



December 1, 2014  
U.S. Environmental Protection Agency  
Attention: Docket ID No. EPA HQ-OAR-2013-0602  
Mail Code 28221T  
1200 Pennsylvania Ave, NW  
Washington, DC 20460

Via email: o-and-r-docket@epa.gov  
Attention Docket ID No. EPA HQ-OAR-2013-0602

**Re: Water Association Comments on Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (Clean Power Plan)**

Dear Administrator McCarthy:

The following associations, the American Water Works Association (AWWA), the National Association of Water Companies (NAWC), and the National Association of Clean Water Agencies (NACWA), which represent drinking water, wastewater, and reclaimed water providers throughout the country respectfully submit the following written comments in response to the U.S. Environmental Protection Agency's proposed rule regarding "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units" (EPA-HQ-OAR-2013-0602). We appreciate the opportunity to comment on the Clean Power Plan (CPP) proposal, which aims to achieve 30% carbon dioxide emissions reductions (from 2005 as baseline) from existing fossil fuel-fired power plants in the United States by 2030. The CPP will do this by way of state-specific rate-based targets or goals for carbon dioxide emissions from the power sector, as well as provide guidance in developing plans to achieve these goals.

**Overview of Comments and Recommendations**

The increased costs of electricity due to the CPP as proposed will have substantial financial impact on water and wastewater utilities (the water sector). Water and wastewater utilities consume at least 1.8% of electricity nationwide<sup>1</sup> and will face at

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<sup>1</sup> Water Research Foundation and the Electric Power Research Institute. 2013. *Electricity Use and Management in the Municipal Water Supply and Wastewater Industries* – 4454.  
<http://www.waterrf.org/Pages/Projects.aspx?PID=4454>.

least \$414 million in increased electricity costs by 2020 due to the CPP alone (based upon EPA's lower bound projection of 6% average increase in electricity prices). Some estimates place the sector's consumption even higher (3-4%), which would result in a greater increased cost of power.<sup>2</sup> Additionally, the water sector is critically dependent upon a highly reliable and resilient electric grid to perform its essential services. For these reasons, we believe both the financial impacts to and opportunities for the water sector should be carefully considered by EPA while creating the final rule.

Should the EPA determine that the benefits outweigh the costs of this rulemaking we are suggesting the following concepts be explored in an effort to help the water sector mitigate the increased electricity costs.

We believe that the water sector can participate substantially in voluntarily increasing energy efficiency (EE). We also believe the water sector can contribute to renewable energy (RE) generation. To participate in these goals effectively, the following components are necessary in the final CPP rule and its implementation:

1. It must be clear that EE/RE projects undertaken by the water sector (after 2012) can be used towards compliance within the context of the CPP. A clear statement that states should include voluntary water sector EE and RE projects in their State Implementation Plans (SIPs) would go far towards clarifying and encouraging this. The current discussions of demand side efficiency are vague and it is not currently clear if RE generation by any entity other than an electric utility would count at all. Without a clear signal if the projects will count, it will be difficult for states and electric utilities to justify incentive programs and difficult for the water sector to pursue such projects.
2. Voluntary financial incentive programs will need to be established to enhance water sector participation in EE/RE opportunities. EPA's regulatory analysis anticipates a \$10 billion increase in EE/RE spending by 2020. 1.8% of this (equal to the sector's estimated percentage of electricity use) would be \$180 million per year by 2020 in incentive funding directed at water and wastewater utilities (greater if a higher electricity estimate is used). We believe the sector can readily utilize this amount of funding, or even more, for efficiency projects. Many efficiency measures are well established and most utilities will be able to find some opportunities from the portfolio of methods and best practices. Numerous projects are likely to be both capital intensive and require ongoing costs to conduct the necessary monitoring and

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<sup>2</sup> EPA Energy Efficiency for Water and Wastewater Utilities webpage, <http://water.epa.gov/infrastructure/sustain/energyefficiency.cfm>.

verification of efficiency gains. Therefore, we believe such incentive programs are necessary for success in this sector and to meet the ambitious EE/RE goals in the CPP.

