Lakes Utilities*	753,046	709,737	28,942	28,987	YES	57,441	8.09	7.63	2.07	4.07	8.07	-	57,441	N/A	7.63
Gresham Mun Light & Pwr Util	23,812	22,187	983	983	YES	2,392	10.78	10.05	2.43	4.43	8.43	-	2,392	N/A	10.05
Hazel Green Municipal Utility	8,429	8,018	390	391	YES	979	12.21	11.61	2.87	4.87	8.87	-	979	N/A	11.61
Madison Gas & Electric Co	3,357,554	3,288,258	122,652	122,653	YES	272,582	8.29	8.12	1.73	3.73	7.73	136,063	408,645	33.30	12.17
Manitowoc Public Utilities	515,349	521,749	27,079	27,257	YES	33,499	6.42	6.50	3.19	5.19	9.19	224	33,723	0.66	6.54
Marshfield Elec & Water Dept	366,372	369,064	18,121	18,122	YES	30,636	8.30	8.36	2.91	4.91	8.91	-	30,636	N/A	8.36
Mazomanie Electric Utility	29,665	26,645	1,186	1,186	YES	3,342	12.54	11.27	2.45	4.45	8.45	-	3,342	N/A	11.27
Medford Electric Utility	127,709	127,263	10,700	10,700	YES	18,523	14.55	14.50	6.41	8.41	12.41	-	18,523	N/A	14.50
North Central Power Co Inc	32,675	31,851	11,183	11,205	YES	7,570	23.77	23.17	33.11	35.11	39.11	-	7,570	N/A	23.17
Northern States Power Co WI	6,268,912	6,190,317	550,312	563,617	YES	953,453	15.40	15.21	6.89	8.89	12.89	8,081	961,534	0.84	15.34
Northwestern WI Elec Co	169,351	166,324	24,084	25,378	YES	12,635	7.60	7.46	12.48	14.48	18.48	-	12,635	N/A	7.46
Oconto Electric Coop	108,036	105,605	7,086	7,161	YES	15,609	14.78	14.45	4.71	6.71	10.71	-	15,609	N/A	14.45
Pardeeville (Village of) Elec Util	19,721	21,242	943	943	YES	2,299	10.82	11.66	2.44	4.44	8.44	-	2,299	N/A	11.66
Pioneer Power & Light Co	16,878	17,152	808	808	YES	2,066	12.05	12.24	2.71	4.71	8.71	-	2,066	N/A	12.24
Princeton Mun Wtr & Elec Util	10,696	10,886	458	459	YES	1,298	11.92	12.14	2.21	4.21	8.21	-	1,298	N/A	12.14
Rice Lake Mun Wtr & Elec Util	162,040	156,445	13,347	13,348	YES	22,961	14.68	14.17	6.53	8.53	12.53	-	22,961	N/A	14.17

