

ASSESSING THE RATE AND REVENUE IMPACTS OF THE WISCONSIN RPS

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Outline

- Wisconsin's RPS
- Requirement to evaluate rate and revenue impacts
- 2012 Report to Wisconsin Legislature
 - Methodology
 - Results
- Options for future evaluation



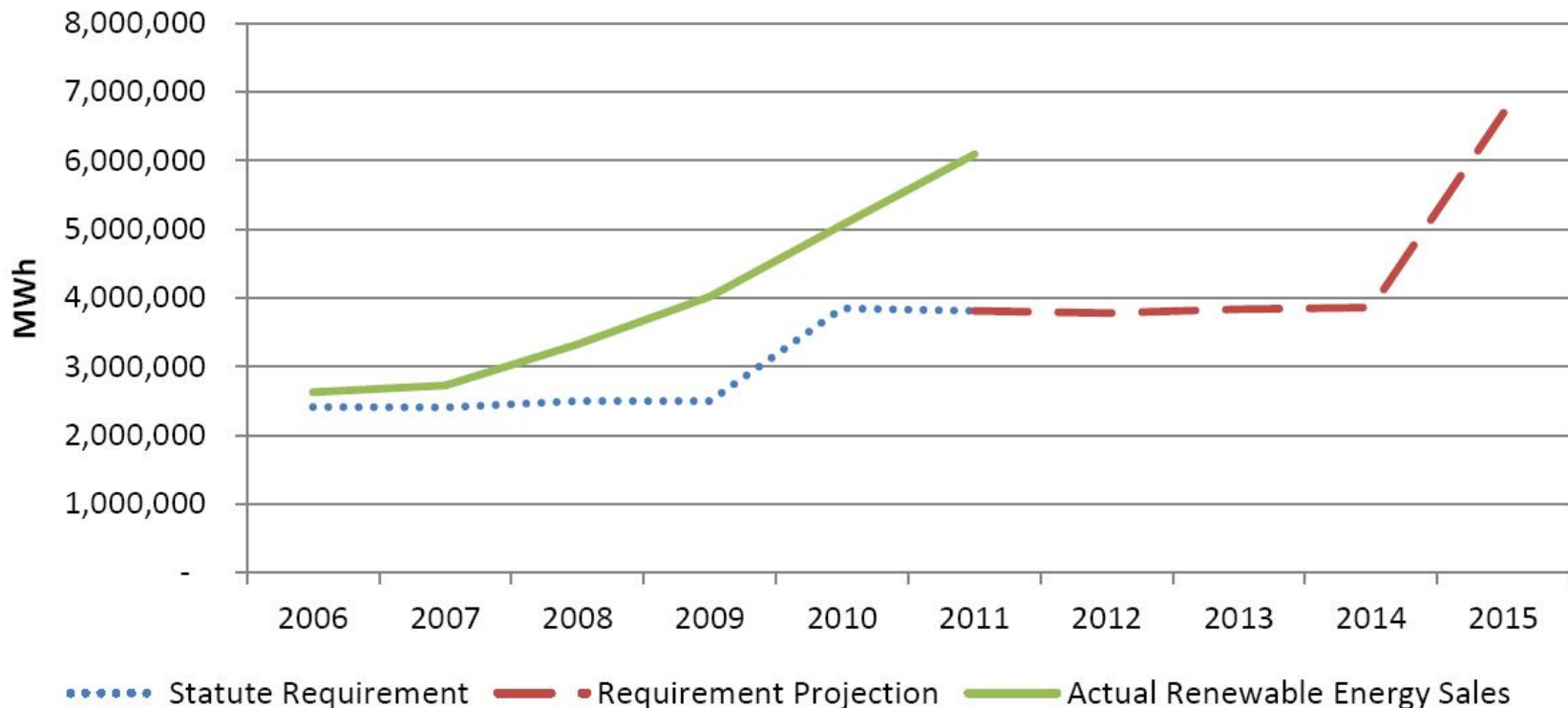
Wisconsin's RPS

- Wisconsin Statute § 196.378, passed in 2006
- Statewide goal of 10% by 2015
- Applies to all electric providers (IOU, muni, coop)
- Each electric provider has individual requirements
 - 2006-2009 = Maintain baseline (based on 2001-2003 RE levels)
 - 2010-2014 = Baseline + 2%
 - 2015 and after = Baseline + 6%



Wisconsin's RPS – CY 2011

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



Requirement to Evaluate Impacts

- Wis. Stat. § 196.378(4r) requires the PSC to submit a report to the governor and legislature that evaluates the impact of the RPS:

“on the rate and revenue requirements of electric providers and compares that impact with the impact that would have occurred if renewable energy practices of electric providers were subject to market forces in the absence of the requirements of this section”

