WIND ON THE WIRES COMMENTS ON THE ILLINOIS POWER AGENCY'S DRAFT POWER PROCUREMENT PLAN – August 16, 2010

Wind on the Wires appreciates the time and effort the Illinois Power Agency has put into collecting and analyzing the necessary information to develop the plan for procurement in 2011. After reviewing the Draft 2011 Procurement Plan and contemplating the best way to ensure environmentally sustainable electric service, Wind on the Wires recommends that a portion of the one year RECs the Illinois Power Agency intends to procure in 2011 be procured as five year RECs on behalf of both the Ameren Illinois Utilities and Commonwealth Edison Company.

BACKGROUND

On August 16, 2010, the Illinois Power Agency ("IPA") made its Draft Power Procurement Plan publicly available on its website, as required by 220 ILCS 5/16-111.5 (d)(2). The plan lays out a procurement strategy for both Commonwealth Edison ("ComEd") and The Ameren Illinois Utilities ("Ameren"). Pursuant to 20 ILCS 3855/1-75, the Procurement Plan is to be designed "to ensure adequate, reliable, affordable, efficient, and environmentally sustainable electric service at the lowest total cost over time..." The IPA has requested comment by September 15, 2010.

COMMENTS

The RPS Volume Target in 2011 and in 2012 has Room to Allow for a Procurement of 5 Year RECs

The Draft Procurement Plan proposes to procure one-year RECs for Ameren and for ComEd. Instead, WOW proposes that the IPA procure a mix of one and five year

RECs. Key factors that need to be looked at in making such a change are the RPS Volume Target and the renewable resources cost effectiveness test. Given the utilities supply forecasts for the next five years, WOW estimates the RPS Volume Target will increase to just less than 4.6 million in 2015-2016.

			Ameren RPS Volume Targets		ComEd RPS Volume Targets		
Planning Year	Reference Year	Planning Year RPS % Target	Reference Year Delivered Volume (MWh)	Planning Year RPS Volume Target (MWh)	Reference Year Delivered Volume (MWh)	Planning Year RPS Volume Target (MWh)	
2008-2009	2006-2007	2.00%	20,719,607	414,392	39,802,463	796,742	
2009-2010	2007-2008	4.00%	17,984,564	719,383	39,109,145	1,576,899	
2010-2011	2008-2009	5.00%	17,217,197	860,860	37,740,282	1,804,795	**Total RECs**
2011-2012	2009-2010	6.00%	15,869,084	952,145	35,284,241	2,117,054	3,069,199
2012-2013	2010-2011	7.00%	15,515,203	1,086,064	31,402,974	2,198,208	3,284,272
2013-2014	2011-2012	8.00%	14,966,120	1,197,290	31,183,782	2,494,703	3,691,993
2014-2015	2012-2013	9.00%	14,849,085	1,336,418	31,435,435	2,829,189	4,165,607
2015-2016	2013-2014	10.00%	14,493,895	1,449,390	31,537,286	3,153,729	4,603,119
2016-2017	2014-2015	11.50%	14,042,845	1,614,927	31,647,351	3,639,445	5,254,372
2017-2018	2015-2016	13.00%	13,584,768	1,766,020	31,734,381	4,125,470	5,891,490
2018-2019	2016-2017	14.50%	13,679,657	1,983,550	31,956,046	4,633,627	6,617,177
2019-2020	2017-2018	16.00%	13,775,210	2,204,034	32,179,259	5,148,681	7,352,715

Our forecast starts with the Reference Year Delivered Volume for 2009-10 and escalates it using the rate of growth from delivery year-to-delivery year as reflected in the Supply Requirements Forecasts from the utilities. The data for the 2009-2010

period is not public, so we need to use a forecasted volume for the 2009 to 2011 period. The utility forecasts include a gap in the 2009 to 2011 period. To calculate the escalation rate from 2009-2010 to 2010-2011 we used the System Supply Requirements Forecasts the utilities provided for the 2009-2010 delivery year and adjusted the numbers to match the 2010-2011 System Supply Requirements Forecast volumes. The adjustment was made through the use of a factor that equated the sum of the on-peak and off-peak values from the 2009-2010 Procurement Plan System Supply Requirements Forecast[1] to those of the 2011-2012 Procurement Plan System Supply Requirements Forecast for the 2010-2011 delivery year. That factor was then used to adjust the 2009-2010 data to the 2010-2011 utility forecasts.