1	Total Retail Energy Sales Information		CY 2011 Compliance Activity			2011 RPS Renewable Energy 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*	2011 Retail Sales (MWh)	2008-2010 Ave. Retail Sales (MWh)	2011 RPS Required (MWh)	2011 M-RETS Certificates Retired	In Compliance?	Actual 2011 RPS Energy (MWh)	Actual 2011 RPS Energy as % of Ave. Sales	2011 RPS Energy as % of 2011 Retail Sales	Baseline RPS (%)	2010 RPS (%)	2015 RPS (%)	2011 GPS Sales (MWh)	2011 GPS + RPS Sales (MWh)	GPS as % of Total Renewable Sales	Total Renewable Sales as % of 2011 Retail Sales
Rock Energy Coop	277,115	212,158	10,459	10,459	YES	30,909	14.57	11.15	2.93	4.93	8.93	-	30,909	N/A	11.15
Sauk City Mun Wtr & Light Util	32,120	32,757	1,579	1,579	YES	3,652	11.15	11.37	2.82	4.82	8.82	-	3,652	N/A	11.37
Sheboygan Falls Utilities	177,847	175,558	8,374	8,374	YES	20,056	11.42	11.28	2.77	4.77	8.77	-	20,056	N/A	11.28
Shullsburg Electric Utility	11,184	10,125	488	488	YES	1,270	12.54	11.36	2.82	4.82	8.82	-	1,270	N/A	11.36
Spooner Municipal Utilities	32,943	33,180	2,838	2,838	YES	4,834	14.57	14.67	6.55	8.55	12.55	-	4,834	N/A	14.67
Stratford Mun Wtr & Elec Utility	18,279	17,442	926	926	YES	1,752	10.04	9.58	3.31	5.31	9.31	-	1,752	N/A	9.58
Superior Wtr Light & Pwr Co	671,417	663,515	30,057	30,057	YES	30,057	4.53	4.48	2.53	4.53	8.53	-	30,057	N/A	4.48
Trempealeau Mun Elc & Wtr Util	13,557	13,167	1,156	1,157	YES	2,080	15.80	15.34	6.78	8.78	12.78	-	2,080	N/A	15.34
Washington Island Cooperative	9,094	9,179	491	491	YES	948	10.33	10.42	3.35	5.35	9.35	-	948	N/A	10.42
Westfield Milling & Elec Co	13,201	12,975	624	624	YES	1,559	12.02	11.81	2.81	4.81	8.81	-	1,559	N/A	11.81
Wisconsin Dells Mun Elec Util	56,225	58,311	2,851	2,851	YES	6,436	11.04	11.45	2.89	4.89	8.89	-	6,436	N/A	11.45
Wisconsin Electric Power Co	24,284,599	24,476,856	1,045,162	1,045,162	YES	909,659	3.72	3.75	2.27	4.27	8.27	167,100	1,076,759	15.52	4.43
Wisconsin Power & Light	10,302,478	10,172,622	537,114	537,114	YES	1,180,636	11.61	11.46	3.28	5.28	9.28	32,575	1,213,211	2.69	11.78
WPPI Energy*	4,851,746	4,833,749	301,626	306,440	YES	749,780	15.51	15.45	4.24	6.24	10.24	92,418	842,198	10.97	17.36
Wisconsin Public Service Corp	10,601,669	10,422,531	598,253	598,254	YES	1,029,912	9.88	9.71	3.74	5.74	9.74	12,533	1,042,445	1.20	9.83
Wonewoc Electric & Water Util	5,058	4,997	234	234	YES	595	11.91	11.76	2.69	4.69	8.69	-	595	N/A	11.76
WISCONSIN TOTAL	68,618,486	68,442,021	3,811,863	3,832,137.9	YES	6,094,154	8.90	8.88	3.56	5.57	9.57	454,960	6,549,114	6.95	9.54

Appendix C: 2011 Renewable Energy Sales by State and Resource (MWh)