Report due July 1 of each even-numbered year



2012 Report Framework

- Evaluated impacts for calendar years 2008-2010
 - RPS was passed in April, 2006
 - Basically no new renewables built or PPAs in effect until 2008
 - Complete information about 2011 not available early enough to include by July 1, 2012 deadline
- Spreadsheet analysis of cost of new renewable generation
 - No separate accounting for new small renewables under utility buyback tariffs
 - Not considered to be caused by the RPS, so no costs were attributed (tariffs are offered voluntarily by utilities)
 - No renewables attributable to another state's RPS
 - (NSP – MN RPS)



2012 Report Framework

- Assumed no new renewable energy would have been built or procured beyond what was in place at time RPS enacted
→ *conservative approach*
- No attempt to quantify secondary costs or benefits such as impacts on:
 - Jobs
 - Manufacturing
 - Supply chain
 - The environment
 - Health
 - The electric system
 - Payments to landowners and local governments
 - Transmission system upgrades
 - Effects of higher electricity prices



2012 Report Framework

- Two perspectives for the analysis
 1. Generation Perspective: Amount of electricity *generated* from identified new renewable facilities
 2. Sales Perspective: Amount of electricity from renewable resources that Wisconsin electric providers *reported selling at retail** to Wisconsin customers beyond what was sold to customers before the RPS was enacted (2006)

*If any generation from buy-back tariffs was reported sold at retail, that generation would be included here



2012 Report Framework

- Generation Perspective

- Levelized cost of energy calculated for each identified facility
- LCOE incurred for each MWh of energy the facilities generated in 2008, 2009, 2010
- Compared costs to MISO marginal cost of energy (on peak and off peak) for years 2008, 2009, 2010

- Sales Perspective

- Compared average cost of renewable energy per MWh to MISO marginal cost of energy for each MWh of renewable energy reported sold above 2006 levels in years 2008, 2009, 2010



2012 Analysis – Generation Perspective

PPA Project (Utility)	Location	Year Approved	Year Installed	Capacity	Type
Top Of Iowa II (WPPI)	Worth County, IA	-	2007	50 MW	Wind
Forward Energy LLC (WPSC, WP&L, MGE, WPPI)	Dodge/Fond du Lac Co, WI	-	2008	129 MW	Wind
Top of Iowa II (MGE)	Worth County, IA	-	2008	30 MW	Wind
Endeavor II (MGE)	Dickinson County, IA	-	2008	50 MW	Wind
Winnebago (DPC)	Forest City, IA	-	2008	20 MW	Wind
St. Leon (WPS)	Manitoba, Canada	-	2009*	35 MW*	Wind
Barton I (WPPI)	Worth County, IA	-	2009	30 MW	Wind
Barton II (WEPCO)	Worth County, IA	-	2009	50 MW	Wind
Crystal Lake (WP&L)	Hancock, IA	-	2009	200 MW	Wind
Butler Ridge (WPPI)	Dodge County, WI	-	2009	54 MW	Wind

Utility-Owned (Project Name)	Location	Year Approved	Year Installed	Capacity	Type
WEPCO (Blue Sky Green Field)	Calumet County, WI	2007	2008	145 MW	Wind
MGE (Top of Iowa III)	Worth County, IA	2007	2008	30 MW	Wind
WP&L (Cedar Ridge)	Fond du Lac County, WI	2007	2008	68 MW	Wind
WPSC (Crane Creek)	Howard County, IA	2008	2009	99 MW	Wind
WP&L (Bent Tree)	Freeborn County, MN	2009	2010/11	201 MW	Wind
WEPCO (Glacier Hills)	Columbia County, WI	2010	2011	207 MW	Wind
WEPCO (Rothschild)	Marathon County, WI	2011	2013	50 MW	Biomass



2012 Analysis Results (\$/MWh)

Year	Average LCOE for Renewable Facilities
2008	\$77.28
2009	\$74.37
2010	\$74.82

