

[Union of Concerned Scientists

January 21, 2016

To: Administrator Gina McCarthy

cc: Janet McCabe, Acting Assistant Administrator, Office of Air and Radiation

Docket ID 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; Vol. 80, Federal Register, No. 205, Friday, October 23, 2015. Environmental Protection Agency: 40 CFR Parts 60, 62, and 78.

U.S. Environmental Protection Agency, EPA Docket Center, Mail Code: 28221T, 1200 Pennsylvania Ave, NW, Washington, DC 20460.

Submitted directly to *Regulations.gov*

Dear Administrator McCarthy,

The Union of Concerned Scientists (UCS) strongly supports the actions the Environmental Protection Agency (EPA) has taken with regard to regulating carbon emissions from existing fossil fuel-fired power plants under section 111(d) of the Clean Air Act through the Clean Power Plan (CPP). The final emission guidelines are the outcome of a significant outreach and stakeholder engagement process on the part of the EPA, and as a result, the final rule represents a far stronger product than that which had been originally proposed. UCS commends this effort, and hopes that the same such dedication to an engaged and open rulemaking will be embraced in the coming months with the finalization of the federal plan and model trading rules. UCS provides comments in the following pages in service of that effort.

UCS puts rigorous, independent science to work to solve our planet's most pressing problems. We work on behalf of our more than 450,000 supporters and network of nearly 18,000 scientists to advance public awareness of both the science of climate change and the solutions available to help lower emissions and mitigate some of the worst impacts of climate change. Our organization has a long history of driving the development of policies that advance renewable energy and energy efficiency deployment. This history includes in-depth engagement with the formation and evolution of the CPP, particularly through modeling analysis¹ and technical comments² highlighting the benefits of an increased role for renewable energy under the rule, and more recently in comments submitted in support of the proposed Clean Energy Incentive Program (CEIP)³.

UCS believes that the EPA's proposed model trading rules go a long way in providing useful, beneficial guidance to states in terms of meeting the emission requirements of the CPP. These model rules will be heavily relied upon by states as they develop their compliance plans, and thus it is critical that the EPA provide a comprehensive menu of viable and allowable options. In particular, the EPA should make clearer to states that resources like distributed

¹ Cleetus, R., S. Clemmer, J. Deyette, S. Mullendore, and J. Richardson. 2014. *Strengthening the EPA's Clean Power Plan*. Cambridge, MA: Union of Concerned Scientists. Online at www.ucsusa.org/sites/default/files/attach/2014/10/Strengthening-the-EPA-Clean-Power-Plan.pdf, accessed on January 12, 2016.

² Union of Concerned Scientists. 2014. *Technical comments on the Environmental Protection Agency (EPA) Proposed Rule: Carbon Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*. Cambridge, MA. Online at www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2013-0602-33893, accessed on January 12, 2016.

³ Union of Concerned Scientists. 2015. *Technical comments on the Clean Energy Incentive Program (CEIP) Design and Implementation*. Cambridge, MA. Online at www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2015-0734-0097, accessed on January 12, 2016.

generation are approvable and cost-effective mechanisms for complying with the rule, and that under a mass-based approach, the new source mass complement approach provides the most rigorous, cost-effective, and future-looking leakage-mitigation pathway.

UCS also believes that the two federal plan approaches laid out by the EPA have the potential to be strong implementation pathways for states that fail to take action to develop their own plans. Between these two methods, UCS strongly encourages the EPA to select the mass-based approach as its final path forward for states subject to a federal implementation plan. A mass-based approach provides the most certainty around achieving a specific emissions outcome, and provides room for incentivizing a wide variety of emission-reduction technologies. Regardless of the approach the EPA selects, however, UCS provides comments that highlight areas for improvement in both of the proposed federal implementation plan approaches, so as to ensure the development and implementation of the strongest final action.

We again thank the EPA for the opportunity to participate in the development of the best implementation approaches possible, and request that the agency takes these comments into consideration as it works to finalize the CEIP, model trading rules, and federal plan.

On behalf of the Union of Concerned Scientists:



Kenneth Kimmell, *President*

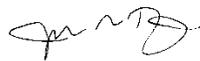
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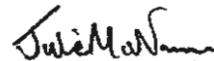
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1. High-Level Guidance on Implementation of the Final Emission Guidelines

- UCS recommends that the EPA adopt a mass-based approach for implementation of the federal plan.
- UCS supports the EPA's timeline for finalizing the model trading rules as soon as possible, but urges the EPA to signal its intentions with regard to the federal plan approach in advance of September 2018.
- UCS believes that the administrative changes put forward by the EPA regarding the implementation and administration of section 111(d)—applicable to both the CPP and other 111(d) rules—are sensible, and have the potential to benefit states and the EPA alike.

In support of implementing the final greenhouse gas (GHG) emission guidelines for existing fossil fuel-fired electric generating units (EGUs) under the Clean Air Act, as finalized August 3, 2015, and effective December 22, 2015, the EPA has since proposed federal plans and model trading rules for both mass- and rate-based emission trading programs. UCS strongly supports the EPA's actions in finalizing the CPP, and believes that the EPA has done a reasonable job of proposing fair, flexible, and effective emission trading programs under its rate- and mass-based approaches. However, UCS also believes that the EPA can do more, and offers the subsequent comments—both in this section and the sections that follow—in support of increasing the effectiveness and rigor of the EPA's proposed implementation approaches. Foremost among these recommendations is guidance regarding the specific implementation pathway that UCS believes the EPA should choose for states requiring a federal plan.

1.1. UCS recommends that the EPA adopt a mass-based approach for the federal plan.

UCS commends the EPA for the flexibility allotted to states in achieving CPP compliance through its promulgation of both mass- and rate-based model trading rules. At the same time, UCS supports the EPA ultimately employing a single approach across all states subject to implementation of a federal plan. The EPA correctly highlights many of the benefits available to it and affected EGUs through the adoption of a single form of federal trading program, principal among them being the economic efficiencies introduced through the construction of the broadest trading program possible, and the administrative efficiencies gained through simplified planning and administrative procedures.⁴ Under a single federal implementation plan approach, UCS recommends that the EPA administer a mass-based emissions trading program.

A mass-based approach to the CPP would build on a long history of successful implementation of such trading programs, including for the regulation of carbon dioxide (see, for example, the Regional Greenhouse Gas Initiative [RGGI]⁵). While some states may benefit from the format of a rate-based approach, we believe that from a national-level perspective, a mass-based approach provides the greatest certainty around true achievement of an emissions budget. Furthermore, a mass-based program is likely to present a lower administrative burden than a rate-based approach, and has been successfully promulgated by the EPA, and incorporated by industry, many times over.⁶ UCS also strongly believes that over the long term, a mass-based scheme will be best able to incorporate additional carbon mitigation efforts that must be developed to cover other parts of the economy. Given the rapidly expanding scale and scope of climate reduction needs in support of increasingly aggressive climate goals, a consideration of the CPP's potential integration with other carbon emissions programs is not only useful, but prudent.

1.2. UCS supports the EPA's timeline for finalizing the model trading rules, but recommends that the EPA signal its proposed federal plan approach in advance of promulgating the first state-specific federal implementation plan.

UCS supports a phased approach to finalizing the model trading rules in advance of the federal plan. States will need to have time to consider the final form of the model trading rules in order to be able to develop a strategy that best meets their

⁴ Proposed Rule: 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; 40 CFR Parts 60, 62, and 78; 23 October 2015, Federal Register (Fed. Reg.), p. 64970.

⁵ RGGI, online at rggi.org.

⁶ Fed. Reg., 64970.

needs; simultaneously, states will be striving to submit their final plans to the EPA as early as possible so as to expand their CEIP construction eligibility window. Therefore—within the bounds of the EPA performing an informed review and revision on the basis of submitted comments—the faster the agency can promulgate the final model trading rules, the better.

Critically, should the EPA adopt a single approach for the federal plan, we believe the agency must be as transparent as possible in advance of the first issuance of a federal implementation plan. As the EPA notes, and UCS concurs, some states subject to a federal plan may benefit from one form of the rule over another, and as a result, could be disadvantaged by the EPA's decision to promulgate a single approach. With sufficient warning regarding the form of the approach that the EPA intends to adopt, however, we believe that states will be able to adequately evaluate whether they should take action to develop a state implementation plan in the event the federal implementation plan approach would prove less advantageous to their particular situation. Such transparency would not require the EPA to issue draft state-specific federal implementation plans; instead, all that is recommended is guidance regarding which of the two approaches the EPA intends to take.