Includes both RPS Renewable Energy Sales and Green Pricing Sales

Electric Provider/Aggregator*	WI Hydro	WI Wind	WI Biomass - Landfill gas	WI Biomass - Biogas	WI Biomass - Refuse-derived fuel	WI Biomass - & Wood Waste	WI Biomass - Wood	Biomass - Other	WI Solar	WI - Other	WI Subtotal	Non WI Hydro	Non WI Wind	Non WI Biomass - Landfill gas	Non WI Biomass - Biogas	Non WI Biomass - Refuse-derived fuel	Non WI Biomass - Waste	Non WI Biomass - Wood & Wood	Other	Non-WI Biomass - Other	Non WI - Solar	Non WI - Other	Non WI - Subtotal	Grand Total	
Adams-Columbia Electric Coop	9,962		8,878	1,377	165	-	565	-	148	-	21,095	-	33,785	-	-	-	-	-	-	-	-	-	-	33,785	54,880
Bangor Municipal Utility	618	-	-	-	-	-	-	-	-	-	618	-	2,292	36	-	761	-	305	-	-	-	-	-	3,394	4,012
Barron Light & Water Utility	2,027	-	-	-	-	-	-	-	-	-	2,027	-	6,771	107	-	2,249	-	901	-	-	-	-	-	10,028	12,055
Belmont Mun Water & Elect Util	421	374	48	6	-	24	-	-	-	-	873	-	1,558	-	-	-	-	-	-	-	-	-	-	1,558	2,431
Benton Mun Elec & Water Util	90	87	-	-	-	5	-	-	-	-	182	-	446	-	-	-	-	-	-	-	-	-	-	446	628
Black Earth Electric Utility	320	290	39	4	-	18	-	-	-	-	671	-	1,239	-	-	-	-	-	-	-	-	-	-	1,239	1,910
Bloomer Electric Utility	1,122	-	-	-	-	-	-	-	-	-	1,122	-	4,160	66	-	1,382	-	554	-	-	-	-	-	6,162	7,284
Cadott Light & Water Mun Util	304	-	-	-	-	-	-	-	-	-	304	-	1,126	18	-	374	-	150	-	-	-	-	-	1,668	1,972
Central Wisconsin Elec Coop	2,059	1,821	275	33	-	117	-	-	-	-	4,305	-	7,102	-	-	-	-	-	-	-	-	-	-	7,102	11,407
Centuria Municipal Electric Util	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Consolidated Water Power Co	242,745	-	-	-	-	-	-	-	-	-	242,745	-	-	-	-	-	-	-	-	-	-	-	-	-	242,745
Cornell Mun Water & Elec Util	299	-	-	-	-	-	-	-	-	-	299	-	1,108	17	-	368	-	148	-	-	-	-	-	1,641	1,940
Dahlberg Light & Power Co	1,920	-	-	-	-	-	-	-	-	-	1,920	-	-	-	-	-	-	-	-	-	-	-	-	-	1,920
Dairyland Power Cooperative	41,230	85	24,024	12,038	-	147,287	-	54	-	-	224,717	-	82,382	23,756	-	-	-	-	-	-	-	-	-	106,139	330,856
East Central Energy	-	-	-	-	-	-	-	-	-	-	-	-	1,705	-	-	-	-	-	-	-	-	-	-	1,705	1,705

