

BEFORE THE MINNESOTA OFFICE OF ADMINISTRATIVE HEARINGS
600 North Robert Street
St. Paul, MN 55101

FOR THE MINNESOTA PUBLIC UTILITIES COMMISSION
121 Seventh Place East, Suite 350
St Paul, MN 55101-2147

**In the Matter of the Further
Investigation into Environmental and
Socioeconomic Costs Under Minnesota
Statute 216B.2422, Subd. 3**

**MPUC Docket No. E999/CI-14-643
OAH 80-2500-31888**

**POST-HEARING REPLY BRIEF OF THE
CLEAN ENERGY BUSINESS COALITION**

The Midwest Renewable Energy Association (MREA), Solar Energy Industries Association (SEIA), and Wind on the Wires (WOW) (collectively, “Clean Energy Business Coalition”) joins in the reply brief filed today by the Clean Energy Organizations supporting the Federal Social Cost of Carbon as the best available measure of the environmental cost of CO₂. The Clean Energy Business Coalition further supplements that filing here with a reply to Peabody Energy Corporation’s (Peabody) and the Minnesota Large Industrial Group’s (MLIG) flawed economic analysis of the costs and benefits of fossil fuels and cleaner energy alternatives.

Peabody and MLIG present the Commission with a false choice. They frame this case as a stark choice between the economy and the environment, arguing that “future economic growth *requires* fossil fuels.” (Ex. 228, Bezdek Direct, at 3 (*emphasis added*)). The fundamental flaw in this false narrative is Peabody and MLIG’s opinion that fossil fuels are the “only fuels that can provide the abundant, reliable, affordable energy that the world will depend on in the coming decades.” (Ex. 228, Bezdek Direct, at 14.) The Clean Energy Business Coalition witnesses debunk the outdated notion that society must continue to rely exclusively on fossil fuels to promote economic growth. Christopher Kunkle and Shawn Rumery promote an alternative

vision—using current data and realistic assumptions and projections—that show a much different future in which technological and business innovation lead to a much better quality of life, more jobs, strong economic development, fewer emissions, and a healthier planet.

I. Response to Allegation that Clean Energy Business Coalition Has Not Met its Burden of Proof.

MLIG argues that the Clean Energy Business Coalition failed to meet its burden of proof in this proceeding because our witnesses did not independently address the justification for choosing the Federal Social Cost of Carbon as the best available measure of CO₂ externalities. Instead, in presenting testimony rebutting specific statements made by other parties to the proceeding, the Clean Energy Business Coalition witnesses (Christopher Kunkle and Shawn Rumery) each included a short position statement to frame their testimony in the larger context of the proceeding: “In general, my testimony is offered to support adoption of the federal Social Cost of Carbon values (as proposed by the Clean Energy Organizations and the Minnesota Department of Commerce testimony), as the best figure available to account for externalized damage costs of carbon emissions.”

MLIG misinterpreted that statement. The Clean Energy Business Coalition ultimately joined the brief of the Clean Energy Organizations that discussed, in detail, the reasons supporting the Federal Social Cost of Carbon as the best available externality value for CO₂. MLIG can point to no requirement forcing parties who are aligned in their positions to put up duplicative witnesses on the same issues. To the contrary, “parties are encouraged to jointly file pre-filed testimony, briefs or other pleadings in this proceeding to the extent appropriate and consistent with their positions and interests in this docket.” Third Prehearing Order, Oct. 15,

2014. Nothing about this approach is inconsistent with the March 27, 2015 Order Regarding Burdens of Proof.

MLIG goes on to again challenge the relevance of the Clean Energy Business Coalition's testimony refuting unsupported statements about the costs of wind and solar energy that underpin the flawed benefit-cost analysis presented by MLIG and Peabody witnesses. (MLIG Brief at 16.) The ALJs have already deemed the testimony relevant for the purpose it was offered. Order on Motions by Peabody Energy Corporation, The Minnesota Department of Commerce and the Pollution Control Agency to Exclude and Strike Testimony, Sept. 15, 2015. Since the pre-filed testimony was filed there have been several additional unsupported statements regarding cost impacts by both Peabody and MLIG at the hearing and in the initial post-hearing briefs. If anything, the Clean Energy Business Coalition testimony is even more relevant than it was when it was filed in August.

II. There is No Evidence in the Record Supporting Contentions That a High Externality Value Leads to High Electricity Rates.

Counsel for Peabody and MLIG have peppered their briefs with alarmist, unfounded claims about the potential for a high externality value to increase energy costs for consumers, declaring that Minnesotans would “pay dearly” for the Commission’s action because electricity rates would “skyrocket.” (Peabody Initial Brief at 86, 96. *See also*, MLIG Initial Brief at 1, 86.) Peabody also goes on to argue that “[f]ossil fuels are essential for world economic growth,” and claims that reducing CO₂ emissions will curtail the economy overall. (Peabody Initial Brief at 104, 115.)