In 2012, the IPA is required to start purchasing solar RECs. Therefore, the number of SRECs to be procured for the utilities needs to be estimated. The most conservative approach is to assume the SRECs will be procured up to the minimum statutory amount for both Ameren and ComEd. In doing so, we forecast the SREC Volume Target to be:

[1] 2009 Procurement Plan, Attachments E and H (Oct. 21, 2008) and 2010 Procurement Plan, Appendix E (Sept. 30, 2009).

SREC Volume Targets

Planning Year	Reference Year	Planning Year RPS % Target	Solar Carve Out	Ameren RPS Volume Targets: Planning Year RPS Volume Target (MWh)	Ameren RPS Volume Targets: Planning Year SREC Volume Target (MWh)	ComEd RPS Volume Targets: Reference Year Delivered Volume (MWh)	ComEd RPS Volume Targets: Planning Year RPS Volume Target (MWh)	Total SRECs
2011-2012	2009-2010	6.00%	0.00%	952,145	0	2,117,054	0	0
2012-2013	2010-2011	7.00%	0.50%	1,086,064	5,430	2,198,208	10,991	16,421
2013-2014	2011-2012	8.00%	1.50%	1,197,290	17,959	2,494,703	37,421	55,380
2014-2015	2012-2013	9.00%	3.00%	1,336,418	40,093	2,829,189	84,876	124,968
2015-2016	2013-2014	10.00%	6.00%	1,449,390	86,963	3,153,729	189,224	276,187
2016-2017	2014-2015	11.50%	6.00%	1,614,927	96,896	3,639,445	218,367	315,262
2017-2018	2015-2016	13.00%	6.00%	1,766,020	105,961	4,125,470	247,528	353,489
2018-2019	2016-2017	14.50%	6.00%	1,983,550	119,013	4,633,627	278,018	397,031
2019-2020	2017-2018	16.00%	6.00%	2,204,034	132,242	5,148,681	308,921	441,163

In calculating the residual volume of the RPS requirement, another factor that needs to be accounted for are multi-year renewable energy products procured in prior years and whose contract term is still effective. In its 09-0373 Order, the Illinois Commerce Commission approved the procurement of a long term renewable energy and REC product to be delivered from 2012 to 2032 in the amount of 600,000 MWh/year for Ameren and 1.4 million MWh/year for ComEd. This procurement has not yet occurred, but the most conservative analysis would be to assume it is fully procured.

Given the preceding assumptions there is still sufficient residual volume in the RPS Volume Target to procure both one year and five year RECs in the 2011

procurement. The tables below account for the impact of the SRECs, the 20 year product whose delivery starts in 2012 and our proposed five year RECs for Ameren and ComEd. The year with the smallest Volume Target will be the 2012-2013 period. Our proposal leaves between 22% and 26% of the Planning Year RPS Volume Target (shown as 'Residual Volume Adjusted for 5 Yr RECs') for procurement of one-year RECs in the 2012-2013 procurement.

Ameren

Planning Year	Planning Year RPS Volume Target (MWh)	Planning Year SREC Volume Target (MWh)	Residual Volume Adjusted for SRECs	Multi-Year REC Volumes Procured in 2010	Residual Volume Adjusted for Multi-Yr RECs	PROPOSED -- 5 Year RECs	Residual Volume Adjusted for 5 Yr RECs
2011-2012	952,145	0	952,145	600,000	352,145	200,000	152,145
2012-2013	1,086,064	5,430	1,080,634	600,000	480,634	200,000	280,634
2013-2014	1,197,290	17,959	1,179,331	600,000	579,331	200,000	379,331
2014-2015	1,336,418	40,093	1,296,325	600,000	696,325	200,000	496,325
2015-2016	1,449,390	86,963	1,362,427	600,000	762,427	200,000	562,427
2016-2017	1,614,927	96,896	1,518,031	600,000	918,031	0	918,031

