



January 21, 2016

The Honorable Gina McCarthy
Administrator, Environmental Protection Agency
1200 Pennsylvania, Ave., NW
Washington, D.C. 20460

RE: National Hydropower Association Comments on Docket No. EPA-HQ-OAR-2015-0199, *Federal Plan Requirements for Greenhouse Gas Emissions from Electric Utility Generating Units Constructed on or Before January 8, 2014; Model Trading Rules; Amendments to Framework Regulations*

Administrator McCarthy:

On Friday, October 23, 2015, the Environmental Protection Agency (EPA) published in the Federal Register the Clean Power Plan (CPP) final rule and requested comments on a proposed federal plan and model trading rules to implement the CPP. The National Hydropower Association (NHA)¹ submits the following comments and recommendations for consideration.

I. Recognizing Hydropower's Value in the Final Clean Power Plan

In the final CPP, the EPA made a number of important changes that recognize hydropower's value in meeting the goals of the CPP. First, hydropower was included as a renewable energy technology in establishing the best system of emission reduction (BSER). Second, new hydropower (including marine energy and hydrokinetics) installed after 2012, including uprates to existing facilities, is affirmatively deemed an eligible compliance option for states in meeting their reduction targets, and qualifies for generating Emission Reduction Credits (ERC) or allowances. Third, for a handful of states where hydropower plays a unique role, EPA made adjustments to those states' 2012 baseline data to recognize average hydropower output, because in those states, hydropower is a significant portion of their generation portfolio and in 2012 those states were significantly above historical averages.² Finally, EPA recognized Canadian hydropower as a compliance option for states, with certain requirements.³ NHA applauds the EPA for making these important changes and recognizing hydropower's value in meeting the goals of the CPP.

¹ NHA is a national non-profit association dedicated exclusively to advancing the interests of the U.S. hydropower industry, including conventional, pumped storage, and new marine and hydrokinetic technologies. NHA's membership consists of over 220 organizations, including consumer-owned utilities, investor-owned utilities, independent power producers, project developers, equipment manufacturers, environmental and engineering consultants, and attorneys.

² These states include Idaho, Maine, Montana, Oregon, South Dakota, and Washington.

³ Canadian hydropower must be incremental and installed after 2012, meet certain evaluation, measurement and verification (EM&V) requirements, be connected to the U.S. grid, and must have a Power Purchase Agreement or other contract for delivery of power with an entity in the U.S.

NHA was disappointed to learn that the output from an energy storage unit, such as pumped storage, was not recognized as a compliance option in the CPP final rule and excluded from the federal plan and the Clean Energy Incentive Program (CEIP). EPA reasoned that energy storage does not directly substitute for electric generation from the grid or avoid electricity use from the grid. Yet, EPA acknowledged energy storage is an enabling measure that facilitates greater use and penetration of renewable energy, stores renewable energy during times of excess generating capacity, and can take pressure off of fossil units when responding to sudden shifts of electrical demand. These are significant benefits and NHA recommends the EPA revisit the role, value, and eligibility of pumped storage in meeting the goals of the CPP. At a minimum, NHA recommends that generation from new pumped storage facilities and additional generation from upgrades at existing pumped storage facilities, installed after 2012, be considered a compliance option for states in meeting their reduction targets, and included in the CEIP.

II. Hydropower Should to be Included in the Clean Energy Incentive Program

The CEIP, a new incentive intended to encourage states and power producers to deploy carbon reducing investments as early as possible, was announced for the first time in the final CPP and the proposed federal plan. Specifically, the CEIP is “designed to incentivize investment in certain types of renewable energy projects, as well as demand-side energy efficiency projects implemented in low income communities, that generate MWh or reduce end-use energy demand during 2020 and/or 2021.”⁴

Unfortunately, hydropower is excluded from participating in the CEIP, which only recognizes wind and solar renewable energy technologies. Although NHA supports the CEIP in concept, we do not support the current design or eligibility requirements as it arbitrarily chooses winners and losers among renewable energy technologies in overcoming the challenges related to climate change. NHA believes that hydropower should be recognized and given the same opportunities to reduce carbon emission and participate in incentive programs. As such, to realize the CEIPs full potential and to meet its stated purpose of deploying carbon reducing investments as early as possible, especially reliable baseload renewable resources, the CEIP should be modified to include hydropower, in all its forms, as an eligible renewable technology.

