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From: Tyler Huebner, Executive Director, RENEW Wisconsin

To: Angela Dickens, Wisconsin Department of Natural Resources

Cc: Alexander Vedvik, Public Service Commission of Wisconsin

Re: Comments to Wisconsin Department of Natural Resources regarding Environmental Protection Agency Clean Power Plan

Date: September 17, 2014

Dear Ms. Dickens,

I write today representing RENEW Wisconsin and our comments for the Wisconsin Department of Natural Resources (WDNR) in regards to the Environmental Protection Agency's (EPA) Clean Power Plan (the "draft plan"), released in draft form in June 2014. Thank you for the opportunity to give our input to this process. We hope these comments are of value as you determine the WDNR's response to the draft Plan.

Note: these comments do not contain any original research.

Our comments cover four main points:

1. The draft plan is very achievable for Wisconsin
2. Wisconsin's renewable energy industry will benefit from this plan
3. Flexibility or offset value should be requested of EPA related to biogas methane waste usage
4. The power sector is undergoing significant changes such as electric vehicles and decentralized power generation. EPA needs to recognize these changes are occurring and ensure state compliance is adaptable and flexible.

1. The draft plan is very achievable for Wisconsin. As a state, we have a history of leading on clean energy issues, and that history positions us well to meet the targets identified in the draft plan. The share of emission-related improvements identified by the draft plan for energy efficiency and renewable energy will be easily and cost-effectively met as long as Wisconsin's compliance plan is structured to utilize these resources appropriately.

2. Wisconsin's renewable energy industry will benefit from this plan. Wisconsin has a strong industry in renewable energy technologies, project development, installation, and

manufacturing. The table below shows the number of companies and estimated jobs garnered from the following renewable energy technologies:

Renewable Energy Type	Number of Wisconsin Companies	Number of Wisconsin Jobs
Solar	319 (1)	3,200 (2)
Wind	251 (1)	500 – 1000 jobs; 27 supply chain facilities (3)
Biogas	10+ (4)	100+ full-time plus up to 30 local construction jobs per digester during construction (4)

Wisconsin renewable energy industry numbers

National figures show that beneficial policy could drive many more Wisconsin jobs into the renewable energy industry:

Renewable Energy Type	Number of National Jobs
Solar	142,698 (2)
Wind	50,500 (5)
Biogas	Not available
Hydropower	300,000 (7)

National renewable energy industry numbers

Sources:

(1) Environmental Law & Policy Center Supply Chain Data
(2) The Solar Foundation's National Solar Jobs Census 2013 (http://thesolarfoundation.org/research/national-solar-jobs-census-2013)
(3) American Wind Energy Association Wisconsin Profile (http://www.awea.org/Resources/state.aspx?ItemNumber=5177)
(4) RENEW Wisconsin estimates
(5) American Wind Energy Association Wind Energy Facts at a Glance (http://www.awea.org/Resources/Content.aspx?ItemNumber=5059)
(6) Abc
(7) National Hydropower Association (http://www.hydro.org/why-hydro/job-creation/)

The number of solar industry jobs grew nationally by 19% from 2012 to 2013 and are expected to grow by 15% in 2014. The 19% growth in the solar industry is a full *ten times faster* than the national employment growth rate in that twelve month period. Wisconsin has attracted international companies such as Ingeteam and Elektra, solar panel manufacturer Helios is looking to re-open its production lines, and we have a strong and distinguished history in the energy, power, and control markets which led to the formation of what is now the Mid-West Energy Research Consortium. These types of companies are invested in technologies that enable a renewable energy future and will benefit from the clean power plan.

Wisconsin hydropower should also stand to benefit, with companies such as North American Hydro operating hydro plants and Boldt Construction recently completing the installation of a new hydropower facility in Kaukana.

Wind power expansion via the clean power plan would also provide more benefits to Wisconsin.

- Nationwide, the domestic content of wind turbines has increased from 25% prior to 2005 to 67% in 2012. This has lead to a dramatic increase in domestic jobs. National policy plays a huge role, namely the production tax credit (PTC), and hopefully a national clean power plan can supplement or replace that critical policy in some manner to provide the stability needed for this growth industry to continue creating domestic jobs.
- In December 2012, over 80,000 people were employed in the wind energy industry nationally, and that went down to 50,500 by the end of 2013, due to the unstable PTC.
- Wisconsin landowners receive over $2 million per year in land lease payments for hosting wind turbines. These payments keep our energy dollars local and support farmers and local governments.

3. Flexibility or offset value should be requested of EPA related to biogas methane waste usage. Wisconsin has a unique opportunity as a leading dairy state and a leading food processing state to capture the methane from these waste sources and convert it to electricity or other usable energy forms. Methane has approximately 21 times the global warming forcing of carbon dioxide. Therefore, capturing methane and burning it for electricity provides approximately 21 times the equivalent of reducing one unit of carbon dioxide in some other manner.