ComEd

Planning Year	Planning Year RPS Volume Target (MWh)	Planning Year SREC Volume Target (MWh)	Residual Volume Adjusted for SRECs	Multi-Year REC Volumes Procured in 2010	Residual Volume Adjusted for Multi-Yr RECs	PROPOSED -- 5 Year RECs	Residual Volume Adjusted for 5 Yr RECs
2011-2012	2,494,703	0	2,494,703	1,400,000	1,094,703	800,000	294,703
2012-2013	2,829,189	10,991	2,818,198	1,400,000	1,418,198	800,000	618,198
2013-2014	3,153,729	37,421	3,116,308	1,400,000	1,716,308	800,000	916,308
2014-2015	3,639,445	84,876	3,554,569	1,400,000	2,154,569	800,000	1,354,569
2015-2016	4,125,470	189,224	3,936,246	1,400,000	2,536,246	800,000	1,736,246
2016-2017	4,633,627	218,367	4,415,260	1,400,000	3,015,260	0	3,015,260

As seen in the table above, there is plenty of residual volume in the RPS Volume Target for the IPA to procure 200,000 and 800,000 five year RECs for Ameren and ComEd respectively.

To Ensure the Development of Environmentally Sustainable Electric Service for Illinois a Longer Perspective on Renewable Energy Procurement is Needed

The procurement plan is designed "to ensure adequate, reliable, affordable, efficient, and environmentally sustainable electric service at the lowest total cost over time . ." 2011 Draft Procurement Plan, first sentence. The focus of sustainability is to manage the environmental consequences of electricity production to "meet the needs of the present without compromising the ability of future generation to meet their own needs"[2]. Thus, a plan should have an eye toward minimizing fossil-fuel generations

[2] *Our Common Future,* World Commission on the Environment Development (1987).

impact on land, water, air, habitat and communities so as to conserve our environment for the citizens of Illinois, and nearby states for future generations. The procurement needs to be managed in a way so that the environmental consequences of fossil fuels are consistently reduced or offset by the effects of better management, better technology and increased amount of renewable resources. Another benefit of renewable resources is the low to no fuel cost. Thereby hedging the utilities overall exposure to variability in fuel prices. Overall, increasing the amount of multi-year contracts for renewable shows good stewardship of not only the environment but citizen's pocketbooks.

This requires a long term vision. Part of that vision is set by statute – procure renewable energy resources or their RECs for at least 25% of the eligible customer load by 2025. Cost is always a focal point of an energy procurement and the Illinois General Assembly has provided guidelines on that. Renewable energy resources are not subject to the lowest total cost over time standard, but are to meet the guidelines set forth in Section 1-75(c): [a] prices are not to exceed benchmarks based on market prices for renewable resources in the region, and [b] the total cost of the renewable energy resources being procured for a delivery year cannot increase the kWh rate of eligible customers above a statutorily set percentage increase. (*See* 20 ILCS 3855/1-75(c)(1) and (2)). Thus, the General Assembly has acknowledged that Illinois ratepayers should be willing to pay extra to have zero or low emission generation.

The IPA and ICC need to take steps to conserve energy resources in a fiscally responsible manner. This requires a plan to ensure growth of renewable generation at cost levels below the cost effective standard, as defined under the PUA. (*See* 20 ILCS

3855/1-75(c)(2)). In doing this the IPA needs a long term goal for procuring renewable products of varying type and contract length. There is something to the motto of 'buy low', especially when the price trend of fuel is known to go up[3]. That is why the decision to procure long term renewable energy and RECs in 2010 was a good decision.

a. Buying RECs v. Buying Renewable Energy

There needs to be a balance between longer-term products and shorter-term products. Renewable resources should have its' own portfolio with products laddered in over a period of time, similar to the way the IPA treats standard wholesale block energy products. A mix of renewable products of varying duration would allow for the growth of renewable resources in a cost effective manner and hedge against price volatility. As more renewable generation is built there will be greater competition which will drive the price down to market price or lower.