1.3. UCS supports the EPA's proposals on trading linkages as a cost-effective, proven way to provide numerous benefits.

UCS has consistently advocated for regional or multi-state compliance approaches as they can lead to lower cost emission reductions. UCS supports the promotion of interstate trading in the CPP's federal implementation plan and model trading rules. Multi-state compliance options are a proven success. For example, the RGGI states have collectively lowered their emissions over 40 percent below 2005 levels, and have raised \$2.3 billion in carbon revenues that have benefitted the states' residents.^{7,8} On the national scale, the Acid Rain Program aimed to reduce SO₂ and NO_x emissions in the contiguous United States. That goal was achieved ahead of schedule for one-third of the expected cost by allowing regulated sources to find the most-cost effective compliance options, including across state lines.⁹ Specific to the CPP, recent studies by PJM, Southwest Power Pool, and Georgia Tech have shown that regional compliance is more cost-effective than a state-by-state compliance approach.^{10,11,12}

1.4. UCS encourages the EPA to be proactive in its distribution of materials on environmental justice considerations, and to closely and regularly engage with stakeholders on the matter.

The EPA should continue to provide guidance and tools to states and community stakeholders to ensure that environmental justice considerations are addressed in a robust way by states that adopt the model rule or are subject to the federal implementation plan. The proximity analysis and mapping tools provided by the EPA are helpful examples. UCS recommends that the EPA collect and track data to help discern if there are any instances where trading programs may have contributed to co-pollutant hotspots and provide guidance on how to mitigate these harms, including through direct regulation of co-pollutants through other statutes.

⁷ Regional Greenhouse Gas Initiative Inc. 2015. Investment of RGGI proceeds through 2013. Online at www.rggi.org/docs/ProceedsReport/Investment-RGGI-Proceeds-Through-2013.pdf.

⁸ Regional Greenhouse Gas Initiative Inc. 2015. Auction Results. Online at www.rggi.org/market/co2_auctions/results, accessed January 13, 2016.

⁹ Napolitano, S., J. Schreifels, G. Stevens, M. Witt, M. LaCount, R. Forte, and K. Smith. 2007. The U.S. Acid Rain Program: Key insights from the design, operation, and assessment of a cap-and-trade program. *The Electricity Journal*. 20(7):47-58. Online at www.epa.gov/sites/production/files/2015-06/documents/us_acid_rain_program_elec_journal_aug_2007.pdf.

¹⁰ PJM. 2014. The EPA's Clean Power Plan proposal: Review of PJM analyses preliminary results. Online at www.pjm.com/~media/committees-groups/committees/mc/20141117-webinar/20141117-item-03-carbon-rule-analysis-presentation.ashx.

¹¹ Southwest Power Pool, Inc. 2015. SPP Clean Power Plan compliance assessment: State-by-state. Online at www.spp.org/documents/29180/spp_state_by_state_compliance_assessment_report_20150727.pdf.

¹² Brown, M.A., G. Kim, and A. Smith. 2015. Low-carbon electricity pathways for the U.S. and the South: An assessment of costs and options. Online at www.spp.gatech.edu/sites/default/files/publication/download/Low-Carbon_Pathway.pdf.

1.5. UCS supports the use of a proficient workforce in the federal plan and model trading rules.

As communities around the country undergo structural employment shifts due to the changing energy industry, it is important that the demand for highly skilled, well-paid workers remains high. A federal plan and model trading rules with provisions that include strong labor standards and that encourage the use of qualified workers would help ensure that critical infrastructure work is performed safely and in a timely manner. A well-designed plan can support the development of clean energy jobs with family-sustaining wages.

1.6. UCS supports the administrative changes proposed by the EPA under Section VII of the proposed rule, and believes that these amendments will significantly improve the CPP implementation process for states and the EPA alike.

UCS supports the EPA's proposed amendments in Section VII of the proposed rule, "Amendments to Process for Submittal and Approval of State Plans and EPA Actions."¹³ Over time, various subsections of the Clean Air Act have been amended to reflect evolving administrative requirements and improvements, most commonly in service of making space for an iterative process between the agency and states. UCS believes that the amendments proposed here will bring section 111(d) up to the level of flexibility already achieved under other subparts to the benefit of states and the EPA alike.

2. Implementation of a Rate-based Approach

- UCS supports the EPA's proposal to employ the subcategorized rate approach as the preferred rate-based method for both the federal plan and model trading rule.
- UCS believes that the EPA's framework for generating and verifying emission rate credits (ERCs) is strong, but that the agency can make certain adjustments to support broader participation by low- and no-emission resources. The federal plan should be broadened to include those resources deemed eligible under the model trading rule, and both the federal plan and model trading rule should be amended to include combined heat and power (CHP) and waste heat to power (WHP).

The EPA's proposed rate-based model trading rule rightly recognizes the many opportunities that exist for reducing emissions within the electricity sector. We cannot say the same for the proposed rate-based federal plan. UCS believes that the EPA should be vastly more inclusive regarding the resources it considers eligible to participate under a rate-based federal plan, including through the recognition of contributions from energy efficiency and distributed generation. States subject to a federal implementation plan are generally more likely to be laggards on clean energy deployment; the EPA should use the opportunity of implementing a federal plan in such states to provide market incentives for as many energy efficiency and renewable energy resources that can achieve verifiable emission reductions as possible. This will, in turn, position the state to reap long-term gains from investing in clean energy solutions now, while simultaneously lowering the cost of compliance.

2.1. UCS supports the EPA's identification of the subcategorized rate approach as the preferred method for the rate-based federal plan and model trading rule.

A principal benefit of the way the EPA designed the CPP is the opportunity for economic efficiency in emission reductions through widespread trading programs. Such trading programs, however, are only viable when consistency is applied across trading entities. By prescribing a subcategorized rate approach for the rate-based federal plan and model trading rule, the EPA will ensure that more states are able to participate in a shared trading market. Were the EPA to instead apply state-specific blended rates, for example, the ability for interstate trading would be severely limited. Similarly, a blended rate across all federal plan states, or even across all federal plan and trading-ready rate-based states,

¹³ Fed. Reg., 65034-9.

would be threatened with shifting goals over time due to the potential departure of states to a state measures or mass-based approach, and vice-versa.

Importantly, UCS also supports the EPA's recognition of the rights of states to develop their own approach to achieving CPP compliance, including by allowing them to take an approach different from that of subcategorized performance rates. States may find it easier to apply a single rate across all affected EGUs within their states, or across affected EGUs in a multi-state trading agreement, than to enforce generator-specific rates, and therefore pursue a blended approach. UCS believes that this is a credible approach, and agrees with the EPA that such an opportunity should be left open to states.

2.2. UCS believes that the EPA has designed an effective mechanism for recognizing and incentivizing low- and no-carbon generators under a rate-based approach through the creation of ERCs.

The CPP hastens a shift already underway in the electricity sector regarding a reduction in the carbon intensity of electricity generation; however, the plan's long-term goals—although eminently achievable—cannot be met overnight. The EPA's dedication to designing a system that recognizes and prioritizes the most flexible yet progressive path forward for existing generators is commendable, and ERCs play a critical role in facilitating the sector's transition. Indeed, the ERC framework designed by the EPA provides a useful mechanism for crediting the contributions of low- and no-carbon electricity generation to the broader electricity sector, and promises to enable economic efficiency in meeting carbon reduction goals. UCS supports the underlying ERC framework laid out by the EPA, but offers comments below in service of further strengthening their implementation and design to better ensure that ERCs provide a useful *and* robust mechanism for emission reductions.

2.3. UCS supports the EPA's intentions in recognizing the emissions reduction value of incremental NGCC generation, but recommends modifications to the proposed framework to more appropriately reflect resource priorities.