⁴ Fed. Reg. 64969-70.

Both the final CPP and the proposed federal plan and model trading rules outline the CEIP's design, eligibility requirements, and justifications for the CEIP's narrow scope of eligible technologies. NHA addresses these in turn.

A. EPA's Justifications for the CEIPs Narrow Scope are Arbitrary

The EPA provides a number of justifications for favoring and incentivizing wind and solar technologies over all other forms of renewable energy. However, these justifications are not unique to wind and solar and apply equally to hydropower and other renewable technologies. The EPA's justifications can generally be grouped into three buckets: 1) timeframes related to developing renewable energy projects; 2) providing incentives to execute on planned investments in order to avoid shifting investments towards natural gas; and 3) the urgency in meeting the challenges of climate change.

1. Timeframes: To support the exclusion of hydropower, and other renewable and carbon-free technologies, from participating in the CEIP, the EPA states that "In contrast to other CO₂-reducing technologies – including other zero-emitting or renewable energy technologies – solar and wind projects often require lead times of shorter duration, which would allow them to generate MWh beginning in 2020."⁵

NHA concedes that licensing and constructing a hydropower facility generally takes longer than wind and solar projects. But longer lead times should not be an excuse to exclude hydropower from incentives that encourage growth and development. Rather, the CPP and the CEIP provide an opportunity to improve hydropower's outdated licensing process. Including hydropower in the CEIP, coupled with its unique attributes and ancillary services, could drive states to develop innovative approaches to licensing hydropower projects that will meet the timeframe requirements outlined in the CEIP.

Even under hydropower's current licensing process there are many examples of projects being licensed and built within the timeframes outlined in the CEIP. For example, the Federal Energy Regulatory Commission (FERC) maintains a list of projects that were expedited in less than one year, and between 2006 and 2012, 46 hydropower licenses were issued in under twelve months representing over 39,000 kW's⁶. For small hydropower developers seeking a FERC exemption the median project timeline between exemption application and commercial operation is 2.5 years, and the median timeline between start construction to

⁵ Fed. Reg. 64831.

⁶ Available at: <http://www.ferc.gov/industries/hydropower/gen-info/licensing/small-low-impact.asp>

placed- in-service is 17 months.⁷ Similarly, under the Hydropower Regulatory Efficiency Act of 2013 (HREA), Congress removed certain small conduit hydropower projects from FERC jurisdiction and since HREA's passage, 57 projects have received "qualifying conduit" status, representing over 24,000 Kw's.⁸ For these projects it takes FERC between two and three months to issue a determination. Finally, the Bureau of Reclamation's Lease of Power Privilege (LOPP) process demonstrates hydropower projects can meet the CEIP's timeframes. Under the LOPP, Reclamation has approved a number of projects representing over 49,000 kW's. On average, these projects, from project initiation to operation, takes between 2.5 and 3 years. NHA asks the EPA to clarify why these types of projects are excluded from the CEIP.

In addition, the CEIP requires renewable energy projects to commence construction following the submission of a final state plan to the EPA, or after September 6, 2018, for a state that chooses not to submit a complete state plan by that date.⁹ EPA created the timelines in the CEIP and EPA can easily modify the timelines to accommodate hydropower or other renewable energy technologies with longer lead times, while still meeting the goals of the program. NHA encourages the EPA to reexamine whether the current eligibility window maximizes the incentive for the deployment of renewable energy technologies. NHA commits to working with the EPA on developing an eligibility window that will achieve these goals.

2. Renewable Energy Investments: Through the CEIP the EPA expressed interest in preserving investments in wind and solar technologies and preventing these investments from shifting towards other resources, mainly natural gas. The CEIP states that the "EPA seeks to preserve the incentive for project developers to execute on planned investments in all types of solar and wind technologies..." and "targets in the proposed rule could potentially shift investment from renewable energy to natural gas, thus dampening the incentive to develop wind and solar projects, in particular." Further stating, "the incentives and market signal generated by the CEIP can help sustain the momentum toward greater renewable energy investment in the period between now and 2022 so as to offset any dampening effects that might be created by setting the start date 2 years later than at proposal."¹⁰

NHA is equally concerned that the CPP could shift investment away from hydropower, and similar to wind and solar, hydropower projects are competing against the same economics supporting natural gas development. The hydropower industry is heavily invested in project development, which includes building

⁷ 2014 *Hydropower Market Report* (April 2015) p. 21, 22. Available at: http://energy.gov/sites/prod/files/2015/05/f22/2014%20Hydropower%20Market%20Report_20150512_rev6.pdf

⁸ Available at: <http://www.ferc.gov/industries/hydropower/indus-act/efficiency-act/qua-conduit.asp>

⁹ Fed. Reg. 64830, 64978.