The procurement plans from 2008 to 2010 have heavily leaned toward procuring one year RECs. RECs yield a fraction of the revenue that a developer obtains from the sale of energy. Development of wind resources is usually done by independent power producers who do not have a captured rate base to rely upon as a revenue stream. Typically, they rely on longer-term contracts to encourage cost-effective development. Without a long-term contract the developer has to choose between operating as a merchant project – which is next to impossible to receive financing for at this time – or postponing development until a long-term contract is available. Projects financed with multi-year contracts have lower risk for lenders, reducing the cost of capital. Also,

[3] *Annual Energy Outlook 2010: Electricity Projections,* EIA stating "After 2011, [electricity] prices rise to 10.2 cents per kilowatthour in 2035 (Figure 60) in response to rising fuel prices and the construction of new power plants as demand rises." (http://www.eia.doe.gov/oiaf/aeo/index.html, viewed 9/15/2010)

longer contracts can be obtained directly from project developers, thereby reducing the mark-up and marketing costs of third party REC traders (third party REC traders do play a helpful role in facilitating markets, this comment is not critical of their existence *per se* but rather of the exclusive reliance on short term REC markets). In contrast, continued use of one year RECs to fulfill the RPS results in developers sitting on the sidelines while the RPS requirements increase. The result is that renewable resource development will not keep pace with the increasing demand and the costs of renewable resources will increase over time.[4] Ultimately, the failure to procure contracts of sufficient length to support construction of renewable resources at a pace equal to the RPS will increase the cost of renewable resources in future procurements.

Therefore, from a macroeconomic level, a plan that balances short term and long term procurements of both RECs and renewable energy will balance cost and the development of windfarms. As more farms are built there will be greater competition which will drive the price down to market levels. Lower cost renewable resources increase the likelihood of future procurements receiving bids that are cost effective and increase the likelihood of Illinois reaching its RPS.

b. Existing Midwest ISO and PJM Forecasts Reveal that Renewable Energy Resources will not Keep Pace with RPS Requirements

Procuring one year RECs is one option of meeting the cost effectiveness test of the statute but it doesn't bring wind farms to Illinois – which creates construction and permanent jobs and it provides a revenue stream to the economy through land leases, property and income taxes. In addition, buying short-term RECs instead of developing

[4] *See*, Peter Toomey and Eric Thumma, *Wanted: Stability in Restructured Electricity Markets*, North American Windpower (Feb. 2010).

a renewable resources portfolio with products of mixed duration will not ensure the long term price stability of renewable resources.

The RPS in Illinois includes a cost effectiveness test that exerts downward pressure on the cost of renewable resources. The RPS increases annually out to 2025, thus sponsoring the increase in development of renewable generation, but the cost-effectiveness test doesn't keep pace. It stops increasing after 2011. To offset that pressure, after 2012 the statute allows for the procurement of resources from a wider pool of sources – from both Illinois and adjacent states. Nonetheless, the IPA should still take steps to foster the growth of renewable generation. The Illinois General Assembly has approved in recent years a number of statutes supporting renewable energy growth within Illinois. Moreover, it makes economic sense for state agencies to take steps that increase jobs and the tax base of their state.

Within PJM and the Midwest ISO there are seventeen states and the District of Columbia that have RPS requirements. Some have requirements increasing annually out to as far as 2026. If there is going to be enough renewable resources to meet the RPS mandates and goals of those states, steps need to be taken beyond business as usual to ensure development. As explained below, renewable resources will fail to keep pace with the PJM/MISO state RPS's as soon as 2016.

Eleven states in the Midwest ISO have RPS requirements and all of Illinois' adjacent states, but for Indiana and Kentucky, have RPS standards. The table below reflects the RPS standards in the Midwest ISO states.