Under a rate-based approach, the EPA proposes gas shift ERCs (GS-ERCs) as a mechanism for recognizing and incentivizing the emission reduction benefits possible from shifting electricity generation from higher-emitting steam generating units (SGUs) to lower-emitting natural gas combined cycle (NGCC) units. UCS broadly supports this approach as a means of capturing Building Block 2's contribution to the best system of emission reduction (BSER) calculation as promulgated in the final emission guidelines. Especially in the early years of CPP compliance, incremental NGCC generation can serve a valuable role in assisting the overall transition of the electricity sector without demanding significant build out of supporting infrastructure. This attribute in particular increases the system-wide value of early incremental NGCC generation, as it avoids the potential for an overreliance on natural gas and instead leaves possible the shift to ever more zero-carbon resources as such generation is built out over time. At the same time, the EPA must not overvalue natural gas contributions at the expense of other lower- or zero-carbon resources. To assist in this, UCS recommends several modifications to the GS-ERC design.

Importantly, UCS believes it appropriate for the EPA to err on the side of a downward bias instead of an upward bias in its designation of a universally applied incremental generation factor. In the GS-ERC generation equation, the EPA explains that applying the least stringent components to an NGCC unit's GS-ERC calculation results in the greatest generation of GS-ERCs per megawatt-hour (MWh).¹⁴ We agree with the decision to apply a single region's values to all generators subject to the federal plan as opposed to assigning different values per region, and similarly agree with the proposal to re-evaluate the appropriate region on a compliance period basis. However, we disagree with the EPA's decision to choose the values that generate the most GS-ERCs per MWh, and instead argue that the EPA should choose the incremental generation factor that generates the least. As stated above, incremental NGCC generation will be of significant value to the electricity sector in the opening years of the CPP. At the same time, natural gas does not provide a sustainable carbon solution over the long term, when much deeper emissions cuts will be required to address climate change. Therefore, the EPA must not inappropriately prioritize NGCC at the cost of truly low- or no-carbon resources. In

¹⁴ Fed. Reg., 64993.

further support of this concern, the EPA should ensure that the generation and allocation of GS-ERCs does not exceed the amount that would be generated should the fleet achieve a capacity factor of 75 percent.

With regard to the entity level at which the emission rate is evaluated for the purposes of determining the GS-ERC generation rate, UCS fully supports the EPA's proposal to assess the rate on a unit-by-unit basis. UCS believes it valuable to recognize and reward better-performing actors, and agrees that awarding incrementally more GS-ERCs to those that operate more efficiently than others is useful and appropriate. Moving to a rate standardized across all generators would deleteriously eliminate such a performance incentive.

Finally, UCS agrees with the EPA's reasoning regarding the allocation of GS-ERCs across all MWh of generation as opposed to only once a specific threshold has been met. As the EPA explains, though the latter approach presents a strong theoretical equivalence to the BSER calculation, in practice, it may only result in the rewarding of a shift in generation from one NGCC to another, as opposed to from SGUs to NGCC units.¹⁵ Though UCS respects the value in an approach that only rewards incremental generation, UCS believes that the alternatives put forward by the EPA fail to successfully mitigate the potential for arbitrage amongst affected NGCC units, which should therefore preclude such approaches from being finalized.

2.4. UCS supports the EPA's proposal regarding the crediting of generation from new nuclear units and capacity uprates at existing facilities.

UCS supports the EPA's proposal to allow generation from new nuclear units and capacity uprates at existing facilities—provided they are approved by the Nuclear Regulatory Commission (NRC) and are installed or implemented after January 1, 2013—to be eligible for ERCs under the rate-based federal plan and model trading rule.¹⁶ We also strongly support the EPA's proposal to treat existing nuclear units that receive license extensions from the NRC as existing capacity, and therefore to only allow such units to receive ERCs for incremental generation resulting from any capacity uprates that may be approved as part of the relicensing process.¹⁷

Evaluation, measurement, and verification (EM&V) requirements for new nuclear plants and capacity uprates at existing facilities have the benefit of being comparatively straightforward. All such plants have revenue-quality meters that measure and verify the generation supplied to the grid on a regular basis, and regularly report this generation information to EIA.

2.5. The EPA's proposal for allowable zero-emission resources is too narrow under the federal plan, and should be amended to include more resources like demand-side energy efficiency and distributed generation.

UCS strongly supports the EPA's inclusion of low- and zero-emitting resources as ERC generators under the rate-based federal plan and model trading rule. However, UCS believes that the EPA has drawn too narrow a boundary around those resources that it deems eligible. A high penetration of renewables is a necessary component of any energy plan pointing toward long-term climate goals; to achieve such rates, many technologies must be brought to bear. The EPA's proposal to severely limit eligible resources under a rate-based federal plan will result in inappropriate market signals being sent to viable carbon reduction strategies, and thereby hinder our ability to most effectively and efficiently achieve a low carbon energy future. Therefore, we propose that the EPA expand the list of resources that it deems eligible.

The EPA justifies its limitation of eligible renewable resources under the federal plan by highlighting the high administrative burden required by resources beyond revenue-quality metered wind, solar, hydropower, and geothermal power.¹⁸ This argument falls short on two fronts. First, resources such as demand-side energy efficiency (DS-EE) and distributed generation have a long history of being measured and verified under various state programs, and the EPA would be able to draw upon such experiences in its own administration of a rate-based federal plan. In particular, the EPA should not draw such a sharp distinction between those sources that can be metered and those that must be estimated.

¹⁵ Fed. Reg., 64994.

¹⁶ *Ibid.*

¹⁷ *Ibid.*, 65093-4.

¹⁸ *Ibid.*

Multiple utilities and grid operators, now joined by EIA, have begun to reliably and acceptably incorporate such estimates into their load assessments.¹⁹ Second, the EPA made note of no such insurmountable administrative hurdles when it designed the Clean Energy Incentive Program (CEIP), which includes resources currently considered ineligible under the broader federal plan. Given the agency's development of model frameworks in its draft EM&V guidance, it seems likely that the EPA can readily include at least a subset of energy efficiency programs within a rate-based federal plan. We recommend that the EPA closely consider the comments submitted by the Solar Energy Industries Association (SEIA) on the topic of distributed generation, especially relating to the EPA's overreliance on revenue-quality meters for solar systems, clarifications regarding the eligibility of onsite renewable energy generation, and the EPA's unnecessary restrictions on aggregated resource estimates.²⁰

In addition to expanding eligible resources under the federal plan to more closely align with those proposed as allowable under the model trading rule, UCS also believes it appropriate for the EPA to include combined heat and power (CHP) and waste heat to power (WHP) as eligible resources under both the federal plan and model trading rule. CHP and WHP have long histories as successful mechanisms for vastly increasing the efficiency of electricity and heat generation, and thereby decreasing the carbon intensity of such energy services. It is appropriate for the EPA to not only recognize but also further incentivize the potential for CHP's emission reduction contributions.

Importantly, while UCS encourages the EPA to maintain as broad a list of eligible resources as possible, UCS also respects that the EPA should be provided discretion in terms of barring those resources that it truly believes it will be unable to adequately measure and verify. At the same time, new technologies and existing technologies that the EPA had previously deemed ineligible for participation should be provided pathways for periodic re-evaluation of eligibility status. Such an evaluation process could occur via a short petition window in advance of each compliance period.

2.6. UCS appreciates the EPA's efforts to make EM&V guidance available to states' CPP administrators, but recommends that the EPA make these resources more accessible in light of a large proportion of the readership unfamiliar with the intricacies of EM&V practices and procedures. UCS also fully supports responsibility for the validity of an ERC resting with affected EGUs.

The EPA has made great strides in developing EM&V guidance that is readily available to applicable entities through the issuance of its draft guidance.²¹ This resource provides a framework for lowering the barriers to access that states unfamiliar or unpracticed with energy efficiency programs may have otherwise experienced. However, in order for this resource to fully achieve its potential—and thus for energy efficiency as a resource to be able to fully achieve *its* potential under the CPP—the EPA must increase the accessibility of the document. UCS recommends that the EPA follow the guidance that the American Council for an Energy-Efficient Economy (ACEEE) crafted with its partners in support of improving the usability and accessibility of the draft guidance document.

Beyond making such guidance accessible to all potential stakeholders, UCS also strongly supports the EPA's proposal that the ultimate burden for the validity of an ERC lies with the affected EGU applying the credit. This ensures motivation along the entire chain of custody for the issuance of ERCs that meet applicable CPP standards.