3. Participation in these programs must be entirely voluntary for the water sector. Water and wastewater utilities provide essential public health and environmental protection services. Although greater EE will often be achievable without interfering with these essential services, there will be times where more energy intensive choices must be made to meet public health protection, environmental protection, regulatory requirements, supply adequacy, or other needs. Although we see substantial opportunity for EE/RE in the sector, we do not believe it is appropriate for EPA or any SIPs to create EE/RE requirements for water or wastewater utilities at this time.
4. The method of compliance determination and enforcement under the CPP must be clarified with respect to EE and RE. Non-compliance with the Clean Air Act (CAA) can carry substantial monetary penalties and liabilities. We believe EPA should clarify that water and wastewater utilities are responsible only for submitting proper monitoring and verification materials to the sponsoring state or electric utility and are not considered regulated entities in this rule nor subject to CAA enforcement. Without this clarification, some EE/RE projects may not move forward due to liability and regulatory concerns.
5. Technical assistance programs should also be available to assist the water sector (and other sectors) in identifying potential EE/RE opportunities and making recommendations. This is especially important for smaller water and wastewater utilities that may not have the resources or expertise to participate in incentive programs without assistance but may nevertheless have potential EE/RE projects.

We encourage EPA to consider these needs of the water sector while finalizing the rule. The remaining comments provide our rationale for these conclusions and more in-depth background relevant to the water sector's potential role within and concerns about the CPP.

### **Water/ Energy Context**

Energy and water underpin our economy and are two critical and interdependent resources that rely on each other for their production. The reduction in the use of one results in reductions in the other of the other. This water-energy nexus delineates a close, if not inseparable, relationship between energy production (extraction and

electricity generation) and water system delivery (treatment and distribution). A 2013 joint Water Research Foundation and Electric Power Research Institute report,<sup>3</sup> the treatment and delivery of water and wastewater throughout the U.S. requires 69.4 Terawatt hours (“TWh”) of electricity each year. These processes consume approximately 1.8% of total energy consumption in the United States, and some estimate the percentage is higher. U.S. EPA’s website estimates the sector’s use at 3-4%.<sup>4</sup> Expanding beyond the water and wastewater utilities alone to all significant forms of embodied energy in water including agriculture, hot water heating in the residential and commercial sectors, and other uses is about 13% of U.S. electricity consumption.<sup>5</sup> Another report by researchers at the University of Texas concluded that energy use associated with the public water supply is 4.1% of the nation’s annual primary energy consumption and 6.1% of national electricity consumption.<sup>6</sup> The actual percentage of national energy consumption is largely dependent upon what activities and categories researchers include.<sup>7</sup> Regardless of exact figures, the water sector undoubtedly uses a substantial percentage of the nation’s electricity energy to provide essential water and wastewater services.

Water utilities use a considerable amount of energy pumping water to consumers. Many utilities are beginning to implement pump efficiency programs that can reduce the amount of energy required to power their pumps, through both hardware replacement and system optimizations. It is estimated that improving water pump efficiency across the entire sector would yield a savings of as much as 10 TWh per year or about 14% of the sector’s electricity use.<sup>8</sup> Efficiencies gained by the water sector can therefore go a long way toward not only meeting the EPA greenhouse gas emissions goals, but also reducing long-term water utility costs to consumers throughout the country. In addition, EE measures and RE projects reduce the criteria and toxic pollutant emissions associated with the equivalent fossil energy production, providing benefits to the local communities where these projects are located. EPA should therefore encourage states to include financial incentive programs for voluntary water and wastewater utility EE in their SIPs.

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<sup>3</sup> Water Research Foundation and the Electric Power Research Institute. 2013.

<sup>4</sup> EPA *Energy Efficiency for Water and Wastewater Utilities* webpage.