	WI	MN (w/o Xcel)	Xcel MN	IL	MI	OH	MO	MT	PA	SD	ND	IA (MW)
2015	10.0%	12.0%	18.0%	10.0%	10.0%	3.5%	5.0%	15.0%	5.5%	10.0%	10.0%	105
2016	10.0%	17.0%	25.0%	11.5%	10.0%	4.5%	5.0%	15.0%	6.0%	10.0%	10.0%	105
2017	10.0%	17.0%	25.0%	13.0%	10.0%	5.5%	5.0%	15.0%	6.5%	10.0%	10.0%	105
2018	10.0%	17.0%	25.0%	14.5%	10.0%	6.5%	10.0%	15.0%	7.0%	10.0%	10.0%	105
2019	10.0%	17.0%	25.0%	16.0%	10.0%	7.5%	10.0%	15.0%	7.5%	10.0%	10.0%	105
2020	10.0%	20.0%	30.0%	17.5%	10.0%	8.5%	10.0%	15.0%	8.0%	10.0%	10.0%	105
2021	10.0%	20.0%	30.0%	19.0%	10.0%	9.5%	15.0%	15.0%	8.0%	10.0%	10.0%	105
2022	10.0%	20.0%	30.0%	20.5%	10.0%	10.5%	15.0%	15.0%	8.0%	10.0%	10.0%	105
2023	10.0%	20.0%	30.0%	22.0%	10.0%	11.5%	15.0%	15.0%	8.0%	10.0%	10.0%	105
2024	10.0%	20.0%	30.0%	23.5%	10.0%	12.5%	15.0%	15.0%	8.0%	10.0%	10.0%	105
2025	10.0%	25.0%	30.0%	25.0%	10.0%	12.5%	15.0%	15.0%	8.0%	10.0%	10.0%	105

Source: Midwest ISO, Draft MTEP10 Report

In addition to the eleven states identified above, there seven states and D.C. in PJM that have a RPS. Using Energy Information Administration ("EIA") retail sales data from 2008 and a forecasted rate of growth based on data from "EIAs Annual Energy Outlook for 2010" the estimated RPS requirement for the Midwest ISO and PJM states would be approximately 99,353 GWH in 2016 and continue to increase to approximately 136,981 GWH in 2020. See Attachment A.

Our analysis below indicates that the renewable energy capacity that will be available over the next ten years will not be able to keep pace with this demand for renewable resources. The EIA tallied the renewable generation capacity in the

MISO/PJM states in 2008 as 16,404 MW[5]. The table below lists the Midwest ISO states and the EIA data from 2008. States the IPA considers to be adjacent states are tabbed in green and tally 6,416 MW of renewable energy capacity. There was a large growth in wind development in 2009, so it is beneficial to include in the table below the most recent wind data as a comparison. As of the end of July 2010 there is 5,846 MW of installed wind capacity in the Adjacent States.[6]

	WI	MN	IN	IL	KY	MI	OH	MO	MT	PA	SD	ND	IA
EIA 2008[5]	1.003	2,008	229	1,145	886	773	214	734	2,960	1,619	1,656	1,272	2,791
AWEA Wind 2010[6]	449	1,797	1,127	1,848	0	143	10	457	386	748	412	1,222	3,670

Next, we forecast the growth of renewable generation in both the Midwest ISO and PJM from 2010 and 2009, respectively. From 2010 to 2019, the Midwest ISO forecasts a 40.6% growth in renewable generation, yielding a total increase of 3,148 MW.[7] The Midwest ISO estimates the renewable generation capacity in its footprint in 2019 as being 13,962 MW. That data is reflected in the blue portion of the table below. PJM, in its "2009 RTEP Report", identified the capacity of renewable generation in-service and the capacity of its renewable generation in the queue and under construction. From this data I forecasted the amount of renewable generation in the queue that would be built and placed into operation by 2019. To do so I used confidence factors developed by

[5] *Renewable Energy Trends in Consumption and Electricity 2008*, by EIA (August 2010), Table 1.26 Total Renewable Net Summer Capacity by Energy Source and State, 2008.
[6] American Wind Energy Association, http://www.awea.org/projects/ (viewed 9/15/2010)
[7] *Draft MTEP10 Report*, by Midwest ISO, Sections 5.3.1 and 5.3.3.

the Midwest ISO.[8] Those confidence factors were based on actual results of interconnection requests moving through its queue and into operation. I used the Midwest ISO's confidence factors because PJM didn't provide similar data in its 2009 RTEP Report. The confidence factors project the likelihood a project in the queue would be built based on whether it had an interconnection agreement or not.[9] I equated having an interconnection agreement to what PJM identified as being under construction in its RTEP 2009 Report. So the "2019 Forecasted In-Service Capacity for PJM" is the sum of the "In-Service" capacity plus the product of the "Capacity in Queue" and the "MISO Queue Rate" for data in the rows "Active in Queue" and "Under Construction." The Final column sums the "Forecasted In-Service Capacity" for both Midwest ISO and PJM for each "Fuel Type." The result is that by 2019 PJM and Midwest ISO will have approximately 28,760 MW of renewable generation.

