



**Senate Energy and Natural Resources Committee
Testimony of Eric Thumma
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November 29, 2016

Opponent Testimony on Substitute Bill 320

Chairman Balderson, Vice Chair Jones, Ranking Member Gentile, and members of the committee, thank you for the opportunity to present today's testimony. I am Eric Thumma, Director of Policy and Regulatory Affairs for Avangrid Renewables, LLC (formerly Iberdrola Renewables). Our company is the second largest owner and operator of commercial scale wind farms, including Ohio's largest wind farm, Blue Creek, in Van Wert and Paulding counties. Avangrid Renewables is also developing commercial-scale solar facilities across the country. My testimony emphasizes the tremendous value of our company's primary product, wind energy, and argues that Substitute Bill 320 should be amended to mandate renewable energy purchases in all years, not just beginning in 2020.

As the following chart shows, wind energy has never been cheaper. In 2014, the last year for which we have full data, the average cost of wind energy nationally (with the federal production tax credit) was \$23.43. To be clear these are average national prices so we would expect prices for an Ohio wind farm to be somewhat higher. But, for context, compare the falling price of wind energy to the average day-ahead energy price in PJM (the power grid and wholesale market which serves Ohio). In 2013, the average day-ahead energy price was \$38.66 per MWh. In 2014 the price increased to \$53.14 per MWh,¹ before falling back to \$36.16 per MWh in 2015.²

¹ http://www.monitoringanalytics.com/reports/Market_Messages/Messages/2014-som-pjm-press-release.pdf

² http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2015/2015-som-pjm-volume2.pdf p. 1.

Wind energy is on sale: 66% off

FALLING PRICE OF WIND ENERGY



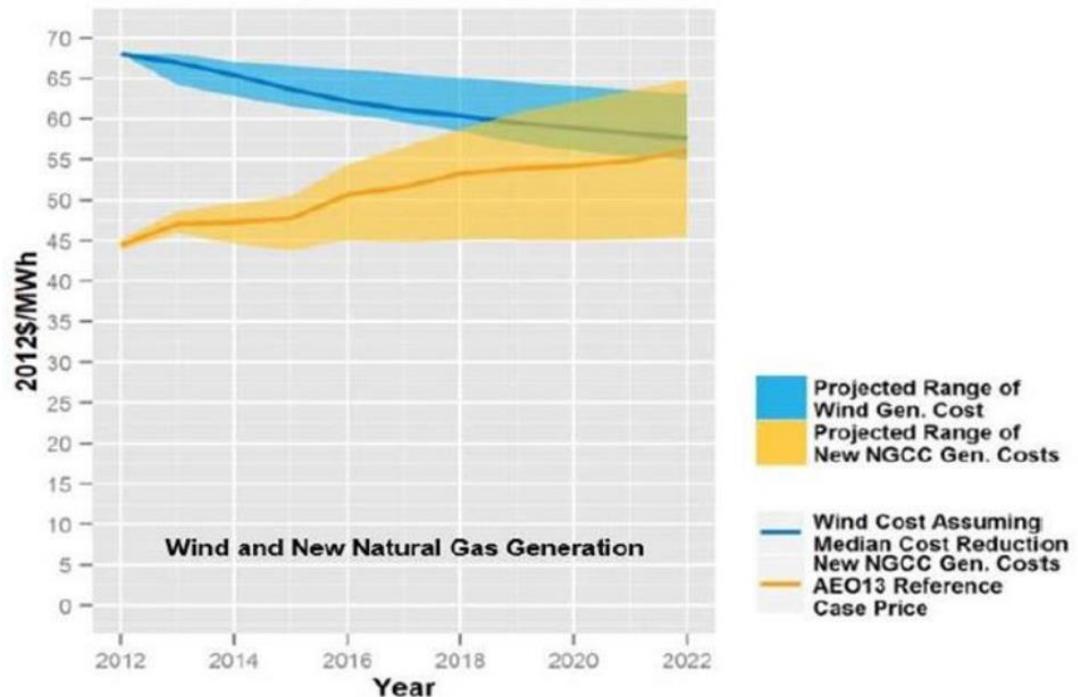
This chart, based on publicly available data from Lawrence Berkeley National Laboratory demonstrates the ongoing falling price of wind energy. As a result, many corporate customers are recognizing this value and engaging in direct purchases of wind energy, just like Amazon has done right here in Ohio and with our company in North Carolina. Other major brands are purchasing wind energy not just to meet their environmental goals, but also because it is cost competitive. Just a few of these companies include: Google, Facebook, General Motors, Walmart, Microsoft and Proctor and Gamble.

Given wind energy's low cost, why then does its purchase still need to be mandated? The reasons have to do with the nature of today's electricity market structure:

- (1) Electricity market price signals are primarily short-term. Wholesale markets send an energy price signal to the market a day-ahead and in shorter real-time intervals. Slightly longer-term forward markets do exist for approximately two to three years, but based on a very limited number of transactions the further out one goes. As a result, existing energy markets do not account for the

long-term value of wind energy's low fixed price for terms of up to twenty years or even twenty five years.

Wind cost vs. natural gas cost, 2012-2022



Source: NREL

Natural gas is becoming the dominant price setting fuel across the country and especially in the PJM – the market in which Ohio resides. The above chart, based on data from the National Renewable Energy Laboratory and Energy Information Agency's Annual Energy Outlook, shows that in the near-term the projected price of energy from natural gas will fall within the same range as the price of wind energy. Wind energy is not only competitive with natural gas, but provides fuel diversity and a long-term fixed price in case natural gas prices increase even more than expected.

- (2) Retail energy suppliers are not well equipped to do long-term procurement. Most retail electricity suppliers have limited balance sheets which mean they simply procure energy when needed to deliver to their customers. Additionally, retail energy suppliers do not know from year to year how many customers they will have. This makes long-term planning and procurement impossible. So, in

short, a competitive supplier is not motivated to examine the market for the best long-term energy price meaning it is both impractical and unlikely that most or any retail energy suppliers will choose to voluntarily purchase low cost wind energy to serve their customers. The retail electricity market is not set-up to reward that type of behavior.

In short, today's electricity markets do not send a price signal to retail energy suppliers that encourages the purchase of low-cost, long-term wind energy. Renewable energy mandates redress that market shortcoming and are the most efficient way to ensure that every day Ohio customers benefit from low cost wind energy. We respectfully request that the committee amend Substitute Bill 320 to require renewable energy purchases in all years, not just beginning in 2020. Thank you for your consideration of my testimony. I would be privileged to answer your questions.