¹⁹ See, for example: Energy Information Administration (EIA). 2015. *Today in Energy: EIA electricity data now include estimated small-scale solar PV capacity and generation*. Online at www.eia.gov/todayinenergy/detail.cfm?id=23972. And: ISO-New England (ISO-NE). No date. *Distributed generation forecast*. Online at www.iso-ne.com/system-planning/system-forecasting/distributed-generation-forecast.

²⁰ Solar Energy Industries Association (SEIA). 2016. *Public submission to EPA on EPA-HQ-2015-0199*.

²¹ EPA. 2015. *Draft evaluation, measurement and verification guidance for demand-side energy efficiency*. Online at www.epa.gov/cleanpowerplanttoolbox/draft-evaluation-measurement-and-verification-guidance-demand-side-energy.

3. Implementation of a Mass-based Approach

- UCS advocates for the new source mass complement as the most effective option for addressing leakage under a mass-based approach; however, UCS generally supports the EPA's proposed set-asides as a necessary alternative approach, provided certain adjustments are made and the EPA sufficiently models mitigated leakage.
- UCS supports the EPA's two approaches for the treatment of retiring units, but recommends that the EPA update its allocation of allowances beginning in 2025 with generation data from 2021 and 2022; such action will ensure that allocations of valuable allowances are made based on updated market conditions and will help avoid the accrual of windfall profits to old, heavily polluting EGUs. Updating allocation also has the potential to serve as a strong leakage mitigation approach.
- UCS recommends that in federal-plan states where the state has refused authority of the allowance allocation process, the EPA distributes allowances to electric distribution utilities, as opposed to affected EGUs, on a pro-rata basis. If the EPA does allocate allowances to affected EGUs based on historical generation, however, then UCS strongly supports an approach that periodically updates generation data so as to better reflect updated market conditions and resulting shifts in generation.

A mass-based emission trading program presents the greatest certainty surrounding achieving emission reduction goals, while simultaneously introducing a lower administrative burden than that required by a rate-based approach.²²

Furthermore, mass-based trading programs strongly position states to be able to efficiently and effectively transition to broader carbon reduction markets should such regulations be promulgated in the future. Therefore, UCS stands in support of a mass-based federal plan and model trading rule. Here, our comments focus not on the overall viability of the approach, but rather on specific intricacies of implementation, and how those can be best shaped to craft the strongest, most effective emission reduction programs.

3.1. UCS believes that the new source mass complement approach is the most effective option for addressing leakage under the CPP, and believes that the EPA's proposed alternative approach must be improved to truly protect against leakage.

The EPA rightly addresses the threat of leakage from a mass-based approach in the federal plan and model trading rule. Getting such a strategy correct is critical to maintaining the integrity of the emission reduction goals set forth by the CPP. UCS recognizes that although a new source mass complement approach would be the surest way to eliminate the incentives driving leakage, the EPA may be unable to implement such a strategy in federal plan states due to new sources already being regulated under separate cover. UCS provides comments here that propose: 1) additional mechanisms for encouraging uptake of the new source mass complement approach under the model trading rule and federal plan, and 2) modifications to the EPA's set-aside strategy to better align its incentives with what is truly required to sufficiently address leakage.

The EPA has provided useful signals to states regarding the benefits of the new source mass complement approach under the mass-based model trading rule, both by taking steps to conduct all necessary calculations for states and making those numbers readily available, and by making clear the reduced administrative burden that such an approach would entail. Still, UCS believes that the EPA can go further in this regard, and must push for the new source mass complement approach to be recognized as the first-best option for broaching the topic of leakage—all other approaches will simply be attempting to best approximate the same results.

In recognition of the fact that the EPA will need to implement some form of alternative leakage strategy under a mass-based federal plan, UCS puts forward here several improvements to the agency's proposed approach. However, UCS first proposes that the EPA consider providing states subject to a federal plan the opportunity to permit the EPA to cover new sources under a mass-based federal approach, and thus create an opening for federal implementation plan states to similarly employ the new source mass complement approach. This would function similar to how the EPA is providing federal implementation plan states the authority to direct the allowance allocation process, while otherwise being subject

²² Fed. Reg., 64970; 65011-2.

to an EPA-administered approach. Should the EPA find this to be a viable approach, UCS strongly recommends that the agency provide it as an option to federal-plan states.

In the event that the EPA does not find the above recommendation viable under the final rule, however, UCS provides the following recommendations to improve the agency's set-aside-based leakage mitigation strategy. First, per the EPA's comment request, the output-based allocation should be limited to only target NGCC units, and not SGUs or renewables.²³ This allocation should be capped, and as the EPA proposed, UCS believes that under a capped scenario allowances should be distributed to eligible NGCC units on a pro rata basis if oversubscribed, or banked and made again available to the set-aside in a subsequent compliance period should the program be undersubscribed. UCS further supports the lagged accounting approach put forward by the EPA.

For the renewable energy set-aside, UCS believes that the EPA is too narrow in its definition of eligible resources, and too limited in its size of distribution to such projects.²⁴ Regarding eligible resources, UCS strongly believes that the EPA should open the door to all projects deemed eligible under the rate-based model trading rule, including DS-EE, CHP, and distributed generation, but not nuclear. All such projects will be required to meet the long-term goals of the CPP, and thus must be adequately and fairly incentivized in the face of other resources. However, UCS agrees with the EPA that new nuclear units and capacity uprates at existing units should not be eligible to receive the renewable energy set-aside allowances, as we similarly believe they are an ineffective way to address potential leakage to new sources due to unique cost concerns and development timelines.²⁵ Importantly, UCS believes that the EPA must increase the size of the renewable energy set-aside from 5 percent to at least 10 percent, as modeled under a potential pathway by the EPA. Large-scale deployment of low- and no-carbon emission resources is central to the long-term efficiency of the CPP, but such deployment requires time and resources. A larger renewable energy set-aside will take important strides in this direction, and provide early indicators of future market signals. The EPA's modeling recommended too low a percent to truly incentivize renewables, and thus we argue here for a higher amount to be allocated. In the event the set-aside is not exhausted by the end of a compliance period, we advocate for the allowances to be rolled over and added to the renewable energy set-aside for the following compliance period instead of being returned to the broader pool of affected EGUs, as such action would enable it to function as a true set-aside.

It is also important to note that many new sources will eventually qualify as existing sources under the Clean Air Act, and UCS recommends that the EPA move expeditiously to reclassify these sources as soon as they are eligible. Transparency around the potential for such future action is another way to ensure that leakage of emissions to new sources is minimized.

Finally, UCS notes that several research organizations, including Resources for the Future²⁶, have rigorously modeled alternative leakage mitigation approaches in the course of submitting comments on the proposed federal plan and model trading rules. We encourage the EPA to carefully consider such options, and pursue those which achieve maximum leakage mitigation—under realistic modeling parameters—while staying within the scope of our otherwise-preferred policy positions.

3.2. If the EPA fails to amend its proposed allocation approach and continues to award allocations based on historical generation, then UCS supports a retirement treatment strategy that balances recognizing the benefits gained from units retiring on the one hand, and concerns about generating perverse incentives on the other.

The retirement of old, heavily polluting emitters is an effective way to achieve CPP performance goals as significant emissions reductions are possible from the shuttering of such plants. And under an allowance allocation system that freely distributes allowances based on historical generation, the EPA is correct in recognizing the contributions of retiring units by continuing to provide allowances for a set period of time after a unit has stopped running.²⁷ However, should the EPA

²³ Fed. Reg., 65020-1.

²⁴ *Ibid.*, 65022.

²⁵ *Ibid.*, 65023.

²⁶ Burtraw, D., K.L. Palmer, A. Paul, and H. Yin. 2016. *Technical background for Clean Power Plan comments to EPA*. Resources for the Future (RFF) Online at www.rff.org/files/RFF-CPP_Technical-Background.pdf.

²⁷ Fed. Reg., 65026-7.

adopt an allowance allocation method that allocates allowances to electric distribution utilities as opposed to affected EGUs—as UCS recommends in section 3.3 below—then the issue of a suitable retirement treatment strategy becomes a moot point. For this reason, in addition to all those outlined in the section below, UCS implores the EPA to move away from a grandfathering allowance allocation approach. That being said, should the agency move forward with its initially proposed strategy, then UCS recommends the following improvements to the EPA’s plan for addressing units that retire.