These industry parties claim to stand for the interests of low-income ratepayers (MLIG Initial Brief at 1, Peabody Initial Brief at 109, 113), but the facts strongly refute this claim: clean,

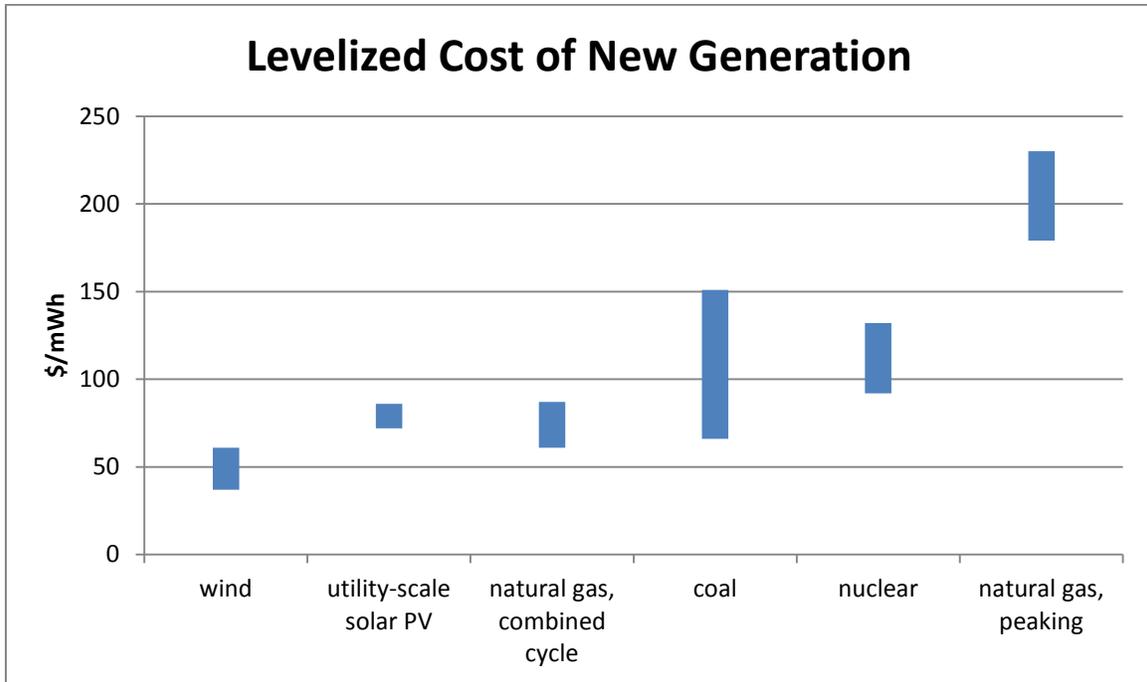
renewable energy (i.e. wind and solar) in an electricity portfolio can provide a great benefit to low-income ratepayers because those energy sources tend to stabilize and reduce electricity costs for all rate payers. (Ex. 700, Rumery Prefiled Testimony (“Rumery”), at 16:14-18; Ex. 701, Kunkle Prefiled Testimony (“Kunkle”), at 7:1-7.) The remainder of this brief will address these issues of costs, affordability, and economic development, and demonstrate that the Commission is not being forced to choose between environmental and economic interests. Raising the externality value for CO₂ actually benefits both.

a. Wind and solar development costs are falling rapidly.

Development costs for wind and solar have been dropping dramatically in recent years, and are expected to continue to decrease. Wind power costs have dropped 90% since the 1980s and fell from approximately \$1,500/kW in 2008 to \$850-\$1,250/kW in recently announced transactions. (Ex. 701, Kunkle, 6:1-3.) Similarly, the average cost to install a residential solar PV system has dropped by 43% since the end of 2011, and reached \$3.54/watt at the end of 2014. The price to install a utility-scale system has dropped by 50% since 2011, to \$1.61/watt by the end of 2014. (Ex. 700, Rumery, 3:15-18.)

The only electricity cost information provided by Peabody to support its claim of “skyrocketing” energy costs is a figure displaying out-of-date and incorrect levelized energy costs for wind and solar. (Ex. 230, Ex. 2 to Bezdek Dir., at 47.) Peabody reports solar PV (photovoltaic) costs at around \$0.40/kWh and onshore wind costs just below \$0.15/kWh. (*Id.*) Peabody’s outdated data fails to reflect the dramatic improvements in wind and solar costs that witnesses Rumery and Kunkle describe in their testimony. In fact, some recent utility-scale solar PV prices have been under 4 cents per kilowatt-hour (Rumery 4:16-5:2), and wind prices (without government incentives) are in the 3.7 to 8.1 cents per kilowatt-hour range. (Ex. 701,

Kunkle, 6:5-6.) This is competitive with, and in some cases below, the costs of developing fossil fuel resources, as indicated in the chart below.