Electric Provider/Aggregator*	WI Hydro	WI Wind	WI Biomass - Landfill gas	WI Biomass - Biogas	WI Biomass - Refuse-derived fuel	WI Biomass - & Wood Waste	Biomass - Wood	Biomass - Other	WI Solar	WI - Other	WI Subtotal	Non WI Hydro	Non WI Wind	Non WI Biomass - Landfill gas	Non WI Biomass - Biogas	Non WI Biomass - Refuse-derived fuel	Non WI Biomass - Waste	Non WI Biomass - Wood & Wood	Other Non WI Biomass - Wood & Wood	Non WI - Solar	Non WI - Other	Non WI - Subtotal	Grand Total
Elkhorn Light & Water	2,342	2,072	316	37	-	133	-	-	-	-	4,900	-	8,055	-	-	-	-	-	-	-	-	8,055	12,955
Great Lakes Utilities	10,766	18,927	8,251	170	-	221	2,051	5	-	-	40,391	2,889	14,161	-	-	-	-	-	-	-	-	17,050	57,441
Gresham Mun Light & Pwr Util	411	368	47	6	-	24	-	-	-	-	856	-	1,536	-	-	-	-	-	-	-	-	1,536	2,392
Hazel Green Municipal Utility	155	140	16	-	-	9	-	-	-	-	320	-	659	-	-	-	-	-	-	-	-	659	979
Madison Gas & Electric Co	-	63,235	31,690	-	-	-	-	908	-	-	95,833	-	312,812	-	-	-	-	-	-	-	-	312,812	408,645
Manitowoc Public Utilities	3,348	8,507	1,115	20	-	26	18,068	243	-	-	31,327	700	1,696	-	-	-	-	-	-	-	-	2,396	33,723
Marshfield Elec & Water Dept	7,848	16,068	5,748	-	-	-	-	-	-	-	29,664	972	-	-	-	-	-	-	-	-	-	972	30,636
Mazomanie Electric Utility	585	522	70	6	-	34	-	-	-	-	1,217	-	2,125	-	-	-	-	-	-	-	-	2,125	3,342
Medford Electric Utility	2,853	-	-	-	-	-	-	-	-	-	2,853	-	10,578	168	-	3,515	-	1,409	-	-	-	15,670	18,523
North Central Power Co Inc	7,265	-	-	-	-	-	-	-	-	-	7,265	-	211	-	3	66	25	-	-	-	-	305	7,570
Northern States Power Co WI	134,248	-	-	-	1,733	161,012	-	-	-	-	296,993	4,655	555,367	9,012	-	17,103	-	78,404	-	-	-	664,541	961,534
Northwestern WI Elec Co	10,550	-	-	-	-	-	-	-	-	-	10,550	-	1,440	-	22	454	169	-	-	-	-	2,085	12,635
Oconto Electric Coop	7,677	5,592	2,004	-	-	-	-	-	-	-	15,273	336	-	-	-	-	-	-	-	-	-	336	15,609
Pardeeville (Village of) Elec Util	401	354	45	6	-	22	-	-	-	-	828	-	1,471	-	-	-	-	-	-	-	-	1,471	2,299
Pioneer Power & Light Co	350	315	42	4	-	21	-	-	-	-	732	-	1,334	-	-	-	-	-	-	-	-	1,334	2,066
Princeton Mun Wtr & Elec Util	211	190	23	-	-	13	-	-	-	-	437	-	861	-	-	-	-	-	-	-	-	861	1,298
Rice Lake Mun Wtr & Elec Util	3,537	-	-	-	-	-	-	-	-	-	3,537	-	13,113	208	-	4,357	-	1,746	-	-	-	19,424	22,961
Rock Energy Coop	5,618	4,969	772	92	-	319	-	-	-	-	11,770	-	19,139	-	-	-	-	-	-	-	-	19,139	30,909