Specifically, UCS recommends that the EPA update and recalculate allowance allocations prior to the second compliance period (i.e., 2025 to 2027) based on each affected EGU’s average generation over the 2021 to 2022 time frame. This approach is consistent with the back-up EGU-based allocation methodology proposed by UCS and described in section 3.4 below, and would help to most accurately reflect the current generation landscape so as to avoid the accrual of windfall profits to generators that have long-since ramped down generation. Otherwise, UCS strongly supports the EPA’s primary proposal of reallocating unclaimed or foregone allowances to the renewables set-aside, as it recognizes and further enhances the generation shift underway in the electricity sector. The EPA should not redistribute said allowances to other affected EGUs—in a pro rata fashion or otherwise—nor should it continue to allocate allowances to generators indefinitely.

UCS also supports as a next-best option the parallel pathway that the EPA has created for retiring units under the Alternative Compliance Pathway for Units that Agree to Retire Before a Certain Date. UCS appreciates the EPA’s efforts to develop plans of action that can meet the needs of a variety of situations, and potentially reduce the administrative burden on units that will be facing retirement especially in the early years of the program. Essential to the plan’s viability is its strict adherence to maintaining the overall cap, which the EPA carefully lays out. A potential risk of the alternative pathway is a decrease in market liquidity; however, UCS believes it unlikely that a sufficient number of units would elect to participate such that a meaningful reduction in market liquidity results.

3.3. UCS recommends that in federal-plan states where states have refused to take authority of the allowance allocation process, the EPA should distribute allowances to electric distribution utilities on a pro-rata basis.

Under the federal plan, in scenarios where states have refused to take authority of the allowance allocation process, UCS recommends that the EPA distribute allowances to electric distribution utilities on a pro-rata basis rather than directly to affected EGUs. Electric distribution utilities can then sell allowances, with revenues to be used for generating consumer benefits, such as to support efforts to lower customer bills through cost-effective energy efficiency programs or as direct rebates to ratepayers, for example. Public utility commission oversight of the sale of allowances and distribution of revenues should be required to ensure consumers are capturing the benefits of this process. See section 3.5 (below) for a more complete discussion.

3.4. UCS recommends that *if* allowances are freely allocated based on historical generation, then there must be a mechanism in place to regularly update the allocation criteria based on recent generation data.

Should the EPA not adopt UCS’s proposed allowance allocation strategy described above, then UCS advocates for the allowance allocation criteria upon which the EPA bases its distribution to be updated at least once during the overall timeframe of the CPP. In particular, we propose that ahead of the 2025 to 2027 compliance period, the EPA update the allocation criteria based on generation levels over the 2021 to 2022 time period. This will provide suitably timely generation information, balanced between pre- and post-CPP implementation, while still allowing affected EGUs sufficient lead time regarding the number of allowances to expect.

A transparent and reliable allocation methodology is critical to CPP compliance, but we would caution that a methodology based on shares of historic generation often serves to reward a state’s dirtiest generators and denies the state or ratepayers the value of allocations. The electricity markets are in an unprecedented period of change, with older, more polluting and inefficient plants retiring at record levels. It would be unfair to continue to award allowances in perpetuity to participants who have exited the market, at the expense of both consumers and new entrants who provide cleaner generation resources.

3.5. UCS recommends that for the mass-based model trading rule—and for federal implementation states that take authority of the allowance allocation process—the EPA should make clear the first-best options of allocation strategies that either auction allowances or distribute allowances to electric distribution utilities. The EPA should *not* allow free allocation to affected EGUs based on 2012 generation.

The value of the allowances created under a trading program rightfully belongs to the public. In the model rule and in federal-plan states that take authority of the allocation process, UCS supports as a first-best option the auctioning of a majority of allowances—similar to the programs established by RGGI and California—as a way to benefit consumers, improve opportunities for clean energy, and support other state priorities benefitting the public good. States would then have discretion to distribute revenues to consumer benefits programs such as increased funding for energy efficiency and renewable energy, workforce transition programs, direct energy bill assistance, or other programs or investments for the public good. Furthermore, an auction would allow for the better functioning of an allowance market by aiding in price discovery, giving all stakeholders an early, clear signal of the value of the allowances. This is especially important in a newly formed market such as that generated in support of the CPP.

For example, to date, the RGGI program has invested more than \$1 billion in energy efficiency, renewable energy and direct bill assistance programs that are projected to save more than \$2.9 billion for 3.7 million households and 17,800 businesses in the Mid-Atlantic and Northeast.²⁸ California’s state budget for fiscal year 2014–15 appropriates \$832 million in auction proceeds for funding programs that will reduce GHG emissions, provide direct investments and benefits in disadvantaged communities, and provide additional environmental and economic co-benefits.²⁹ Furthermore, the American Clean Energy and Security Act of 2009 (H.R. 2454) provides a valuable framework for offering guidance on methods of allowance allocation that directly benefit consumers, and distribution of revenues to programs that support ratepayers.³⁰

However, in the event a state finds that the revenue-generation aspect of allowance auctions presents challenges to unimpeded allocation and use of funds, then UCS also supports the free allocation of allowances to electric distribution utilities. UCS does not believe that the EPA should allow for the free allocation of allowances to affected EGUs based on historical generation; if allowances are freely allocated to generators instead of auctioned or directed to electric distribution utilities, then this would have the potential of creating windfall profits for generators at a direct cost to consumers.

3.6. UCS supports the timing restrictions proposed by the EPA on states transitioning from a federal to a state mass-based plan.

The EPA correctly recognizes that for states moving from a federal to a state plan, the agency must balance fostering as smooth a transition as possible against ensuring the continued integrity of the broader emission reduction goals. For this reason, UCS believes that it is correct for the EPA to limit authorized transition periods to only windows in advance of allowances being allocated for the next compliance period. UCS agrees with the EPA that this process will avoid the complications that could arise should a state elect to transition from a federal to a state plan in the middle of a compliance period, and thus leave the agency responsible for potentially clawing back allowances. UCS does not believe that the EPA’s alternative proposed approach provides a better means of achieving such aims; instead, UCS believes that the original proposed approach provides states with plenty of time to determine their interest in transitioning, and without the added cost of delaying allowance distributions.

²⁸ The Regional Greenhouse Gas Initiative (RGGI). 2015. Investment of RGGI proceeds through 2013. April. Online at www.rggi.org/docs/ProceedsReport/Investment-RGGI-Proceeds-Through-2013.pdf.

²⁹ California Air Resources Board. No date. Online at www.arb.ca.gov/cc/capandtrade/auctionproceeds/budgetappropriations.htm.

³⁰ H.R. 2454, American Clean Energy and Security Act of 2009. Online at www.congress.gov/bill/111th-congress/house-bill/2454/text. See, for example, Sections 782 and 783.

3.7. UCS recommends against limiting trading to short ton-based currency.

To further promote trading linkages between and among federal plan states and trading-ready state plan states, UCS does not advocate for limiting currency to short ton-based currency. While this would keep things streamlined and avoid confusion of conversion from metric tons to short tons, the conversion is a relatively simple calculation. As long as it is done consistently and it is clear who is responsible for the conversion, we believe that this is a relatively small hurdle to overcome to achieve a broad, consistent, and flexible trading program. Further, those states that currently regulate carbon emissions vary in how they calculate emissions. RGGI states use short tons, while California uses metric tons. The EPA should avoid adding the burden of requiring states to dramatically alter current tracking systems. Allowing flexibility in this regard would further enable more parties to trade together if, by chance, states find it advantageous to calculate in-state allowances by metric tons rather than short tons.

4. Compliance and Cost-Containment Mechanisms

- UCS supports the EPA-administered allowance tracking system, but also encourages the EPA to facilitate the development of, and linkage with, alternative EPA-designated systems.
- UCS encourages the EPA to require affected EGUs to meet interim year compliance provisions, and to add some limits to banking while maintaining a strict prohibition on borrowing.