<sup>5</sup> Bevan Griffiths-Sattenspiel and Wendy Wilson, *The Carbon Footprint of Water*, River Network, May 2009.  
<http://www.rivernetwork.org/resource-library/carbon-footprint-water>

<sup>6</sup> Kelly M. Twomey and Michael E. Webber, *Evaluating the Energy Intensity of the US Public Water Supply*, Proceedings of the ASME 2011 5th International Conference on Energy Sustainability, ES2011-54165, August 2011.

<sup>7</sup> Claudia Copeland, *Energy-Water Nexus: The Water Sector’s Energy Use*, Congressional Research Service, at pg. 3-4, available at <http://fas.org/sgp/crs/misc/R43200.pdf>

<sup>8</sup> Water Research Foundation and the Electric Power Research Institute. 2013.

The water sector has the potential to contribute significant carbon emission reductions through the implementation of EE and RE measures. If EPA moves forward with the CPP, we urge the agency to provide states with maximum flexibility to support EE and RE measures stemming from the water-energy nexus. We also encourage EPA and the states to proactively explore programs that might be needed to unlock further progress toward enhanced water EE/RE.

Given the close relationship that exists between energy and water, the undersigned organizations respectfully encourage EPA to clarify in the final rule that states will be allowed to account for measurable RE and demand-side EE measures taken by the water and wastewater industries (post-2012) in their CPP Section 111 (d) state plans.

Moreover, the agency indicates that numerous questions and areas remain where further clarity and guidance are needed to allow states and other entities (such as electric utilities, Electricity Generating Unit (EGU) operators, energy service companies (ESCOs) and other providers of energy services to cost-effectively use EE for CPP compliance, which we wish to address with the following comments.

### **Energy Efficiency in the Water Sector As Emissions Reduction Strategy**

We are pleased that EPA included the use of EE measures as one element of the overall emission reduction portfolio or building block approach. We applaud the agency's encouragement of states to include end-use EE in their compliance plans. Further, we commend EPA for allowing a large degree of state flexibility to craft compliance solutions to design programs to meet the federally-mandated targets for cutting covered emissions that best match their particular contexts.

More efficient use of energy reduces the amount of fuel required to provide energy services and the emissions and negative environmental impacts associated with fuel use. Currently, water sector renewable energy and demand-side measures may be under-utilized in reducing emissions. There are many reasons why this is the case, although significant contributors include lack of awareness of some of the efficiency opportunities among the sectors (for example, amongst demand side efficiency programs), competing high priority public health needs and necessary infrastructure upgrades, and lack of funding for the water sector to implement efficiency programs. If a flexible approach is adopted in the CPP, multiple benefits could be derived from advanced technological, renewable and demand-side EE measures in the water sector. EGUs, energy users and states could realize cost savings by providing incentives for the water sector to voluntarily increase efficiency and implement renewable energy generation. One large water company alone, serving customers in many states, has replaced or refurbished 140 water

pumps over the last four years with more energy efficient pumps, saving 12 million kilowatt-hours per year, a reduction of approximately 18 million pounds per year of carbon emissions. A relatively modest-sized utility recently installed much more efficient blowers, mixers, and aeration equipment at its wastewater treatment plant, thereby reducing annual electricity use by about 30 percent, or about 3,000,000 kilowatt-hours a year.

### **The Clean Power Plan Brings Challenge and Opportunity to the Water Sector**

The draft CPP presents both major challenges and potential significant opportunities to the water sector. A win-win scenario of reducing the financial challenges and furthering the overall goals of the CPP can be achieved by encouraging states to official financial assistance/incentives to the water sector. EPA's own regulatory impact analysis estimates that retail electricity rates will increase by an average of 6-7% by 2020 due to this rule alone (on top of any other factors driving up the cost of electricity). Drinking water utilities are estimated to consume at least 1% of U.S. electricity, which would translate to \$230 million or more in increased electricity costs by 2020 from this rule. Similarly, wastewater utilities consume at least an estimated 0.8% of U.S. electricity for an additional \$184 million in increased electricity costs by 2020, or a combined total of \$414 million for the 1.8% electricity use. If higher electricity percentage estimates are used, the water and wastewater sector costs increase proportionally.