[8] Id., Table 5.3-4.
[9] Id., Section 5.3.2.1.4.

Fuel Type		2010 In-Service (MW)	2019 Forecasted In-Service Capacity for MISO (MW)	2009[10] In-Service (MW)	Queue[11] (MW)	Amount Moved to In-Service Using MISO Queue Rate[8] (MW)	2019 Forecasted In-Service Capacity for PJM (MW)	2019 – TOTAL Forecasted In-Service Capacity for PJM & MISO (MW)
Hydro	In-Service	2,928	2,928	7,768				
	Active in queue				378	0.0017	1	
	Under Construction				172	1	172	10,869
Solar	In-Service			3				
	Active in queue				710	1	710	
	Under Construction				103	1	103	816
Wind	In-Service	7,644	10,750	904				
	Active in queue				38,227	0.0688	2,630	
	Under Construction				2,900	0.7473	2,167	16,451
Waste	In-Service	242	284	0	0			284
Biomass	In-Service			-				
	Active in queue				246	0.1903	47	
	Under Construction				82	0.8016	66	113
Landfill Gas – IL	In-Service			-				

[10] *RTEP 2009 Report*, by PJM, Fig. 2.13 (http://www.pjm.com/documents/reports/rtep-report.aspx, viewed 9/15/2010).
[11] Id. Table 2.8.

	Active in queue				134	0.1903	26	
	Under Construction				73	0.8016	59	84
Wood	In-Service			114				
	Active in queue				158	0.1903	30	
	Under Construction				-	0.8016	-	144
		10,814	13,962	**Total**				**28,760**

Based on this forecast and using capacity factors from EIA[12] the "Estimated Energy from Renewable Resources" in 2019 would be approximately 92,501.2 GWH/yr:

Fuel Type	2019 – TOTAL Forecasted In-Service Capacity for PJM & MISO (MW)	Capacity Factor	Estimated Energy from Renewable Resources (MWH/yr)		
Hydro	10869	0.372	35,419,028		
Solar	816	0.180	1,286,669		
Wind	16451	0.373	53,753,313		
Waste	284	0.373	927,964		
Biomass	113	0.373	369,225		
Landfill Gas - IL	84	0.373	274,468		
Wood	144	0.373	470,517	**Total**	92,501,185 MWH/yr

[12] *EIA, Electricity Power Annual – Electric Power Industry 2008: Year in Review*, Fig. ES3 – Average Capacity Factor by Energy Source, 2008 (http://www.eia.doe.gov/cneaf/electricity/epa/epa_sum.html, viewed 9/15/2010)

Comparing this result to the estimated RPS requirement for both the Midwest ISO and PJM states that we developed above, it appears that without renewable resources being built at a rate greater than currently forecast by the EIA, Midwest ISO and PJM there won't be enough renewable resource capacity to meet the demand. The 92,501 GWH of renewable resource energy is less than the estimated RPS requirement for 2016 of 99,353 GWH in 2016 and far short of the 136,981GWH needed by 2020.

Thus, the IPA should take steps that will incent development of wind generation. Since we are coming off the heels of the procurement of a bundled energy and REC product, we recommend the use of 5 year RECs. This will provide some stable cash-flow to wind developers/owners, and be more flexible than a product with a longer delivery period. Other types of products may prove to be a better choice in future procurements.

CONCLUSION

WHEREFORE, Wind on the Wires recommends that the Final 2011 Procurement Plan be amended to use a portion of the Residual Volume of the RPS Requirements be used to procure five year RECs – 200,000 MWh for Ameren and 800,000 MWh for ComEd -- to aid in the development of environmentally sustainable electric service.