For emission trading programs to succeed, it is critical that the associated market be appropriately designed. This holds true for rate- and mass-based approaches alike. The EPA has significant experience in the development and administration of similar trading programs, and is able to benefit from the learning opportunities provided by such involvements. At the same time, multiple trading programs have also emerged outside of the EPA's administration, and have similarly provided critical learning experiences for all parties involved. UCS offers comments here intended to improve the functioning of the CPP based on lessons learned from such past experiences.

4.1. UCS supports the use of the EPA-administered Allowance Tracking and Compliance System (ATCS), but also encourages flexibility regarding the use of other robust state or multi-state "EPA-designated" tracking systems, provided they meet stringent criteria specified by the EPA and are linked to ATCS.

Allowance tracking and compliance systems are used to record allocations, deductions, and transfers of allowances under a mass-based trading system, or ERCs under a rate-based system, to ensure that regulated entities have the allowances or ERCs necessary to meet their compliance obligations under the CPP. The flexibility to use "EPA-administered" or "EPA-designated" tracking systems will allow states to choose whichever option minimizes costs and administrative burden. The EPA-administered ATCS is a well-established platform that has long been in use for the sulfur dioxide (SO₂) trading program, and generators are very familiar with it. In addition, many states have already successfully implemented tracking systems either for emissions allowances or renewable energy credits (RECs), such as California's Compliance Instrument Tracking System Service (CITSS), RGGI's CO₂ Allowance Tracking System (RGGI COATS), the Midwest Renewable Energy Tracking System (M-RETS), and the PJM Generation Attribute Tracking System (PJM-GATS). Tracking programs that do not currently include carbon dioxide could be expanded to accommodate CO₂ emissions tracking.

UCS believes that the EPA should allow for the flexibility to use either type of system on the condition that these alternative tracking programs are integrated with the EPA's tracking system, meet the same robust criteria as the EPA-administered tracking system, and otherwise meet the EPA's approval. Such systems must be transparent, readily understandable, updated at least once daily, and publicly accessible. Further, data collected via the tracking and compliance systems must be monitored and verified through robust techniques including spot checks at facilities and statistical methods, conducted in cooperation between the EPA and states.

Separately, as the EPA has indicated, third parties (e.g., brokers) would be well-positioned to provide timely information about allowance or ERC prices. An independent market monitor should verify the competitiveness of the

market, including the secondary market for allowances or ERCs. Access to all types of market information on a timely basis is critical for market credibility, price discovery, and bolstering confidence in a fair, competitive market.

4.2. UCS recommends adding interim year compliance provisions for affected EGUs to the federal implementation plan and model rules to better ensure full compliance by the end of the multi-year periods.

The EPA proposes to implement multi-year compliance periods without intervening compliance requirements. However, more frequent compliance provisions will be necessary to help prevent situations where states fall short of the emission reduction goals and have to rapidly make up deficits. To ensure strong and consistent program compliance, UCS recommends that the EPA require affected EGUs to surrender ERCs or allowances to cover at least 50 percent of their emissions during the intervening year(s) of a compliance period. This will also help keep the market liquid over the course of a compliance period, and encourage affected EGUs to abate emissions early and often. Policy and investment changes in the power sector require some time to implement or adjust, so advance notice will be key to ensuring they are well aligned with the goals of the CPP.

One example of the importance of this type of interim compliance provision comes from RGGI, which initially implemented a three-year compliance schedule without intervening compliance requirements. The result was imperfect compliance rates due to changing market conditions, such as bankruptcy declarations from sources in intervening years.³¹ In 2012 the RGGI states chose to amend the compliance schedule to include a requirement for sources to hold allowances equal to 50 percent of their emissions during each interim compliance year (and 100 percent at the end of the three year compliance period). The California Air Resources Board (CARB) Cap-and-Trade Program also includes annual true-up provisions.³²

UCS furthermore believes that the timing of interim year true-ups and full-period compliance should be similar across rate- and mass-based plans. As the rule is currently proposed, the difference between rate- and mass-based compliance demonstration requirements varies by up to six months. We believe this timing requirement should be the same across programs, and should fall in either May or June of the year following the interim or full-period compliance requirement.

4.3. UCS supports the EPA’s provisions on non-compliance, but recommends strengthening the penalties, especially in the event of severe levels of non-compliance.

Penalties for non-compliance are an essential component of a successful CPP. UCS supports the EPA’s proposal to automatically deduct from non-compliant affected EGUs two times the ERCs or allowances needed to make up for the shortfall (or require an equivalent monetary payment). However, we also strongly urge the EPA to consider increasing the non-compliance penalty to three times the ERCs or allowances needed to make up for the shortfall (or the equivalent monetary amount). Compliance failures jeopardize the goals of the CPP, are unfair to market participants who follow the rules, and can exacerbate environmental justice concerns regarding co-pollutant hotspots. To ensure credibility in a well-functioning market, the non-compliance penalty must establish a strong incentive to meet program goals. Various modeling of the CPP and similar programs suggests that allowance prices are likely to be moderate, given the many cost-effective compliance options available. Therefore, UCS recommends a 3-for-1 penalty. In addition, UCS recommends that the EPA reserve the right to increase the non-compliance penalty in states if compliance rates fall below 95 percent.

4.4. UCS supports the EPA’s proposal to exclude “borrowing” as a valid compliance mechanism.

Borrowing ERCs or allowances from future compliance periods delays progress towards achieving carbon emission reductions and investing in clean energy resources, and could lock in long-lived, fossil-fuel intensive infrastructure. It

³¹ M.J. Bradley & Associates LLC. 2013. *Final RGGI Model Rule amendments released*. Online at www.mjbradley.com/sites/default/files/MJBA_RGGI_Issue%20Brief_February2013.pdf.

³² California Air Resources Board. 2011. *Overview of ARB emissions trading program*. Online at www.arb.ca.gov/newsrel/2011/cap_trade_overview.pdf.

could also create a danger that the borrowed emissions are never fully made up and thus the program fails to meet its goals. Given the aggressive long-term actions needed to achieve carbon reductions sufficient to avoid the worst damages of climate change, UCS supports the EPA's exclusion of borrowing, as it should help to encourage swift and continuous development of low-carbon energy resources.

4.5. UCS supports limited banking of ERCs and allowances.

Compliance instrument banking encourages early action to cut emissions and can be an important flexibility mechanism to help with planning and cost containment for generators. However, unlimited banking as the EPA proposes could reduce liquidity in ERC or allowance markets in later compliance years, and create a boom-bust cycle or other disincentives for ongoing clean energy development.

For example, UCS analysis has found that at least 21 states are already on track to surpass their 2022 emissions reduction targets with existing commitments.³³ With unlimited banking, affected EGUs in such states could potentially have to make little or no further investments in reducing emissions during later compliance periods. This has been the case with Oregon's renewable energy standard (RES), which currently allows for unlimited banking of RECs for compliance. As a result, some of Oregon's utilities have no obligation to develop new clean energy resources over the next decade due to an abundance of banked RECs.

Limits on banking of ERCs and allowances could include either applying an expiration period for ERCs and allowances, or limiting the amount of banked ERCs and allowances that can be used by an affected EGU during a single compliance period. Most state RES policies, for example, limit REC lifespans to three or four years (including Minnesota). In another example, the California cap-and-trade system restricts the number of allowances a regulated entity can bank at any time in proportion to the entity's annual allowance budget.³⁴

4.6. UCS agrees with the EPA's position that a reliability safety valve should not be a required component of the federal plan or the model trading rules due to the significant flexibility built into the approaches.

The EPA lays out a clear, well-supported argument as the basis for its decision to omit a reliability safety valve from the federal plan and model trading rule designs.³⁵ UCS strongly supports the tenor of this argument. Namely, the multi-year compliance period design that the EPA proposed results in a degree of allowance procurement flexibility that directly undercuts the primary threats that would justify a reliability safety valve provision. In particular, because generators are not required to have ERCs or allowances in hand at the moment of generation, but instead averaged over a multi-year period, there is a limited chance for price spikes or temporary periods of allowance scarcity that would disadvantage generators forced to run in the service of reliability. Importantly, UCS also believes that the interim compliance requirements it proposes in section 4.2 (above) would only serve to lessen the reliability concerns of generators, and thus does not see such amendments as resulting in a need for reliability safety valve requirements.