Some parts of the country are expected to experience higher electricity rate increases than EPA's projected average, and some organizations predict that EPA's estimates are low and actual rates may go up by substantially more than estimated. The cost of electricity is often the single largest individual outside expense at water utilities. An increase in the cost of electricity to water utilities from the CPP means that fewer funds will be available for other high priority activities (such as infrastructure repair) and/or that water and wastewater rates and charges will need to increase to offset the increased power cost. Recognizing that there are many other challenges that have been driving up the full cost of water service in recent years (including infrastructure repair, compliance with new regulations, and others), we believe that EPA should carefully examine the draft rule to find ways to help minimize the impacts of increased costs of power to the water sector.

In addition to the increased cost of electricity, many of our organization's members have expressed concerns over electric reliability. As providers of essential services for public health and sanitation, the water sector is critically dependent upon a reliable electric grid to provide uninterrupted service 24 hours per day, 365 days per year. We strongly encourage EPA to thoroughly examine all of the claims and discussions surrounding

how the CPP may impact electric reliability and to address any facets of the rule that could potentially lead to reduced grid reliability before finalizing the rule.

**To promote energy efficiency, projects for the water sector should clearly be stated as applicable under building block 4**

As part of building block 4, we believe that water sector EE projects (post 2012) should be eligible to count towards state goals, provided the necessary monitoring and verification has been completed. The final rule should indicate that EE projects completed by non-electric organizations can be counted towards the overall emissions reductions. This would allow for states and the electric sector to run incentive programs to help foster improvements in the water sector and in other major electricity consumers. Because water infrastructure is generally long lived, there are many pumps, motors, treatment facilities, pipes, and others systems within the water sector that are at several decades old. In many cases, these systems are much less energy efficient than their modern equivalents. Additionally, substantial amounts (in many cases, 15-20% or more) of treated drinking water is lost to distribution system leaks in many water utilities. Every gallon of water that does not make it to customers means that an additional gallon must be treated and pumped to replace it, adding to the sector's overall electricity consumption and associated greenhouse gas emissions. Incentive programs to assist the water sector with the cost of the capital and/or ongoing monitoring and verification costs could help to accelerate the replacement of aging, less efficient infrastructure where it is appropriate to do so, and in some instances increase both water and energy efficiency simultaneously with water loss and leak control. There are also system optimization processes and end-user water efficiency programs that can help to reduce electricity consumption if further advanced through incentive funding.

Water and wastewater utilities are particularly well suited to participating in EE programs. These organizations are ideal EE/RE demand side candidates because they have the ability to measure and verify actual energy savings and are professionally staffed, operated continuously, and present in almost every community nationwide. Sourcing and conveying water, treating water to potable standards, distributing drinking water to the public, collecting wastewater, and treating wastewater for reuse or discharge are inherently energy intensive processes. There is considerable variability of the embodied energy within water or treated wastewater (the energy required to produce and deliver/collect it) based upon source, treatment, distribution, and collection factors. There are combinations of both relatively standard and straightforward efficiency upgrades (e.g., swapping out pumps or fixing leaks) as well as larger custom efficiency solutions (e.g., instituting a system optimization program or installing new energy recapture equipment). Both types of upgrades within the water sector should be eligible for state or ratepayer funded voluntary efficiency programs, as well as any

federal assistance or technical support programs. EPA should make sure that states are aware of these opportunities, and we encourage EPA to mention them in the final rule, in guidance, and in conversation with the states.