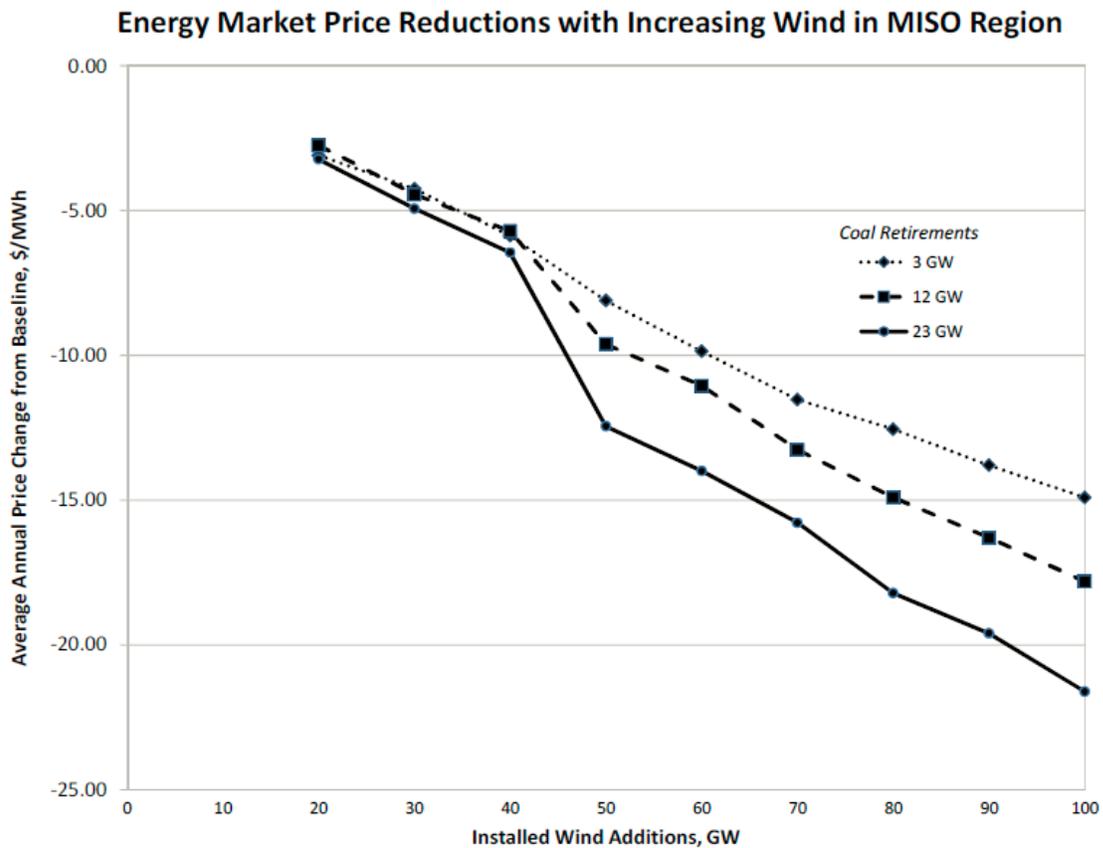
(Based on information presented in Ex. 700, Rumery, 4:2-8 and Ex. 701, Kunkle, 10:2-14.)

b. Renewable energy development can help stabilize energy costs.

Many reports have concluded that increased development of renewable energy provides great value to ratepayers and can help lower energy costs. (Ex. 701, Kunkle, 7:9-9:2.) This is because wind and solar energy provide unique benefits to the electricity market. Wind and solar both have zero fuel costs, which protect the market from the volatility of fossil fuel commodity prices. (Ex. 700, Rumery, 16:14-18; Ex. 701, Kunkle, 8:3-6.) Further, because marginal (i.e. fuel) costs are so low, wind and solar resources will displace more expensive energy sources on the wholesale market, thereby lowering the market clearing price. (Ex. 701, Kunkle, 7:1-7; 8:3-6; 9:7-15.) In addition, renewables can drive down the costs of operating reserves (Ex. 701,

Kunkle, 14:1-6), and strategically-placed distributed renewable generation systems can reduce the need for costly upgrades to the grid. (Ex. 700, Rumery, 17:1-4.) Thus, wind and solar energy sources reduce system-wide production costs, improve efficiencies of the market as a whole, and can help lower the price of power for all consumers.