¹⁰ Fed. Reg. 64831.

new hydropower on existing infrastructure (non-powered dams, conduits and canals), capacity additions, and uprates at existing hydropower facilities, among others. For example, the Department of Energy's *2014 Hydropower Market Report* noted "significant capital investment toward modernizing and upgrading the existing fleet is constantly taking place. Since 2005, the industry has invested at least \$6 billion in refurbishments, replacements, and upgrades to hydropower plants."¹¹ Another \$1.96 billion is the estimated cost of 16 new projects that the Market Report identified as being under construction as of December 2014.

Arguably, hydropower needs an incentive like the CEIP even more than wind or solar do, because wind and solar benefit from other federal and state incentives that will continue to drive their growth in the future, where similar incentives for hydropower are limited or non-existent. Two examples include the federal Production and Investment Tax Credits (PTC / ITC), and state Renewable Portfolio Standards (RPS).

Under the 2015 end-of-year omnibus and tax extenders package, the Production Tax Credit (PTC) was extended for wind through 2019 and the Investment Tax Credit was extended for solar through 2021. Hydropower, along with other baseload renewable technologies, received only a two-year PTC extension through the end of 2016 and continues to receive half the credit that wind receives. Both the PTC and ITC extensions for wind and solar will continue to drive investments in these technologies through the early phases of the CPP, in addition to the incentive provided under the CEIP.

State RPS's will also continue to drive investment in wind and solar technologies for the foreseeable future. Generally, RPS' recognize wind and solar technologies without qualifications and sometimes these technologies enjoy specific carve-outs, such as distributed generation requirements. Alternatively, hydropower is treated inconsistently in RPS policies, often subject to eligibility conditions related to age, size, and placed-in-service date, or excluded all together. Currently, RPS policies exist in 29 states and Washington, D.C. and apply to 54% of total U.S. electricity sales. These RPS policies are a key driver for renewable energy growth, primarily wind and solar.¹² This demand will continue well into the next decade and early phases of the CPP, as 22 states will not reach their final RPS targets until 2020 or after: 8 states will reach their target in 2020, 2 states in 2021, one state in 2022, and seven states in 2025.

Simply stated, hydropower is not receiving the same level of policy support under the CEIP and these other policies, placing investments in hydropower projects at greater risk. Including hydropower in the CEIP

¹¹ *2014 Hydropower Market Report*, p. vi.

¹² See generally: <http://www.cesa.org/assets/2015-Files/RPS-Summit/Galen-Barbose-11.5.15.pdf>

would help reduce this risk and send an important market signal for additional hydropower growth and development.

3. Climate Change Urgency: The EPA states that the CEIP was also created to respond to the urgency of meeting the challenge of climate change. Specifically, in “targeting investments in wind, solar, and low-income energy efficiency, it focuses on the kinds of measures and technologies that are the essential foundation of longer-term climate strategies, strategies that inevitably depend on the further development and widespread deployment of highly adaptable zero-emitting technologies.”¹³

Hydropower is the foundation of renewable energy in the United States and globally, and has been generating renewable, carbon-free, energy for over a century. Hydropower’s 100 gigawatts of installed capacity helps the U.S. avoid nearly 200 million metric tons of CO₂ every year – the equivalent of over 42 million passenger cars. In terms of “highly adaptable zero-emitting technologies”, hydropower is the most flexible and adaptable renewable energy resource available. It provides baseload power, 98% of the U.S.’s energy storage, and perhaps most importantly, provides a solution to the challenges of integrating large amounts of variable generation, like wind and solar, enabling their widespread deployment.

There is also tremendous hydropower growth potential related to powering non-powered dams, efficiency upgrades and capacity additions at existing facilities, pumped storage, and marine and hydrokinetics.¹⁴ At non-powered dams alone, the Department of Energy estimates 12 GWs of new potential.¹⁵

For these reasons, the EPA, other federal agencies, and the states should review existing policies and incentives and establish new ones that recognize the value of the existing fleet and its flexibility, and encourages new growth. Doing so will ensure that hydropower will serve as a powerful tool in addressing the challenges of climate change.