Electric Provider/Aggregator*	WI Hydro	WI Wind	WI Biomass - Landfill gas	WI Biomass - Biogas	WI Biomass - Refuse-derived fuel	WI Biomass - & Wood Waste	Biomass - Wood	Biomass - Other	WI Solar	WI - Other	WI Subtotal	Non WI Hydro	Non WI Wind	Non WI Landfill gas	Non WI Biomass - Biogas	Non WI Biomass - Refuse-derived fuel	Non WI Biomass - Waste	Non WI Biomass - Wood & Wood	Other	Non-WI Biomass - Wood	Non WI - Solar	Non WI - Other	Non WI - Subtotal	Grand Total
Sauk City Mun Wtr & Light Util		650	571	81	6	-	37	-	-	-	1,345	-	2,307	-	-	-	-	-	-	-	-	-	2,307	3,652
Sheboygan Falls Utilities	3,642	3,219	493	58	-	207	-	-	-	-	7,619	-	12,437	-	-	-	-	-	-	-	-	-	12,437	20,056
Shullsburg Electric Utility	207	185	23	-	-	12	-	-	-	-	427	-	843	-	-	-	-	-	-	-	-	-	843	1,270
Spooner Municipal Utilities	745	-	-	-	-	-	-	-	-	-	745	-	2,760	44	-	917	-	368	-	-	-	-	4,089	4,834
Stratford Mun Wtr & Elec Utility	444	924	324	-	-	-	-	-	-	-	1,692	60	-	-	-	-	-	-	-	-	-	-	60	1,752
Superior Wtr Light & Pwr Co	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30,057	-	-	-	-	30,057	30,057
Trempealeau Mun Elc & Wtr Util	321	-	-	-	-	-	-	-	-	-	321	-	1,187	19	-	395	-	158	-	-	-	-	1,759	2,080
Washington Island Cooperative	240	492	180	-	-	-	-	-	-	-	912	36	-	-	-	-	-	-	-	-	-	-	36	948
Westfield Milling & Elec Co	260	232	24	-	-	16	-	-	-	-	532	-	1,027	-	-	-	-	-	-	-	-	-	1,027	1,559
Wisconsin Dells Mun Elec Util	1,155	1,019	150	17	-	66	-	-	-	-	2,407	-	4,029	-	-	-	-	-	-	-	-	-	4,029	6,436
Wisconsin Electric Power Co	50,623	376,828	227,793	11,427	-	-	-	-	1,608	-	668,279	227,696	180,784	-	-	-	-	-	-	-	-	-	408,480	1,076,759
Wisconsin Power & Light	216,425	212,108	35,757	5,918	-	12,260	-	988	-	-	483,456	-	729,755	-	-	-	-	-	-	-	-	-	729,755	1,213,211
WPPI Energy	201,538	263,192	41,599	4,548	12	7,428	-	373	-	-	518,690	14,393	309,115	-	-	-	-	-	-	-	-	-	323,508	842,198
Wisconsin Public Service Corp	250,623	67,109	74,813	41,795	-	58,630	-	-	-	-	492,970	50,450	499,025	-	-	-	-	-	-	-	-	-	549,475	1,042,445
Wonewoc Electric & Water Util	88	80	-	-	-	5	-	-	-	-	173	-	422	-	-	-	-	-	-	-	-	-	422	595
TOTAL per State and Resource	1,228,243	1,058,753	457,139	76,356	1,745	388,511	20,119	4,327	-	-	3,235,192	302,187	2,831,923	33,451	25	31,941	30,251	84,143	-	-	-	-	3,313,922	6,549,114
% of Total 2011 Renewables	18.8%	16.2%	7.0%	1.2%	0.0%	5.9%	0.3%	0.1%	0.0%	0.0%	49.4%	4.6%	43.2%	0.5%	0.0%	0.5%	0.5%	1.3%	0.0%	0.0%	0.0%	0.0%	50.6%	100.0%