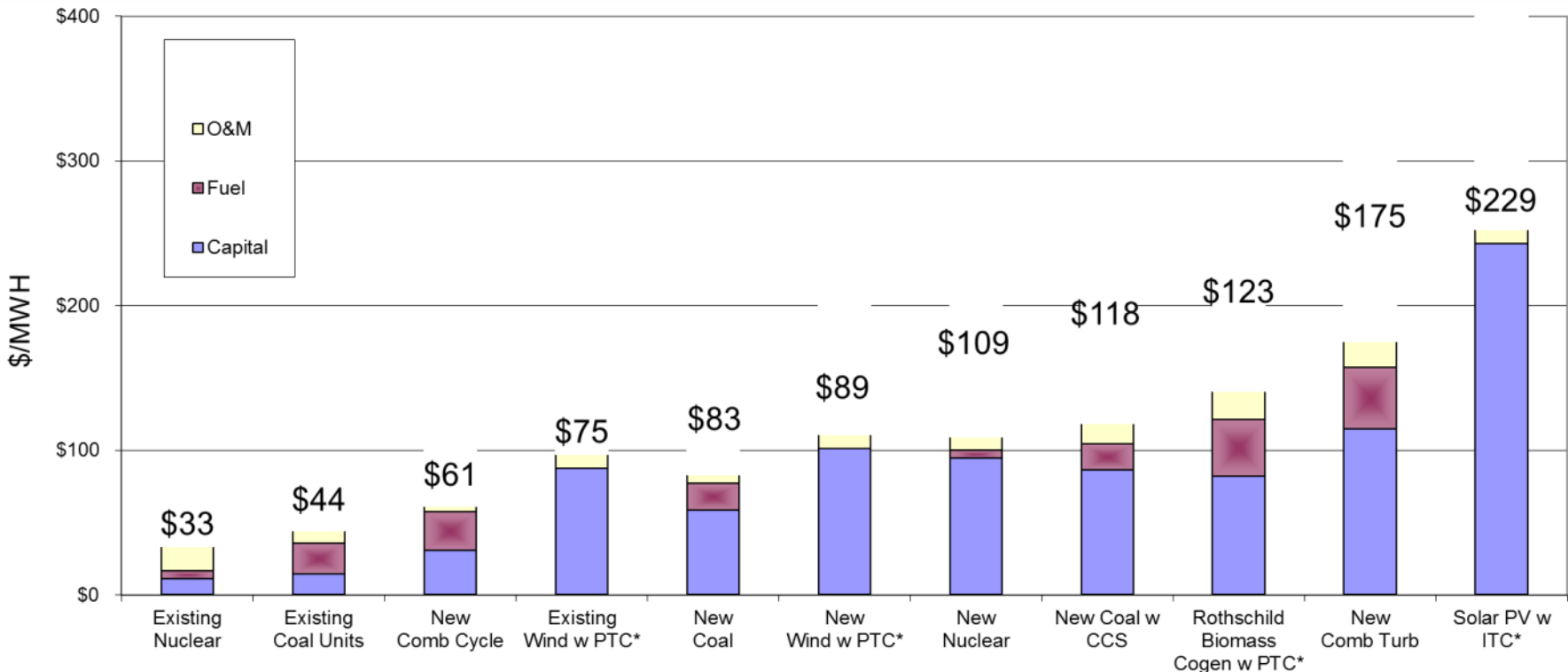
Weighted Average LMPs		
Year	On-Peak	Off-Peak
2008	\$68.64	\$33.23
2009	\$35.28	\$20.12
2010	\$39.60	\$23.77

Average LCOE for New RE Minus Weighted Ave. LMPs		
Year	On-Peak	Off-Peak
2008	\$8.64	\$44.05
2009	\$39.09	\$54.25
2010	\$35.22	\$51.05



LCOE of Various Generation Options

The inevitable next question...



LCOE of various generation options was provided for reference, but was not part of the analysis



2012 Analysis Results

- Generation Perspective 2008-2010 total impact
 - \$209,693,462 = 1.09% impact for 2008-2010 period
- Sales Perspective 2008-2010 total impact
 - \$190,882,754 = 1.00% impact for 2008-2010 period
- Why the difference? Fewer MWh were reported sold to WI customers than were generated by the identified new renewable facilities
- What's not in the analysis?
 - Does not account for any additional value that could have been realized from REC sales to other parties (voluntary market or utilities subject to some other RPS)
 - Does not account for REC sales between Wisconsin compliance entities



2012 Analysis – Other Considerations

- Individual projects proposed for Commission approval are evaluated over course of projected useful life, not just first few years
- Projects constructed in 2008-2010 were approved in 2007 & 2008
- Forecast v. Reality of 2008-2010:
 - Lower demand than forecast
 - Lower marginal cost of energy than forecast
 - No need for new generation to meet load
 - No greenhouse gas regulation



Future Analysis Considerations

- May seek additional information from electric providers regarding their costs and benefits
- May seek utility and stakeholder input on the analysis – opportunity to comment on a draft
- May look at using a more complicated analysis tool such as generation expansion or dispatch modeling



Additional Information

2012 Wisconsin RPS Impact Analysis:

- http://psc.wi.gov/apps35/ERF_search/default.aspx
- Docket 5-GF-220
 - Report to Governor & Legislature
 - Transmittal Letter

Other information on the Wisconsin RPS:

- <http://psc.wi.gov/renewables/rpsCompliance.htm>

Questions:

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