B. EPA’s Interest in Incentivizing Technology and Accelerating the Decline in the Costs of Technology Should Not be Limited to Wind and Solar

In support of the CEIP, the EPA also relied on the Clean Air Act’s (CAA) “technology-forcing” provisions under section 111. Specifically, “consistent with the Clean Air Act’s design to incentivize technology and accelerate the decline in the costs of technology,” EPA “seeks to drive the widespread development and deployment of wind and solar, as these broad categories of renewable technologies are essential to longer

¹³ Fed. Reg. 64831.

¹⁴ See generally: <http://www.unlockhydro.org/>

¹⁵ See generally: http://www1.eere.energy.gov/water/pdfs/npd_report.pdf

term climate strategies.”¹⁶ In describing the benefits of the CEIP, the EPA “believes that stimulating or supporting early investment in renewable energy generation technologies could accelerate the rate at which the costs of these technologies fall over the course of the interim performance period.”¹⁷

NHA is not aware of any limitation in the CAA that prevents the EPA from incentivizing all renewable technologies. The same technology forcing provision in the CAA should also be used to drive down the cost of hydropower, including marine and hydrokinetic technologies.

Although hydropower is a good long-term investment providing some of the lowest electricity rates in the country, the up-front costs of new hydropower development is expensive and must be reduced in order to compete with other renewable energy options. These up-front costs demonstrate the need for incentives and initiatives to improve project economics. Numerous reports have shown that the cost of wind and solar technologies have dropped significantly in the past decade, without the assistance of the CEIP.

Consider these select examples:

<u>Wind Examples</u>
<i>Cost of Wind Energy in Michigan Declines by Half</i> (North American Windpower, February 16, 2015), Available at: http://www.nawindpower.com/e107_plugins/content/content.php?content.13938
<i>Market Grows for Wind Energy as Leading U.S. Brands Lock in Low Prices</i> (American Wind Energy Association, April 8, 2015), Available at: http://www.awea.org/MediaCenter/pressrelease.aspx?ItemNumber=7408
<i>Study Finds that the Price of Wind Energy in the U.S. is at an All-time Low, Averaging under 2.5¢/kWh</i> (Lawrence Berkeley National Laboratory, August 10, 2015), Available at: http://newscenter.lbl.gov/2015/08/10/study-finds-that-the-price-of-wind-energy-in-the-united-states-is-at-an-all-time-low-averaging-under-2-5%2a2kwh
<i>Texas Wind Power Is So Cheap, Electricity Providers Are Giving It Away</i> (UtilityDive.com, November 10, 2015), Available at: http://www.utilitydive.com/news/texas-wind-power-is-so-cheap-electricity-providers-are-giving-it-away/408902

<u>Solar Examples</u>
<i>Why Solar Costs Will Fall Another 40% in Just Two Years</i> (January 20, 2015), Available at: http://reneweconomy.com.au/2015/why-solar-costs-will-fall-another-40-in-just-two-years-21235
<i>Solar Becoming 'Least-Cost Option' for U.S. Utilities</i> (PV Magazine, May 5, 2015), Available at:

¹⁶ Fed. Reg. 64831.

¹⁷ Fed. Reg. 64832.

http://www.pv-magazine.com/news/details/beitrag/solar-becoming-least-cost-option-for-us-utilities_100019329/#axzz3ZGDRxevB

Cheapest Solar Ever: Austin Energy Gets 1.2 Gigawatts of Solar Bids for Less Than 4 Cents:

(GreenTechMedia.com, June 30, 2015), Available at:

<http://www.greentechmedia.com/articles/read/cheapest-solar-ever-austin-energy-gets-1.2-gigawatts-of-solar-bids-for-less>

Price of Solar Energy in the United States Has Fallen to 5 ¢/kWh on Average (Lawrence Berkeley Laboratory, September 30, 2015), Available at: <http://newscenter.lbl.gov/2015/09/30/price-of-solar-energy-in-the-united-states-has-fallen-to-5c2%a2kwh-on-average>

Solar Power Crosses Threshold, Gets Cheaper Than Natural Gas (EnergyWire, August 21, 2015), Available at: <http://www.eenews.net/stories/1060023749>