At the same time, UCS agrees with the EPA's position that the design of specific state implementation plans may generate the need for, or prudence in creating, reliability safety valves. UCS therefore similarly argues that states should not be prohibited from including a reliability safety valve provision in their own plans so long as they respect the final performance rates demanded by the CPP.

³³ Richardson, J., J. Deyette, R. Cleetus, S. Clemmer, and T. Greenen. 2015. *States of progress: Existing clean energy commitments put most states in strong position to meet the EPA's final Clean Power Plan*. August 2015 update. Cambridge, MA: Union of Concerned Scientists. Online at www.ucsusa.org/global-warming/reduce-emissions/clean-power-plan-states-of-progress.

³⁴ Center for Climate and Energy Solutions (C2ES). 2014. *California cap and trade program summary*. Online at www.c2es.org/us-states-regions/key-legislation/california-cap-trade.

³⁵ Fed. Reg., 64981-2.

5. Protection of Voluntary Markets

5.1. UCS recommends that the EPA modify the proposed federal plan and model trading rules to ensure the protection of voluntary demand for, and private investment in, renewable energy.³⁶

Additional elements are needed in the proposed federal plan and model trading rules in order to avoid negative impacts to voluntary demand for, and private investment in, renewable energy. The voluntary renewable energy market represents 26 percent of all non-hydro renewable generation nationally, equivalent to 58 percent of all new Renewable Portfolio Standard (RPS) renewable generation. The CPP could negatively affect the voluntary market by reducing the impact of renewable energy purchased by businesses and households nationwide. The good news is that there are proven regulatory mechanisms that have already been implemented in California and RGGI to support and enhance the existing voluntary renewable energy market and deliver actual emissions reductions for voluntary investors.

To support continued investment in and growth of voluntary renewable energy, the proposed CPP federal plan and model trading rules should include the following.

1. A rate-based federal plan and model rule should include a mechanism to retire ERCs on behalf of the voluntary renewable energy market (an ERC set-aside, where voluntary renewable energy is issued ERCs), rather than allowing them to be used for compliance by (to adjust the rates of) affected EGUs.
2. A mass-based federal plan and model rule should include a set-aside of allowances for voluntary renewable energy that is structured similarly to California's Voluntary Renewable Electricity Reserve Account³⁷ and/or the RGGI's voluntary renewable energy market set-aside provision³⁸.

Thousands of businesses and organizations along with millions of individuals across the country purchase green power in the U.S. voluntary renewable energy market.³⁹ These individuals and organizations, including over 1,300 that participate in the EPA's Green Power Partnership and some of the largest Fortune 500 companies, voluntarily use billions of kilowatt-hours of renewable energy annually.⁴⁰ Many do this as part of their commitment to reduce their GHG footprint. These commitments to renewable energy and avoided GHG emissions on the grid currently go beyond that which is attributed to state or federal policy. In order to maintain strong participation in the voluntary renewable energy market, it will be important to ensure that these commitments to investing in renewable energy and avoided GHG emissions continue to go beyond what is attributable to state and federal policies.

The voluntary renewable energy market is important in every state—either to supply the voluntary market or as a source of demand for voluntary renewable energy.⁴¹ According to the latest report from the National Renewable Energy Laboratory (NREL), using 2014 data, voluntary retail sales of renewable energy totaled 74 million MWh per year, growing at 10 percent per year.

Where renewable energy that is sold into the voluntary market is included in CPP compliance—meaning it gets issued an ERC for use in a rate-based state or is located in a mass-based state without a set-aside of allowances for voluntary renewable energy—these voluntary actions to purchase and develop renewable energy will no longer allow the voluntary purchasers to take their states beyond what is required by law for GHG emissions from existing units. These purchases will support state CPP compliance, making it easier for fossil units to comply by increasing the supply of ERCs

³⁶ Here, UCS comments cite a subset of those filed previously in partnership with the Center for Resource Solutions (CRS): CRS. 2015. *CRS's Guidance for Comments on the Proposed Federal Plan and Model Rules to Protect Voluntary Action*. Online at resource-solutions.org/cpp-comment-guidance/.

³⁷ See title 17, CCR, section 95841.1.

³⁸ See Section XX-5.3(d) of the RGGI Model Rule, 12/31/08 final with corrections.

³⁹ O'Shaughnessy, E., J. Heeter, C. Liu, and E. Nobler. 2015. *Status and trends in the U.S. voluntary green power market (2014 data)*. National Renewable Energy Laboratory (NREL). Technical Report NREL/TP-6A20-65252. Online at www.nrel.gov/docs/fy16osti/65252.pdf.

⁴⁰ For more information about the importance and impact of voluntary green power purchasing, visit www.epa.gov/greenpower/. Also see NREL's market analysis at www.nrel.gov/analysis/market_green_power.html.

⁴¹ See NREL market analysis (www.nrel.gov/analysis/market_green_power.html) as well as the 2014 Green-e Verification Report, online at green-e.org/docs/2014_Green-e_Verification_Report.pdf.

and/or reducing mass emissions. But, the actions of voluntary purchasers will no longer be surplus to regulatory requirements of a state (“regulatory surplus”) with regard to GHG emissions reductions at affected units since they get factored into the reductions that a state reports to the EPA.

Existing voluntary markets for renewable energy value regulatory surplus for GHG emissions. Companies and individuals willing to go beyond compliance levels can continue to drive global GHG emissions reductions—provided that the federal plan and model trading rules are properly structured. Without such provisions, demand for renewable energy in voluntary markets will likely decline. The result is not just negative impacts on the growth of renewable energy investments, but also the elimination of the CPP compliance contributions that strong voluntary renewable energy markets offer. Experience with Renewable Electricity/Portfolio Standards demonstrates that both compliance and voluntary markets are more successful when they are designed to operate on a side-by-side basis. Our recommendations for the federal plan and model trading rules would ensure that voluntary actions continue to deliver incremental emissions reductions—and not simply reduce the costs of CPP compliance for regulated entities.

6. Design and Implementation of the Clean Energy Incentive Program

- UCS encourages the EPA to broaden the timing eligibility window for the CEIP to avoid discouraging near-term development of renewable resources, and to increase the chances of exhausting the supply of the CEIP matching pool.
- UCS further recommends that the EPA afford deference to states as they develop definitions of eligible low-income energy efficiency projects, while still providing a sufficient backstop so as to ensure that benefits will accrue to the populations for which they were truly intended.
- UCS supports the EPA’s proposal for the initial allocation of credits between resources and across states, but recommends that any unclaimed allowances be swept into a single federal pool and credited to eligible projects on a first-come, first-served basis.

UCS strongly supports the EPA’s development of the CEIP, and applauds the EPA for recognizing not only the need for—and long-term benefits of—proactive development of renewable resources, but also the outsized benefits that can accrue to low-income populations that have been previously limited in their access to energy efficiency gains. In support of creating the most effective incentive program possible, UCS submitted comments to the December 15, 2015, docket (EPA-HQ-OAR-2015-0734)⁴² offering recommendations on improving the design and implementation of the CEIP. Given the multiple dependencies shared by the CEIP and the broader CPP, we have repeated our CEIP comments, with some minor amendments for further clarification, below.

6.1. UCS encourages the EPA to amend CEIP project and generation timing eligibility so as to be more inclusive of projects, not less.

As noted in the final emission guidelines, a primary aim of the CEIP is to drive early investments in renewable energy and low-income energy efficiency projects. UCS supports this goal, but proposes the following adjustments to timing eligibility criteria to further this aim. We believe these modifications will ensure that renewable energy and energy efficiency projects have sufficient time for planning and deployment to maximize emission reductions and other benefits from the program.

First, in an effort to increase the scope of projects eligible under the CEIP, we propose shifting the initiation of project eligibility from after the date a state submits its final plan to the submission of a state’s expression of intent to participate in the CEIP, as due on September 6, 2016. This includes states that have only submitted initial state plans by that time. Such an adjustment could result in up to two more years’ worth of projects being included in the incentive program, and help to avoid the potential for otherwise-eligible projects stalling implementation due to overly restrictive

⁴² Union of Concerned Scientists. 2015. *Technical comments on the Clean Energy Incentive Program (CEIP) Design and Implementation*. Cambridge, MA. Online at www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2015-0734-0097, accessed on January 12, 2016.

timelines. This action would more directly address the delay in implementation of renewable energy and energy efficiency projects that the CEIP was designed to avoid.