Respectfully submitted,

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Wind on the Wires Comments on IPA Draft Power Procurement Plan -- 2011

Attachment A

FORECASTED SALES DATA FOR Midwest ISO and PJM STATES FROM 2008 TO 2020, using EIA data

Years:	2010-2015	2016-2020	2021-2025	2026-2030
al Escalation in Energy Consumption/ **Residential**/ Electricity	0.21%	1.00%	1.12%	1.06%
al Escalation in Energy Consumption/ **Commercial**/ Electricity	1.21%	1.48%	1.45%	1.39%
nual Escalation in Energy Consumption/ **Industrial**/ Electricity	0.21%	0.65%	-0.11%	-0.11%
Weighted Avg of Annual Escalation in Retail Sales	0.462%	0.93%	0.54%	0.51%

NOTES:
1. The Annual Escalation in Energy Consumption for Residential, Commercial and Industrial sectors is from *EIA Annual Energy Outlook 2010* , Table A2.
2. The factors used for calculating the weighted average are based on EIA Annual Energy Outlook 2010, Figure 3 data from 2008 to 2035: 21% is residential and 25% is commercial and 54% is industrial; ratios .

PJM
MISO
PJM/MISO

Electric Power Annual: 2008 Year in Review
Figure 7.2. U.S. Electric Industry Total Retail Sales by State, 2008

State	Total (GWH) Retail Sales in 2008	2015 -- Forecasted Retail Sales	2015 RPS	2015 -- Estimated Renewable Requirement (GWH)	2016 -- Forecasted Retail Sales	2016 RPS	2016 -- Estimated Renewable Requirement (GWH)	2017 -- Forecasted Retail Sales	2017 RPS	2017 -- Estimated Renewable Requirement (GWH)	2018 -- Forecasted Retail Sales	2018 RPS	2018 -- Estimated Renewable Requirement (GWH)	2019 -- Forecasted Retail Sales	2019 RPS	2019 -- Estimated Renewable Requirement (GWH)	2020 -- Forecasted Retail Sales	2020 RPS	2020 -- Estimated Renewable Requirement (GWH)
DC	11,851	12,239	0.09500	1,162.752	12,353	0.115	1,420.636	12,468	0.135	1,683.218	12,584	0.155	1,950.562	12,701	0.175	2,222.735	12,820	0.2	2,563.901
DE	11,749	12,134	0.1225	1,486.434	12,247	0.1375	1,683.968	12,361	0.1525	1,885.048	12,476	0.1675	2,089.724	12,592	0.1825	2,298.045	12,709	0.1950	2,478.288
IA	45,488	46,979	-		47,416		-	47,857			48,303		-	48,752		-	49,205		-
IL -- utilities	61,391	63,404	0.1	6,340.364	63,993	0.115	7,359.250	64,589	0.13	8,396.545	65,190	0.15	9,452.502	65,796	0.16	10,527.380	66,408	0.18	11,621.438
ARES	64,479	66,592	0.09	5,993.305	67,212	0.1	6,721.178	67,837	0.12	7,801.261	68,468	0.13	8,900.857	69,105	0.15	10,020.237	69,748	0.16	11,159.674
IN	106,981	110,488	NA		111,516		-	112,553		-	113,600		-	114,657		-	115,724		-
KY	93,428	96,491	NA		97,388		-	98,294		-	99,209		-	100,132		-	101,063		-
MD	62,059	64,094	0.101	6,473.484	64,690	0.122	7,892.200	65,292	0.1255	8,194.142	65,899	0.1490	9,819.007	66,512	0.1620	10,775.014	67,131	0.1650	11,076.646
MI	105,781	109,249	0.1	10,924.869	110,265	0.1	11,026.502	111,291	0.10	11,129.081	112,326	0.10	11,232.614	113,371	0.10	11,337.110	114,426	0.10	11,442.578
MN	37,836	39,076	0.12	4,689.110	39,439	0.17	6,704.705	39,806	0.17	6,767.078	40,177	0.17	6,830.031	40,550	0.17	6,893.571	40,928	0.20	8,185.530
Xcel	30,956	31,971	0.18	5,754.817	32,269	0.25	8,067.158	32,569	0.25	8,142.206	32,872	0.25	8,217.952	33,178	0.25	8,294.403	33,486	0.30	10,045.878
MO	37,981	39,226	0.05	1,961.304	39,591	0.05	1,979.550	39,959	0.05	1,997.966	40,331	0.10	4,033.105	40,706	0.10	4,070.625	41,085	0.10	4,108.493
MT	9,655	9,972	0.15	1,495.785	10,065	0.15	1,509.700	10,158	0.15	1,523.745	10,253	0.15	1,537.920	10,348	0.15	1,552.227	10,444	0.15	1,566.667
NC	3,902	4,030	0.06	241.771	4,067	0.06	244.021	4,105	0.06	246.291	4,143	0.10	414.303	4,182	0.10	418.157	4,220	0.10	422.047
ND	12,416	12,823	0.1	1,282.302	12,942	0.1	1,294.231	13,063	0.10	1,306.271	13,184	0.10	1,318.423	13,307	0.10	1,330.688	13,431	0.10	1,343.068
NJ	78,104	80,665	0.1207	9,736.242	81,415	0.13077	10,646.669	82,173	0.14103	11,588.805	82,937	0.16158	13,400.971	83,709	0.18247	15,274.312	84,487	0.20365	17,205.849
OH	143,450	148,153	0.035	5,185.343	149,531	0.045	6,728.891	150,922	0.06	8,300.709	152,326	0.07	10,129.678	153,743	0.08	11,530.730	155,173	0.09	13,189.732
PA	145,889	150,671	0.055	8,286.931	152,073	0.060	9,124.390	153,488	0.065	9,976.712	154,916	0.070	10,844.103	156,357	0.075	11,726.770	157,812	0.08	12,624.920
SD	10,974	11,334	0.10	1,133.375	11,439	0.10	1,143.918	11,546	0.10	1,154.560	11,653	0.10	1,165.301	11,761	0.10	1,176.142	11,871	0.10	1,187.083
VA	75,313	75,313	0.04	3,012.500	76,013	0.07	5,271.875	76,720	0.07	5,271.875	77,434	0.07	5,271.875	78,154	0.07	5,271.875	78,881	0.07	5,271.875
WI	70,122	72,421	0.10	7,242.073	73,094	0.10	7,309.445	73,774	0.10	7,377.444	74,461	0.10	7,446.076	75,153	0.10	7,515.346	75,853	0.10	7,585.260
WV	11,600	11,981	0.10	1,198.050	12,092	0.10	1,209.196	12,204	0.10	1,220.445	12,318	0.10	1,231.799	12,433	0.10	1,243.258	12,548	0.15	1,882.236

