



## Renewable Energy Contributes to Stable Energy Prices in Wisconsin

Renewable resources like wind power, with fixed capital costs, improving technology, and zero fuel costs, contribute to stable energy prices. Wind energy, because of its low marginal cost, displaces higher-cost resources like gas turbines during times of peak demand and thus reduces overall electric costs. Recent studies have shown that this “price suppression” characteristic of wind energy is substantial.<sup>1</sup> Independent national studies are also showing that the levelized cost of wind is now lower than gas combined-cycle generation in many scenarios.<sup>2</sup>

There are a variety of reasons for recent increases in Wisconsin electric rates. The single most important reason is the state’s continued heavy reliance on coal plants. As the Public Service Commission noted in its most recent Strategic Energy Assessment, “Wisconsin continues to be heavily reliant on coal as its primary energy source in actual energy generation.”<sup>3</sup> About two-thirds of the state’s electricity is supplied from coal.<sup>4</sup>

An article in the Milwaukee Journal Sentinel sums up these reasons as follows:

“The biggest factors in rate increases over the past five or 10 years have been plans to build new coal-fired power plants and high-voltage transmission lines in the state as well as the need to add environmental controls to aging coal plants. Other factors include volatile and at times high natural gas prices, climbing coal prices and rising diesel prices charged by rail companies that ship coal to Wisconsin power plants.”<sup>5</sup>

The state’s renewable energy standard is not causing these rate increases. Renewable energy generation in Wisconsin increased 93% from 2006 to 2010.<sup>6</sup> All of the state’s utilities have met their

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<sup>1</sup> A summary of these studies is provided in a study for the Pennsylvania Energy Office at:

<http://files.dep.state.pa.us/Energy/Office%20of%20Energy%20and%20Technology/OETDPortalFiles/PA%20Energy/AE/PS/Price%20Suppression%20v.final.pdf>

<sup>2</sup> Lazard’s *Levelized Cost of Energy Analysis – Version 5.0* (6/11), p. 2.

<sup>3</sup> *Final Strategic Energy Assessment: Energy 2016* (PSCW, 2/11), p. 3.

<sup>4</sup> *Ibid.*, p. 17.

<sup>5</sup> Milwaukee Journal Sentinel. “Wind Farms Enable State Electric Utilities to meet 2010 Energy Standard,” July 16, 2011.

<http://www.jsonline.com/business/125693068.html>

<sup>6</sup> Public Service Commission of Wisconsin. Electric Provider Renewable Portfolio Standard Compliance for CY 2010. June 22, 2011. <http://psc.wi.gov/hotTopics/documents/complianceReport.pdf>

2010 renewable energy requirements and most are in line to meet their 2015 goals. Wisconsin's renewable energy standard includes off-ramps to prevent any unreasonable rate changes. If a utility or customer group believes that compliance would cause unreasonable rate increases, it can petition the PSC for relief. To date, no utility or consumer group has done so.

## AGING COAL FLEETS ARE RISKY AND EXPENSIVE

Over the past decade, Wisconsin utilities have spent over *\$2 billion* in ratepayer dollars keeping an aging coal fleet up and running. These costly upgrades have been due mainly to state and federal environmental requirements. The impact on Wisconsin ratepayers has been significant, totaling over \$60 annually for many customers. These additional costs have not produced any substantial increase in electrical generation and in some instances have caused a decrease in efficiency due to added controls and processes. The PSC expressed continuing concern about this risk in its recent Strategic Energy Assessment:

"It cannot be overlooked that Wisconsin utilities still generate a strong majority of our state's electricity (and any potential exports) through coal generation facilities. Depending on the future of environmental regulation, Wisconsin utilities will have to respond with new or retrofitted generation facilities that fit possible emission restrictions."<sup>7</sup>

Recent events are proving the validity of this concern. For example, Milwaukee-based We Energies recently projected another \$50 million cost increase. The biggest single element of this increase is the rising cost of delivered coal.<sup>8</sup> The total reflects a \$28 million increase for higher coal costs, \$10 million for costs linked to nuclear generation and \$7.6 million for increase in natural gas prices. Meanwhile, the utility's new wind farm, which began operating in late 2011, will decrease fuel prices by more than \$12 million.<sup>9</sup>

Green Bay-based Wisconsin Public Service Corporation is also requesting a residential rate increase of 6.8% in 2012. The principal factor in this rate increase is the effect of new emissions-control requirements for the utility's coal plants.<sup>10</sup>

## FOSSIL FUEL DEPENDENCE SHIPS MONEY OUT OF STATE

Annually, Wisconsin sends over \$700 million out of state to pay for the coal to fuel our aging plants. With no coal, oil or natural gas reserves of our own, Wisconsin residents are vulnerable to the volatility of fossil-fuel market prices (including delivery costs).