Wind & Solar Examples

Declining Cost of Wind and Solar Energy Prompts DTE Energy to Lower Customer Bills (North American Windpower, June 4, 2015), Available at:

http://www.nawindpower.com/e107_plugins/content/content.php?content.14295

Wind, Solar Competing with Fossil Fuels (DomesticFuel.com, October 6, 2015), Available at:

<http://energy.agwired.com/2015/10/06/bnef-wind-solar-competing-with-fossil-fuels>

Solar and Wind Just Passed Another Big Turning Point (Bloomberg.com, October 6, 2015), Available at:

<http://www.bloomberg.com/news/articles/2015-10-06/solar-wind-reach-a-big-renewables-turning-point-bnef>

Many more examples exist, but perhaps the one that is most impactful is President Obama’s statement in his final State of the Union address earlier this month, “wind is now cheaper than... conventional power” and “solar is saving Americans tens of millions of dollars a year on their energy bills...” As a country, we have succeeded in driving down the cost of wind and solar technologies. It is time to invest in and incentivize hydropower in order to firm up variable sources of generation, provide reliable baseload power, and combat climate change. Including hydropower in the CEIP could provide the additional incentive and certainty required to follow through on projects that are on the margin, meeting the CAA’s technology-forcing provision.

III. Other Considerations

- Under a rate-based plan and the CEIP, the EPA requires revenue quality metering to measure generation and the subsequent creation of Emission Reduction Credits (ERC). However, this requirement could be problematic as applied to additional generation resulting from nameplate

capacity uprates at existing hydropower facilities, which is an eligible compliance option for states in meeting their reduction targets and qualifies for generating ERCs. The electricity resulting from an uprate cannot be separately measured because there is only one meter that measures total output for each unit. NHA requests the EPA to clarify and provide guidance on the implementation of this requirement as it relates to hydroelectric power. We note a similar issue arose in the context of certifying project upgrades for eligibility under the federal PTC. FERC developed a guidance document that could prove instructive on this issue.¹⁸ NHA offers to work with EPA to develop an appropriate solution as uprates at existing hydropower facilities will be an important component for states in meeting their emission reduction goals.

- NHA wishes to raise one issue that was not addressed in the final CPP, but that we highlighted in our comments on the draft CPP – how does EPA recognize new federal hydropower generation under the CPP and as a compliance option in state plans, including to whom ERCs or allowances will be awarded? For example, many of NHA’s members have contracts for power from the federal system today or may enter into new contracts for power from the federal system in the future. Similarly, the Bureau of Reclamation, the Army Corps of Engineers, the Tennessee Valley Authority, and the Power Marketing Administrations are re-investing in the federal system. Reclamation alone reports nearly 3000 MWs of new capacity brought on-line through capital investments in last several years. NHA encourages the EPA to provide guidance on these issues, which will aid the development of state plans.

IV. Conclusion

NHA applauds the EPA for recognizing hydropower’s value and role in meeting the goals of the CPP and EPA’s consideration of our comments on the draft proposal. We appreciate the opportunity to provide comments on the CEIP and recognize the importance of this incentive program in meeting the President’s climate goals. NHA strongly believes that hydropower’s inclusion in the CEIP would send a critically important signal to the states and the industry that hydropower is valued and is an important tool in achieving a low-carbon future.

Given hydropower’s longstanding history, globally and domestically, no other renewable energy resource has done more to address the challenges of climate change. Whether it’s the clean and renewable energy it generates, the grid stability it provides, or its societal benefits related to irrigation, flood control, recreation, or minimizing the impact of droughts, hydropower is an important resource that policy should

¹⁸ See: <http://www.ferc.gov/industries/hydropower/gen-info/comp-admin/credit-cert.pdf>

support. Given the high upfront cost of hydropower development and the tremendous opportunities for the growth of this clean and flexible non-emitting source, the EPA should reconsider its current proposal and ensure hydropower's eligibility in the CEIP. Picking winners and losers, as the CEIP does, creates even stronger market incentives for wind and solar and will most assuredly negatively impact hydropower market opportunities.

We appreciate the opportunity to comment and look forward to working with the EPA as we move into implementation of this important policy.

Respectfully submitted,

A handwritten signature in cursive script that reads "Linda Church Ciocci". The signature is written in black ink and is centered on the page.

Linda Church Ciocci, Executive Director