**Renewable projects implemented by entities other than electric utilities should also apply towards compliance**

EPA should also clearly indicate that RE projects completed by organizations other than electric utilities should be able to qualify towards the requirements of the CPP. The water sector has a growing portfolio of RE options available to it (e.g. solar, wind, and micro-hydro). Wastewater utilities have multiple methods of recapturing the embedded energy in wastewater. The biosolids and biogas produced through the wastewater treatment process can be used as renewable substitutes for fossil fuels and converted to electricity, and the heat from wastewater and the treatment processes may also be used to reduce dependence on fossil fuels. Many new methods of capturing the energy in wastewater continue to be explored and developed, including use of wastewater fuel cells to capture electricity created when microbes convert compounds of carbon and nitrogen.

Although many utilities have undertaken such projects already, a clear indication that renewable projects at water and wastewater utilities can be used towards meeting state goals will encourage the creation of incentive programs and accelerate the installation (where appropriate) of these technologies throughout the water sector.

**Compliance and Enforcement should fall to the organization(s) coordinating the efficiency and renewable programs, not to individual projects**

Our organizations believe that enforcement and compliance measures for EE projects undertaken to help reach the CPP's goals should be clearly defined in the final rule. The draft is ambiguous and measures should be upon the state or the entity (whether state, electric, or third party) managing the overall EE program, not on the individual sites implementing EE / RE. Sites implementing EE / RE should be responsible only to complete the necessary monitoring and verification for the managing entity. We believe that financial incentives for and contractual obligations imposed on individual EE / RE entities will be sufficient for assuring the proper recording of projects. If the nature of compliance and enforcement actions is not clear, some potential EE / RE projects may not move forward due to concerns over liability under the CAA such as the potential for large fines.



## Conclusion

The risks of climate change to the water sector are significant, so the sector supports the overall goal of reducing carbon pollution. Although there are both substantial cost and electric grid reliability challenges for the water sector, the CPP potentially brings opportunity for the water sector through increasing EE and RE. There are several potential barriers that could prevent seeing the full potential of the water sector to participate. EPA can and should help to remove these barriers by stating the potential role of the water sector in EE/RE programs in the preamble and technical support documents of the final rule, by clarifying how renewable energy applies when completed by an entity other than the electric utility, by encouraging states to set up incentive programs for EE/RE in the water sector, and by clearly stating how the compliance/enforcement process for the CPP will work.

On behalf of our organizations' collective members, we thank you very much for your consideration of our comments. If you have any questions regarding these comments please contact any of the undersigned individuals.



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**About AWWA:** AWWA is an international, nonprofit, scientific and educational society dedicated to providing total water solutions assuring the effective management of water. Founded in 1881, the Association is the largest organization of water supply professionals in the world. Our membership includes over 3,900 utilities that supply roughly 80 percent of the nation's drinking water and treat almost half of the nation's wastewater. Our nearly 50,000 total memberships represent the full spectrum of the water community: public water and wastewater systems, environmental advocates, scientists, academicians, and others who hold a genuine interest in water, our most important resource. AWWA unites the diverse water community to advance public health, safety, the economy, and the environment.

**About NAWC:** The National Association of Water Companies (NAWC) is the voice of the private water industry—the organization exclusively representing this group of quality service providers, innovation drivers and responsible partners. NAWC represents companies of varying sizes, from large, investor-owned utilities to smaller companies that serve towns and small municipal entities. NAWC works to promote the private sector as a viable and highly effective solution to developing, financing, and managing water and wastewater projects and systems while ensuring sustainability challenges are met.

**About NACWA:** The National Association of Clean Water Agencies (NACWA) is the leading advocate for responsible national policies that advance clean water. NACWA represents the collective interests of America's clean water utilities nationwide – and their clear commitment to America's waters. For over 40 years, NACWA has been the clean water community's voice in Congress, at the U.S. Environmental Protection Agency and other federal agencies, as well as in the media and in the courts. To learn more about NACWA visit us at [www.nacwa.org](http://www.nacwa.org).