China's recent shift from coal exporter to coal importer has created a higher demand for U.S. coal, producing an increase in prices.<sup>11</sup> Likewise, the demand for coal in India is growing. In fact, U.S. coal

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<sup>7</sup> *Op. Cit.*, p. 20.

<sup>8</sup> Milwaukee Journal Sentinel. "We Energies Seeks Rate Hike for Higher Coal, Nuclear Costs," August 3, 2011. <http://www.jsonline.com/blogs/business/126733148.html>

<sup>9</sup> *Ibid.*

<sup>10</sup> Green Bay Press Gazette. "WPS Asks for 6.8% Rate Hike to Comply with New EPA Regulations," August 19, 2011.

<sup>11</sup> New York Times. "Breaking Away from Coal," November 29, 2010.

[http://www.nytimes.com/2010/11/30/business/energy-environment/30utilities.html?\\_r=1&scp=1&sq=breaking%20away%20from%20coal&st=cse](http://www.nytimes.com/2010/11/30/business/energy-environment/30utilities.html?_r=1&scp=1&sq=breaking%20away%20from%20coal&st=cse)

exports have increased nearly two-fold since 2009.<sup>12</sup> This trend has become a key driver behind the rising cost of coal and is not likely to reverse course.

Shipping coal to Wisconsin also requires train transportation from coal mines several states away. The PSC has estimated that half of the delivered cost of coal in Wisconsin is attributable to rail shipment. That cost is highly sensitive to the price of diesel fuel, which sells for nearly a dollar more per gallon than it did a year ago, according to the U.S. Energy Information Administration.<sup>13</sup>

Given these circumstances, diversifying Wisconsin's fuel mix by adding renewable energy is one of the best available means of improving the state's energy independence.

#### EXPERIENCE OF OTHER JURISDICTIONS SHOWS THAT WIND ENERGY IS CONSISTENT WITH LOW RATES

Mid-American Energy Company, which serves parts of Iowa, is the largest utility owner of wind generation in the U.S. and it hasn't raised electric rates since 1995. Wind accounted for 25% of the Iowa's net electric generation in May, 2011 and 21% YTD. Since 2006, wind's share of Iowa's net generation increased from 5% to 21%. Yet Iowa's electric rates increased only 4% during this time. In contrast, U.S. rates increased 9%.<sup>14</sup>

A recent study evaluating Minnesota's Renewable Portfolio Standard (RPS) has shown similar results. The study, which analyzed the impact of Minnesota's RPS on the rates of each utility, indicates that a vast majority of electricity providers have not increased their rates due to the renewable energy standard. In fact, many utility companies, including Xcel Energy, the state's largest provider, have seen rates decrease as a result of the RPS and would continue utilizing large-scale wind power without the state requirement.<sup>15</sup>

On a global scale, countries who are committed to sustainable growth are also experiencing the same trend. In Germany, for example, 20% of the consumed energy is derived from renewable power, yet the country has one of the strongest economies in the European Union and unemployment levels are at their lowest rate in 21 years.<sup>16</sup> Germany's success lies in their lawmaker's ability to embrace bipartisanship and develop policies which can be coordinated and integrated across all sectors and levels of government to achieve maximum effectiveness.<sup>17</sup>

#### CONCLUSION

Renewable energy (including wind power) provides multiple benefits. These include stable costs, the ability to hedge against variable fuel costs, and a sustainable, clean energy source. Renewable energy needs to become a key element in a diversified energy mix for the state.

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<sup>12</sup> Quarterly Coal Report, Energy Information Administration. 3Q 2011. January 11, 2012

<http://www.eia.gov/coal/production/quarterly/pdf/qcr.pdf>

<sup>13</sup> Weekly Petroleum Status Report, Energy Information Administration. August 25, 2011

[http://www.eia.gov/oil\\_gas/petroleum/data\\_publications/weekly\\_petroleum\\_status\\_report/wpsr.html](http://www.eia.gov/oil_gas/petroleum/data_publications/weekly_petroleum_status_report/wpsr.html)

<sup>14</sup> For source data see:

[http://www.eia.gov/cneaf/electricity/epm/epm\\_sum.html](http://www.eia.gov/cneaf/electricity/epm/epm_sum.html) tables 1.6.A, 1.6.B, 1.17.A, 1.17.B, 5.6.A, 5.6.B, and [Historical State-Level Spreadsheets, Annual 1990 to 2007](#)

<sup>15</sup> Minnesota Public Utilities Commission. Docket No. CI-11-852. October 2011.

<sup>16</sup> "Germans celebrate strong economy as the rest of Europe struggles". The Financial Post. November 15, 2011. Print.

<sup>17</sup> "How Germany Became Europe's Green Leader: A Look at Four Decades of Sustainable Policymaking". The Solutions Journal. Vol. 2, Iss. 5, October 2011. Print.