Given this tremendous multiplying effect, and Wisconsin's unique opportunity to reduce emissions with biogas technologies, we should attempt to gain credit and flexibility from the EPA in this regard. Although these are not power plant emissions, electricity production from biogas could be considered an "adjacent technology" and given credit for the tremendous reductions in CO2-eq emissions. Figuring out a way to provide and monetize these carbon equivalent reduction benefits should create a very substantial driver for our biogas industry, and hopefully lead to a number of co-benefits of greatly increased adoption of biogas digesters for Wisconsin and our citizens (such as reduced manure runoff, reduced pathogens, reduced odor, healthier lakes, increased competitiveness of our dairy industry, and increased competitiveness of smaller dairies).

4. The power sector is undergoing significant changes. EPA needs to recognize these changes are occurring and ensure state compliance is adaptable and flexible.

The nation's electric power sector is undergoing significant changes due to technology development and changing prices of that technology and, potentially, of utility services.

I believe the most important pending situation related to this draft plan is that of electric and plug-in hybrid vehicles. Electric vehicles are beginning to enter the market, and with extremely high customer satisfaction rates (Chevy Volt owners, from my personal conversations with them, love driving 1,000 miles on a tank of gas, and not having to attempt to entertain their kids in the car while they fill up at the gas station. Tesla's latest all-electric vehicle, the Model S, received an overall score of 99, the highest possible score from Consumer Reports).

One major implication of this is that as electric and plug-in hybrid vehicles become more popular and cost-competitive, we will see a transfer of emissions from the transportation sector (consumption of oil/gasoline) into the electric power sector (consumption of coal/natural gas/nuclear/renewables). Given the 2030 horizon of the draft power plan, it is conceivable that significant levels of what previously were transportation sector emissions will enter the power sector. These increased emissions in the power sector will very likely *reduce* the nation's overall carbon emissions, as the carbon emissions from electric/plug-in vehicles will likely be lower than carbon emissions from oil/gasoline vehicles, even in coal-intensive scenarios (see Union of Concerned Scientists, State of Charge 2012, http://www.ucsusa.org/clean_vehicles/smart-transportation-solutions/advanced-vehicle-technologies/electric-cars/emissions-and-charging-costs-electric-cars.html)

However, the EPA's rule will only address the electric power sector and not the transportation sector. The implications of this are that flexibility will absolutely be needed as we progress towards 2030. As an extreme example, if flexibility is not retained and a state or utility faces penalties for not achieving certain levels of carbon reduction in the electric sector only, they could in theory attempt to hinder the adoption of electric or plug-in hybrid vehicles as a means to keep their electric power carbon budget in check. This would not be an ideal outcome, as customer choices that reduce overall emissions should be emphasized and encouraged, and because electric vehicles will run on domestically sourced electricity instead of foreign-sourced oil providing numerous economic and security benefits.

Second, distributed energy technologies will continue to change and be more readily adopted as American citizens seek more control and empowerment. This is a trend that I believe is unstoppable, just as the trend for distributed information technologies has been unstoppable, from desktop computers to laptops to smartphones. The CEO of one of the nation's largest electric utilities, David Crane of NRG Energy, has stated, "(W)e are headed … down the path towards a distributed generation-centric, clean energy future featuring individual choice and the empowerment of the American energy consumer. The only real question is how quickly will this future occur?" (http://www.nrgenergy.com/ceoletter):

As Wisconsinites and Americans take more control over their energy production because technology and pricing enable them to, how will utility-sector emissions be affected? This is an open question but again, calls for the need for flexibility. One possible outcome under a scenario where solar electric prices continue to decline at a rapid pace (following the trend of 50% installed cost reduction over the past 5 years), battery prices or natural gas generator prices decrease quickly, and if customers either wish to be independent or find it cost-effective to do so based on the mix of utility fixed fees and electric rates, you could start to see people "unplug" from the grid by 2030. This could appear to give utilities or states some emission reductions due to fewer customers being on their grid, when in fact it was the "unplugging" and not a utility or state driven carbon-related initiative that led to the grid-level carbon reduction.

Third, Wisconsin utilities are currently proposing to change the way they bill their customers. If approved, the rates people pay on the margin for electricity would decrease, while the fixed monthly fees would increase. Here I would like to focus on the decrease in electric charges. Elasticity arguments and analysis will show that reducing price will increase consumption. This

will take us in a direction of increased carbon emissions and hinder our state's carbon reduction efforts, likely making our carbon targets more difficult and more costly to achieve.

In summary to this item, technologies will be evolving and customer choices will tend to lead towards more distributed technologies and more consumer control, and significant changes may happen by 2030. Utility billing models may be changing too. The final rule from EPA should be flexible enough to handle these changes. The rules need to be set up to guide our electric sector towards lower emissions while encouraging beneficial technologies which may reduce emissions economy-wide.

In Conclusion

Thank you again for the opportunity to provide comments. I am available for further discussion if you should have any questions.

Sincerely,

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