Appendix D: 2011 Statistics Generated from Electric Provider Data

Includes both RPS Renewable Energy Sales and Green Pricing Sales

2011 Total Energy Sales to Wisconsin Retail Customers (renewable and nonrenewable)

	(MWh)	% of Total Energy Sales
2011 Total Wisconsin Retail Energy Sales	68,618,486	100.0%

Renewable Energy Sales by State

State	(MWh)	% of Total Energy Sales	% of Renewable Energy Sales
TOTAL Renewable Energy Sales from Wisconsin	3,235,192	4.7%	49.4%
TOTAL Renewable Energy Sales from Other States	3,313,922	4.8%	50.6%
TOTAL Renewable Energy Sales from ALL STATES	6,549,114	9.5%	100.0%

Renewable Energy Sales by Renewable Resource

Renewable Energy Resource	(MWh)	% of Total Energy Sales	% of Renewable Energy Sales
Wind	3,890,677	5.7%	59.4%
Hydro	1,530,430	2.2%	23.4%
Biomass	1,123,680	1.6%	17.2%
Solar	4,327	0.0%	0.1%
TOTAL Renewable Energy Sales from ALL RESOURCES	6,549,114	9.5%	100.0%

Biomass Energy Sales Broken Down

Biomass Type	(MWh)	% of Total Sales	% of Renewable Sales
Refused-derived	33,686	0.0%	0.5%
Biogas	76,381	0.1%	1.2%
Other*	104,262	0.2%	1.6%
Wood or wood waste	418,762	0.6%	6.4%
Landfill gas	490,590	0.7%	7.5%
TOTAL from Biomass	1,123,680	1.6%	17.2%