Source: "Total Retail Sales in 2008" from U.S. Energy Information Administration, Form EIA-861. "Annual Electric Power Industry Report."

	2015	2016	2017	2018	2019	2020
ANNUAL TOTAL:	85,615.814	99,353.483	105,980.401	117,304.804	125,497.623	136,981.165

NOTES:
1. The RPS only applies to certain companies/customers in IL, MO, NC, OH, VA and WV. The retail sales numbers have been adjusted to reflect the relevant companies/customers. See Comments attached to the cell for further information.
2. Iowa's RPS requirement is 105 MW and can be met from within the state. Therefore it is not included in the calculation.
3. Missouri's "Total Retail Sales in 2008" is from MO PSC 2008 Electric Utilities Sales Statistics. This # only reflects the sales of Ameren's -- Union Electric Company.
4. North Carolina's "Total Retail Sales in 2008" is sales data only for Dominion; data is from "NC Energy Future: Electricity, Water and Trans. Effic." (Mar. 2010) p. 6.
5. Ohio's "Total Retail Sales in 2008" assumes 90% of retail sales in Ohio comes from investor owned utilities and retail electric suppliers.
6. The "Total Retail Sales" data for Virginia is EIAs data for 2007 sales. Unlike other states, Virginia's RPS is based on an escalation factor of the electricity delivered in 2007.
7. West Virginia's "Total Retail Sales in 2008" is from the WV PSC, Annual Statistics Report, p. 28.