These principles bear out in experience nationwide: from 2005 to 2010, the states with the top 10 largest amounts of wind generating capacity had rate increases that were one-third of the amount of rate increases experienced in the other 40 states. (Ex. 701, Kunkle, 6:8-10.) The graph below (Ex. 701 Kunkle, Attach. 3) further illustrates the price suppression effect of increasing wind resources on the regional market.



Peabody turns to some theoretical statements made by Nicolas Martin of Xcel Energy in an attempt to justify Peabody's claim that the externality value will cause electricity rates to increase. (Peabody Initial Brief at 109.) But those statements speak to what could happen if the externality value forced high-cost power generation options. Notably, Mr. Martin's cited statements do not analyze actual cost figures of any generation source. When asked at hearing, Mr. Martin candidly agreed that Xcel Energy has found the cost to develop renewable resources to be competitive, and that such resources have allowed Xcel Energy to keep customers' electricity rates low. (Tr. 9/29/15 at 187:15-188:11; 217:13-221:11.) Indeed, Xcel Energy has stated publicly that "Wind energy is a valuable, low-cost substitute for natural gas and other fuels right now. These [wind] projects will reduce customer costs by providing a valuable hedge to rising and volatile fuel prices well into the future." (Ex. 701, Kunkle, 6:10-14.)

c. Renewable energy is an opportunity, not a detriment, to economic growth.

Because wind and solar help to keep electricity rates low, they allow--and even incentivize--economic development in states that adopt clean energy policies to increase the share of renewable energy. But beyond that overall boost to the economy, the growth of the renewable energy industry itself is a tremendous opportunity for Minnesota, particularly in rural communities. (Ex. 701, Kunkle, 20:8-16.)

For the past several years, renewable energy has been a significant portion of new generating capacity added to the grid in the United States. Since 2006, at least 21% of electric capacity added every year has been from renewable sources. (Ex. 700, Rumery, 7:4-6.) From 2012-2014, renewables made up 50% of all electric capacity added to the grid, peaking at 55% of installed capacity in 2014. (Ex. 700, Rumery, 7:6-8.) Wind power alone constituted an average of 34% of the total new generating capacity added in the United States each year from 2007 to

2013. (Ex. 701, Kunkle, 15:17-16:2.) Investments in solar nationwide have grown an average of 72% year-over-year since 2006. (Ex. 700, Rumery, 15:10-12.) Furthermore, technical studies demonstrate that U.S. renewable energy resources have the potential to provide much more energy than the total U.S. electricity demand. (Ex. 701, Kunkle, 4:3-5:1.) The nationwide potential of wind alone is nearly seven times larger than total U.S. demand. (Ex. 701, Kunkle, 5:15-18; Ex. 703, Kunkle Opening Statement.)

Minnesota already sees the direct benefits of this growth industry. A recent Minnesota Department of Employment and Economic Development (MN DEED) study found that over 15,000 Minnesotans are employed in the clean energy sector. These are high-quality, permanent jobs that collectively offer salaries 42% higher than the state average. (Ex. 701, Kunkle, 20:18-21:2.) Since 2010, over \$91 million has been invested in solar installations in Minnesota, including \$15 million in 2014 alone. (Ex. 700, Rumery, 15:15-16.) Over 115 Minnesota companies work in the solar industry, employing more than 1,800 people, up from 500 in 2012. (Ex. 700, Rumery, 15:13-16.) By contrast, there are no coal mines or coal mining jobs in Minnesota, from Peabody or any other company. (Tr. 9/29/15 188:15-18.)

Renewable energy also contributes meaningfully to local property taxes in Minnesota. For example, Minnesota wind farms contribute over \$10 million annually to counties and townships where they are located, for a cumulative total of \$50 million so far. (Ex. 701, Kunkle, 21:9-11.) The property taxes from wind in counties that have taken advantage of this resource provides a significant portion of the overall operating budget, helps pay for vital services and infrastructure, and keeps property taxes from increasing. (Ex. 701, Kunkle, 21:11-14.)

CONCLUSION

For the reasons stated above, the Commission should reject the false-choice narrative perpetrated by Peabody and MLIG. The idea that clean energy forces economic sacrifice is not supported by the data and is not relevant to the Commission's valuation of the costs that are currently externalized by the fossil fuel industry. Choosing an externality value for CO₂ that reflects our best current understanding of the potential impacts of that pollutant gives regulators and the market the opportunity to make informed and responsible decisions about the appropriate mix of resources in the future. This does not require the Commission to choose between economic development and the environment.

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Respectfully submitted,

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