*Other biomass represents paper pellets, agriculture products, and animal waste

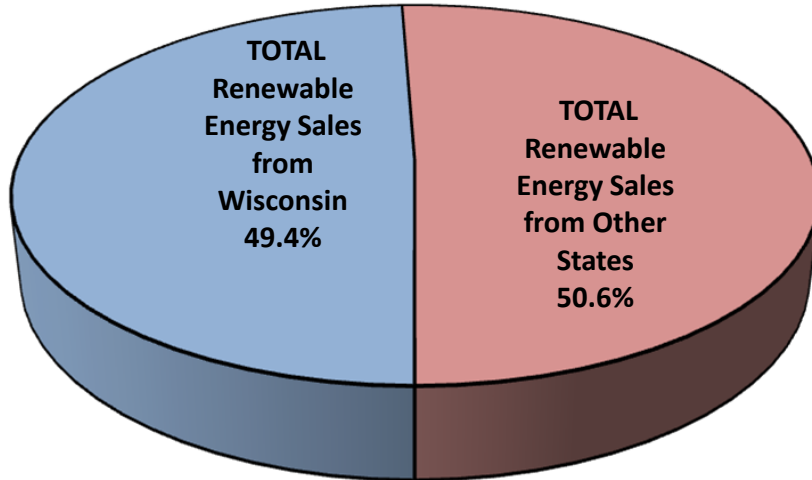
Renewable Energy Sales by State and Renewable Resource

State / Renewable Resource	(MWh)	% of Total Energy Sales	% of Renewable Energy Sales among WI Resources	% of Renewable Energy Sales among Non WI Resources	% of Renewable Energy Sales among ALL STATE Resources
WI Wind	1,058,753	1.5%	32.7%		16.2%
WI Hydro	1,228,243	1.8%	38.0%		18.8%
WI Biomass	943,868	1.4%	29.2%		14.4%
WI Solar	4,327	0.0%	0.1%		0.1%
Non WI Wind	2,831,923	4.1%		85.5%	43.2%
Non WI Hydro	302,187	0.4%		9.1%	4.6%
Non WI Biomass	179,811	0.3%		5.4%	2.7%
Non WI Solar	-	0.0%		0.0%	0.0%
TOTAL Renewable Energy Sales from ALL STATES AND RESOURCES	6,549,114	9.5%			100.0%

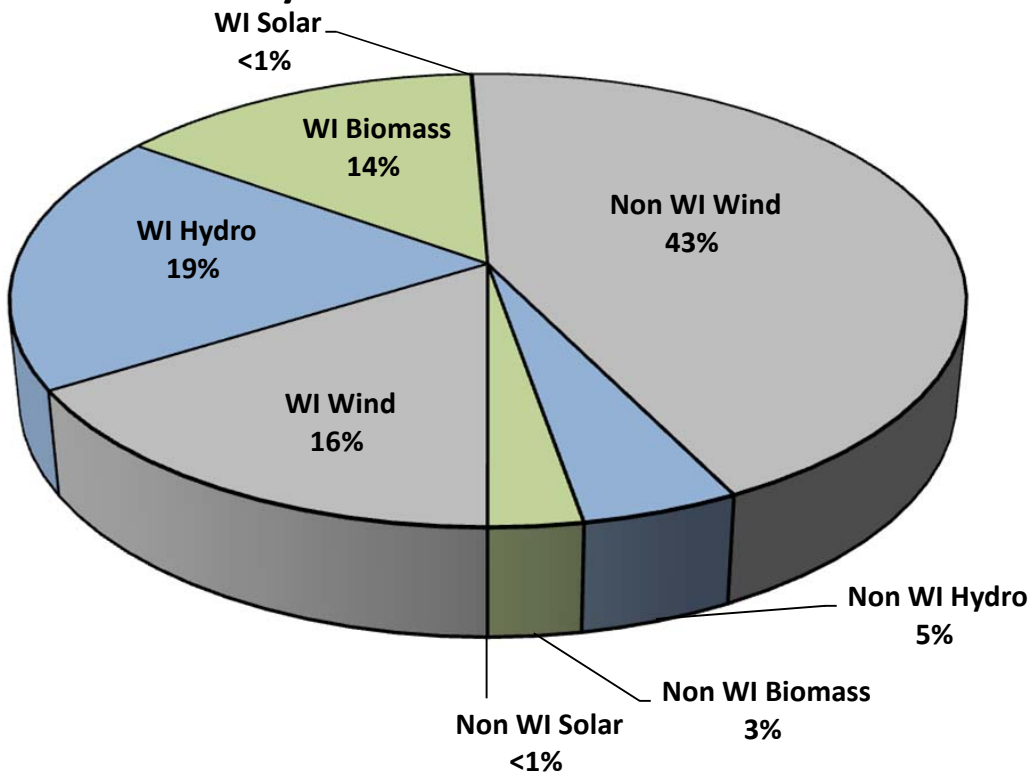
Appendix E: 2011 Figures of Statistics Generated from Electric Provider Data