The EPA can further expand the timeline by which projects can qualify under the CEIP by broadly defining the terms “commence construction” for renewable energy projects and “commence operations” for energy efficiency projects. Here, we propose that the EPA follow the general principles laid out in both the Internal Revenue Service’s definition for “beginning of construction” for the purposes of the renewable electricity production tax credit and the energy investment tax credit, and the EPA’s definition of “commence construction” as designated in 40 CFR 51.165(a)(1)(xvi). Specifically, both of these definitions understand a project to be started by way of actual physical construction, and we argue the EPA should not include preliminary, or “safe harbor,” activities.

UCS believes that the EPA also has opportunities to further incentivize early deployment of renewable energy and energy efficiency projects through the timing of credit generation and allocation. Specifically, UCS recommends that the EPA allow projects to receive credits over a longer period of time. As a first-best option for achieving this aim, we believe that the EPA should expand the window during which projects can receive credit for renewable energy generated or megawatt hours saved. Under such a scenario, we recommend that projects become eligible for credits as soon as a final state plan has been submitted. For federal plan states, this means September 2018; for states submitting their own plans, projects could become eligible as soon as September 2016. By expanding the credit-generation window, the EPA can ease the unintentional delay in projects its proposed CEIP timeline has the potential to create by rewarding projects for getting underway sooner rather than later. Such action should be taken without adjusting the total matching pool of 300 million short tons. Importantly, this approach has the added benefit of encouraging states to submit their final state plans as early as possible so as to allow CEIP projects within their states to begin receiving credit.

However, if the EPA does not have the ability to expand the credit generation window as proposed above, we offer a second option to similarly incentivize proactive project development. Under this alternative proposal, the eligible credit generation period would remain 2020 and 2021, as the EPA originally proposed for the CEIP. The credit allocation period, though, would be expanded to begin offering credits to eligible programs based on projected renewable energy generation or energy efficiency savings beginning in 2018. Early issuance of credits has the potential to hasten the transparency and liquidity of the applicable credit market, and thus assist projects in securing additional early financing. A true-up period following the close of the program generation window would ensure that projected generation and savings matched actual recorded achievements.

6.2. UCS applauds the EPA for its support of low-income energy efficiency projects, and encourages the agency to apply deference to state definitions of eligible populations and technologies.

Energy efficiency provides an economically efficient means of lowering carbon dioxide emissions, and such projects have a critical role to play in meeting near- and long-term CPP emission goals. However, as the EPA rightly noted in its final emission guidelines when providing the context for the CEIP, historically, not all populations have had the opportunity to participate in—and benefit from—energy efficiency programs. In particular, low-income groups have been limited in their ability to gain access to these projects, despite the outsized benefits these communities could realize from such initiatives. We commend the EPA for recognizing these barriers to access, and taking action in the CEIP to specifically incentivize the development of energy efficiency projects in low-income communities. Here, we provide input regarding the definition of “low-income community,” and consider a broadened interpretation of eligible energy efficiency projects.

As the EPA considers defining “low-income community” for the purposes of the CEIP, it should err on the side of inclusion rather than exclusion, such that low-income individuals receive maximum benefits from the program. Given the program’s goal of increasing access to energy efficiency programs by populations that have traditionally struggled for such access, we believe it important that the EPA do everything it can to avoid developing definitions that unintentionally serve to introduce more barriers. At the same time, the EPA must also take care not to allow so broad a definition as to undermine the goals of its implementation. UCS finds it particularly important to support definitions that recognize individuals or entities that should be supported by the program, but live in areas not otherwise classified as “low-income.”

We believe the EPA should work with states to provide appropriate flexibility where relevant state definitions currently exist. Many states have significant experience in this area, either through the application of existing federal

programs (e.g., the Department of Energy’s Weatherization Assistance Program), or through the implementation of customized, targeted programs within their state borders. Therefore, instead of implementing a definition consisting of explicit income levels, poverty rates, and other metrics, the EPA should instead work to provide a rigorous framework upon which states can base their own definitions, albeit with the EPA maintaining control over final approval of states’ proposed definitions. We also urge the EPA to include within its framework—given the long-term goals of the CPP—the option for states to consider project eligibility through the lens of environmental justice indicators as well as traditional socioeconomic indicators. Finally, the EPA’s guidance to states should draw on insights from existing tools and programs, including but not limited to the Environmental Justice Screening and Mapping Tool (EJSCREEN), the Housing and Urban Development’s housing assistance programs, and the Department of Treasury’s Community Development Financial Institutions Fund.

As to eligible projects, UCS recommends that the EPA include CHP plants in its definition of qualified energy efficiency projects. We understand that the EPA has valuable reasons for limiting the scope of technologies and applications considered eligible under the CEIP for both renewable energy and energy efficiency projects. However, we also know that CHP has the potential to contribute significant positive benefits to low-income communities through decreased utility bills in multi-family housing units, and decreased localized pollution exposure from emissions-heavy industrial facilities. Such installations would indeed get at the heart of the EPA’s intentions with the CEIP’s low-income energy efficiency incentive. Should the EPA move forward with allowing CHP installations, however, it is critical that the agency maintain strict standards on the types of CHP projects that should and should not be eligible, given the potential for program abuse resulting in a distribution of benefits that fails to accrue to the originally intended populations.

6.3. UCS supports the EPA’s primary proposed distribution and allocation approaches, but recommends a more progressive approach to the final distribution of initially unclaimed allowances from the matching pool.

The EPA has a range of options for the initial disbursement of its matching pool, as well as how it handles the subsequent re-allocations of unclaimed and unused credits. The EPA also has the ability to shift the proportion of credits available to renewable energy and energy efficiency projects. We believe that the manner by which the EPA distributes and issues these credits could have a significant impact on the development and deployment of eligible renewable energy and energy efficiency projects within CEIP-participating states, and thus offer guidance on preferred credit distribution and allocation methods.

First, we support the EPA’s proposed approach to evenly balance the distribution of its matching pool between renewable energy and energy efficiency reserves. By maintaining a fifty-fifty split between the reserves, the EPA highlights the critical importance of both renewable energy and energy efficiency investments for CPP compliance. However, we also believe that the EPA should allow participating states some level of flexibility to re-distribute credits between the two reserves, in recognition of the varying needs and technical efficiencies specific to each state. To ensure that states are not able to skew the contribution of either renewable energy or energy efficiency so far as to be a detriment to the other, such flexibility should be limited in scope; for example, by a range that does not deviate by more than 10 to 15 percentage points from the original fifty-fifty split.

We similarly support the EPA’s proposed pro-rata credit allocation scheme, which initially provides the most credits to the states that have the highest relative emission reduction requirements. Such a scheme serves to furthest incentivize those states with the greatest potential to benefit from proactive deployment of renewable energy and energy efficiency investments. However, we also support the EPA’s vision of an iterative credit re-allocation system, whereby unclaimed or unused credits would not be retired from the CEIP simply because the initially intended state did not take action.

Following the initial allocation of credits, the EPA proposes to re-allocate all credits that remain unclaimed by non-participating states. We agree with the need for this credit reallocation, but believe that the EPA’s alternative proposed approach better suits the goals of the CEIP than the original approach. Specifically, we see value in gathering all unclaimed allowances into a single federal pool and then allowing project providers to compete for them on a first-come, first-served basis. We recommend clarifying that eligibility for this additional pool of credits be limited to only those

projects located in states where the original EPA allocation has already been exhausted. This limitation will help ensure that projects are not circumventing state-based restrictions on participation by applying directly to the federal pool even when their own state's pool still has credits remaining. To improve program efficiency, the EPA may want to consider having states aggregate project requests for re-allocated credits and submit those requests to the EPA on their behalf, thereby limiting the points of contact required by the EPA.

Finally, we support the EPA's proposal to retire any unused matching credits remaining in states' accounts on January 1, 2023. However, we believe it to be important that states have the ability to shift any unused matching credits in one reserve to a fully depleted alternative reserve should they find themselves with one or the other program more fully subscribed. This ability should happen *after* projects have had a full opportunity to apply to the program, but before the EPA will take action to retire unused matching credits.