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Neglecting a Wind Energy Portfolio Leaves Nebraska Behind Its Neighbors

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Nebraska is a state that prides itself on the productivity of our land. We dutifully don our foam corn hats at Memorial Stadium and boast that Nebraska beef is what's for dinner. But Nebraska's land holds an untapped resource that our neighboring states are taking advantage of: wind. Nebraska must adopt a renewable portfolio to double production of wind energy in our state over the next five years.

A renewable portfolio is a regulation that sets a minimum amount of power that can be produced by renewable sources, such as solar, wind, and hydroelectric. Currently, Nebraska does not have any such regulations, and 34% of energy from the Nebraska Public Power District comes from coal sourced from Wyoming.

Nebraska's wind energy potential is staggering. AWS Truepower and the National Renewable Energy Laboratory put the potential wind energy capacity of Nebraska at 465,000 megawatts, ranking the state seventh in the nation[1].

But, looking at installed capacity, you wouldn't know it. Iowa's installed capacity is nearly 7,000 MW[2], compared to Nebraska's 1,434 MW[3]. Nebraska's installed wind capacity generates a little over 8% of our energy demands. The difference isn't because Iowa has greater wind potential, in fact, they have less than half of that of Nebraska.

Iowa instead incentivized investment in their state using a wind energy production tax credit of 1.5¢ per kWh produced. This pushed companies to look to Iowa as the electricity

generation hub of the Midwest, leaving Iowa's renewable energy production to blow past Nebraska's.

Nebraska is different than Iowa, however. We benefit from a series of robust public power utilities that have an obligation to provide power to every single Nebraskan at low cost. But by not adopting a renewables portfolio, the utilities are not living up to this obligation.

An important number in weighing the cost of electricity across different sources is the levelized cost of energy. This takes into account the total cost of an energy source, such as operation and maintenance costs, equipment costs, and fuel costs, and divides it by its useful life. The US Energy Information Administration's February 2019 report indicates that onshore wind's levelized cost of energy is close to becoming competitive with coal energy, and new advances in wind turbine technology can push the cost even lower. By not adopting a renewable portfolio for wind energy, public power is overlooking a source of energy that can provide Nebraskans with cheaper energy.

However, cheaper energy is not the only reason why wind energy should be used in the state. Nebraska is unique in our energy usage. The state ranks third in the nation for the number of industrial energy consumers, and in the top ten per capita in total energy usage, largely driven by our agricultural sector. Pushing wind energy into rural areas will bring power closer to the largest consumers of energy, reducing electricity transmission losses and decreasing costs to the public utility.

Farmers will also benefit from increased land worth. Turning to Iowa as a comparison, annual land lease payments in 2017 totalled $25 million, compared to $7 million in Nebraska.

Annual land leases are estimated to be between $4000 and $6000 per MW of nameplate capacity. A modest 100 MW wind farm could net a farmer an extra $600,000 each year.

One of the largest criticisms of wind turbines is that they can harm wildlife species, especially birds. However, this is not a particular concern in the Great Plains. The US Fish & Wildlife Services estimates that nearly 8 birds die per year for each installed turbine in the West Coast. In the Great Plains, this number is far less, a little under 3 bird deaths per turbine per year. At any rate, the number of birds killed by automobiles is far greater than those killed by wind turbines.

With increased wind energy also comes increased economic opportunities for Nebraskans. Over $16 billion was invested in 2017 in Iowa with wind energy-related employment between nine to ten thousand workers. Nebraska during the same time period only garnered $3.5 billion investment with between three to four thousand wind workers.

The Nebraska Legislature should pass a renewable portfolio to double the amount of wind energy in our state in the next five years. Nebraska is a leader in the nation for food production. We feed the country by using our land. We can power the nation by using our wind. But, this will not be possible without the proper portfolio our state.

References

1: https://windexchange.energy.gov/maps-data/321
2: https://iub.iowa.gov/regulated-industries/wind-powered-electric-generation-iowa
3: http://www.neo.ne.gov/programs/stats/inf/89.htm