Includes both RPS Renewable Energy Sales and Green Pricing Sales

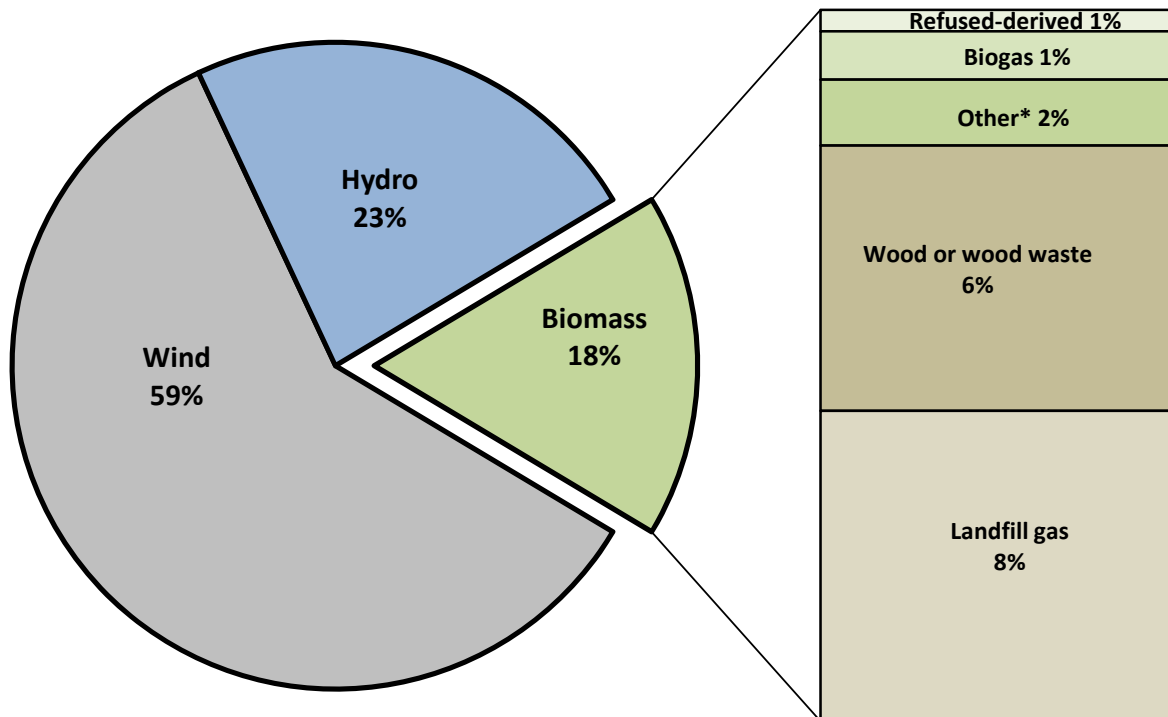
2011 Renewable Energy Sales by State



2011 Renewable Energy Sales by State and Resource

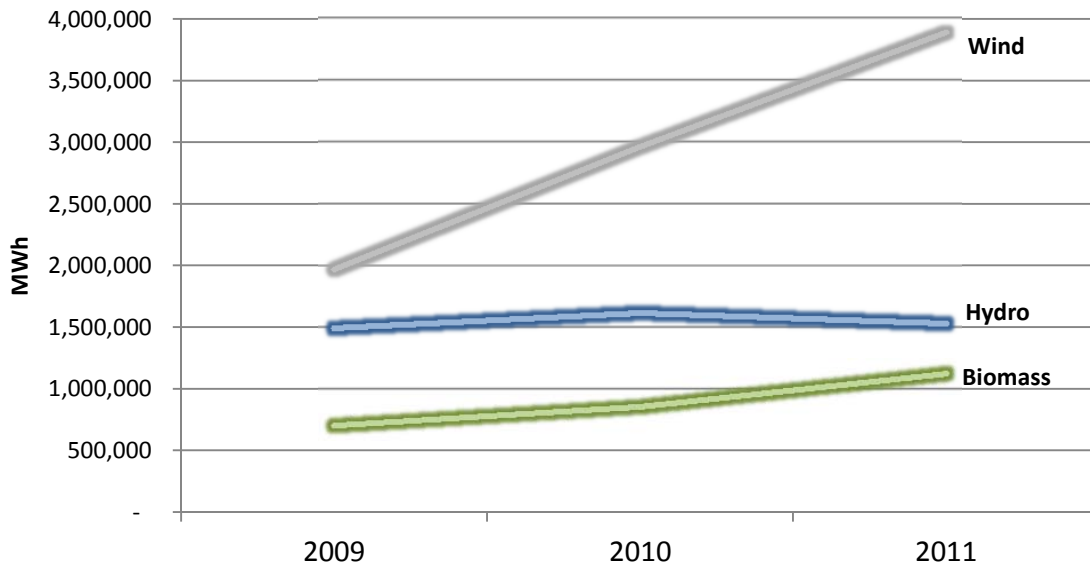


2011 Renewable Energy Sales by Resource

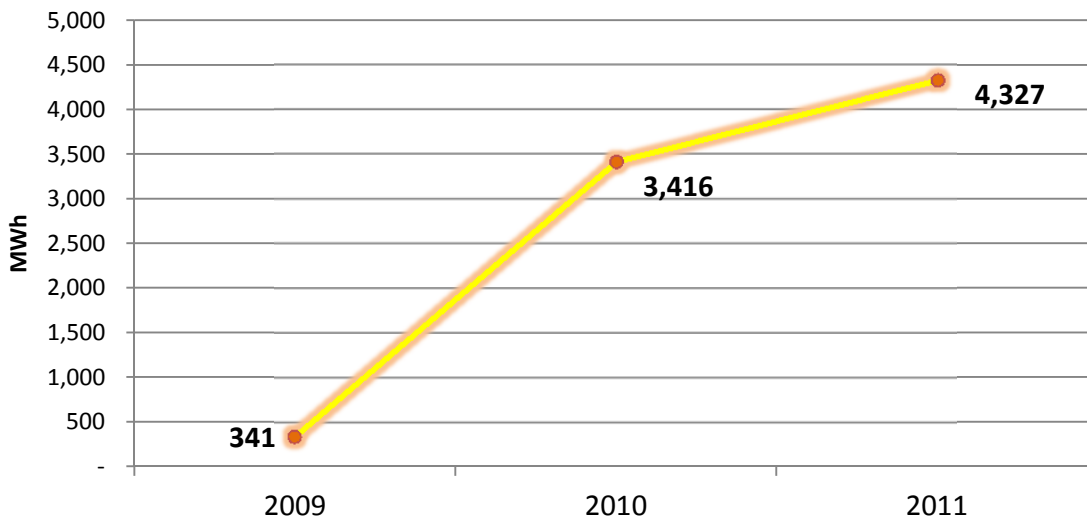


*Other biomass represents paper pellets, agriculture products, and animal waste

Renewable Energy Sales by Renewable Resource (2009-2011)*



Renewable Energy Sales from Solar Photovoltaic (2009-2011)*



* 2009 data do not contain all renewable energy sales that fall under utility voluntary green pricing programs. None of these data include distributed generation that was used directly on site without being sold by a Wisconsin