

# Iowa Wind Energy Fact Sheet

## Iowa is a wind energy leader

- Iowa is a national leader in wind energy, producing the highest percentage of electricity by wind of any state – over 36%.<sup>1</sup> Iowa was the first state to generate more than 30 percent of electricity from wind.
- Iowa's total wind capacity by the end of 2016 was 6,917 MW. This ranks second nationally in installed capacity.<sup>2</sup>
- Wind projects under development will bring Iowa to over 9,000 MW and surpass 40% of generation from wind. In 2016, MidAmerican Energy received approval for its 2,000 MW Wind XI project, the largest single wind project in the U.S. Alliant Energy received approval for a 500 MW wind project and also finalized a power purchase agreement (PPA) for 200 MW of wind. Additional wind projects are moving forward as well, such as the Saratoga wind farm in Howard County that will sell to Madison Gas & Electric.<sup>3</sup>
- New wind projects are slated to be proposed later in 2017. Alliant Energy is exploring a 400 MW wind project and MidAmerican Energy is exploring a 1,200 MW wind project. If approved and built, these projects will push Iowa past the 10,000 MW milestone by approximately 2020.

## Wind energy is good for Iowa's economy and job market

- The wind industry employs between 8,000 and 9,000 Iowans, including manufacturing, operations and maintenance, design and engineering professionals (direct and indirect jobs).<sup>4</sup>
- Iowa leads the Midwest in the number employed in the wind industry.<sup>5</sup>
- There are 11 wind energy manufacturers<sup>6</sup> in Iowa and 75 Iowa companies in the wind industry supply chain.<sup>7</sup>
- Wind energy accounts for at least \$13.5 billion in capital investment in Iowa.<sup>8</sup>
- Wind turbines generate \$20 million to \$25 million annually in lease payments to landowners in Iowa.<sup>9</sup> These landowners are in rural Iowa and throughout much of the state. This amount is expected to grow significantly in coming years: MidAmerican's Wind XI project alone is anticipated to add \$18 million in annual land lease payments.
- Iowa is the #2 state for land lease payments to landowners for wind turbines.<sup>10</sup>
- Google and Facebook are among the companies that have identified the availability of low-cost Iowa wind energy as one of the reasons to locate new facilities in Iowa.<sup>11</sup>
- Wind provides significant property tax revenue to local governments. MidAmerican's Wind XI project is estimated to generate \$12.5 million annually in local property tax revenue and \$500 million over the life of the project.<sup>12</sup>
- Three examples of annual county tax revenue from wind: Buena Vista received \$1.2 million, Pottawattamie received \$2 million, and Carroll received \$1.4 million.<sup>13</sup> This supported schools, roads and bridges, and health services.

## Wind energy is affordable energy

- Wind energy in Iowa grew from about 800 MW in 2005 to over 6,900 MW today.<sup>14</sup> Iowa's electric rates have remained below the national average during this time.<sup>15</sup>
- New wind energy in Iowa is a low cost option and less expensive than new coal, natural gas, or nuclear.<sup>16</sup>

- Building more wind energy in Iowa will create substantial savings for Iowa customers in future years: Adding another 10,000 MW of wind energy to bring Iowa to 20,000 MW of wind would save Iowa consumers \$12.6 billion over 25 years with average annual savings of over \$500 million. Average households would save \$3,200 on electric bills during this time while average industrial customers would save \$825,000.<sup>17</sup>
- Other Midwest state electricity rates are higher than Iowa's. For example, Iowa's electricity rates are 30 percent lower than Wisconsin's electricity rates. Wisconsin gets only two percent of its energy from wind (compared to over 36 percent for Iowa).<sup>18</sup>

### Wind energy is reliable and stable

- Effectively integrating renewable energy while maintaining grid reliability is already being achieved.
- Many studies "show that renewables can be integrated at high levels without significant issue" including the Renewable Energy Futures Study, the Western Wind and Solar Integration Study, the Wind Vision Study (all NREL) and the PJM Renewable Integration Study (GE).<sup>19</sup>
- The nation's major grid operators have found that wind and solar energy need very little backup power.<sup>20</sup> MISO, the grid operator for the middle part of the country, needs almost no additional fast-acting power reserves to back up its 10,000-plus MW of wind power on the system.<sup>21</sup>

### Potential for more wind growth

- Iowa has enormous potential to add more wind generation, with studies showing a lower end of 307,000 MW of wind and higher end of 570,000 MW (depending on factors such as turbine size, spacing, and locations).<sup>22</sup>
- The majority of Iowa's 99 counties still have little or no wind development.
- Iowa's wind employment is projected to grow to over 17,000 jobs by 2020 (11,500 direct and indirect, 6,000 induced), among the highest of any U.S. state.<sup>23</sup>

<sup>1</sup> AWEA, *U.S. number one in the world in wind energy production* (Feb. 29, 2016), available at <http://www.awea.org/MediaCenter/pressrelease.aspx?ItemNumber=8463>.

<sup>2</sup> AWEA, *U.S. Wind Industry Fourth Quarter 2016 Market Report*, (Jan. 26, 2017), available at <http://www.awea.org/4q2016>.

<sup>3</sup> Madison Gas & Electric, <https://www.mge.com/environment/green-power/wind/saratoga.htm>.

<sup>4</sup> AWEA, *Iowa Wind Energy* (accessed June 2017) available at <http://www.awea.org/state-fact-sheets>.

<sup>5</sup> E-2, Clean Energy Trust, BW Research, *Clean Jobs Midwest: Iowa* (2016) at <http://www.cleanjobsmidwest.com/state/iowa>.

<sup>6</sup> AWEA, *Iowa Wind Energy*.

<sup>7</sup> ELPC, *Iowa Wind Power & Solar Energy Supply Chain Businesses* (2015).

<sup>8</sup> AWEA, *U.S. Wind Industry Annual Market Report Year Ending 2015* (2016).

<sup>9</sup> AWEA, *Iowa Wind Energy*.

<sup>10</sup> Radio Iowa, *Iowa near the top in lease payment dollars for wind turbines* (March 2016).

<sup>11</sup> <http://www.desmoinesregister.com/story/money/business/2014/04/03/facebook-google-green-wind-energy-greenpeace/7239627>.

<sup>12</sup> MidAmerican Energy, Request for Approval of Ratemaking Principles, Iowa Utilities Board Docket No. RPU-2016-0001 (filed April 14, 2016).

<sup>13</sup> Data from fiscal year 2015-2016, compiled by the Iowa Environmental Council.

<sup>14</sup> AWEA, *Iowa Wind Energy*.

<sup>15</sup> Data available from the U.S. Energy Information Administration.

<sup>16</sup> See Lazard's Levelized Cost of Energy v. 10.0 (December 2016) available at <https://www.lazard.com/perspective/levelized-cost-of-energy-analysis-100/>.

<sup>17</sup> A Renewable America and AWEA, *The Consumer Benefits of Wind Energy in Iowa* (2016).

<sup>18</sup> John Imes, *Wisconsin Must Do Its Part to Reduce Emissions*, Wausau Daily Herald (March 2015).

<sup>19</sup> AWEA & SEIA, *A Handbook for States: Incorporating Renewable Energy into State Compliance Plans for EPA's Clean Power Plan*, Version 1.0, February 2015, at 98. Available at: <http://awea.files.cms-plus.com/FileDownloads/pdfs/Handbook%20for%20States%20final.pdf>.

<sup>20</sup> NRDC, *Transforming the Power Grid with Clean Energy*.

<sup>21</sup> NRDC, *Transforming the Power Grid with Clean Energy*, citing Nivad Navid, MISO, *Reserve Requirement Identification with the Presence of Variable Generation*, presentation to the Utility Variable Generation Integration Group (2012), at <http://www.uvig.org/wp-content/uploads/2012/12/SanDiegoTechWorkshopAgenda.pdf>.

<sup>22</sup> Studies by DOE and NREL including 20% by 2030 Wind (2008); Wind Vision (2015); and Renewable Energy Futures (2012).

<sup>23</sup> Navigant Consulting, *Economic Development Impacts of Wind Projects* (2017) at <https://www.navigant.com/insights/energy/2017/awea-wind-analysis>.