

**Comments of the American Council for an Energy-Efficient Economy on the
Environmental Protection Agency's Proposed Clean Energy Incentive Program
Design Details; Docket No. EPA-HQ-OAR-2016-0033
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Overview

The American Council for an Energy-Efficient Economy (ACEEE) is a nonprofit 501(c)(3) research organization that acts as a catalyst to advance energy efficiency (EE) policies, programs, technologies, investments, and behaviors. We believe that the United States can harness the full potential of energy efficiency to achieve greater economic prosperity, energy security, and environmental protection for all of its people.

We commend the Environmental Protection Agency (EPA) for recognizing the importance of flexibility in the Clean Energy Incentive Program (CEIP) by allowing states to consider multiple definitions for what constitutes a low-income community and including a broad set of eligible projects. In addition to encouraging state choice, this will allow project implementers to deliver savings to those communities most in need. We support the earlier date of September 6, 2018, as the date on or after which demand-side EE projects serving low-income communities must commence operations. We also support the inclusion of commercial and conservation voltage reduction (CVR) projects implemented to serve low-income communities, and the creation of optional example regulatory text for states.

Recognizing the importance of the CEIP as an opportunity to spur early investment in low-cost emission reduction strategies and to benefit low-income communities, we offer several recommendations to support the deployment of energy efficiency. The recommendations contained in these comments include the following:

- Expand the Renewable Energy Reserve (RER) to include energy efficiency policies and measures.
- Increase the incentive for residential energy efficiency and solar projects implemented to serve low-income households.
- Expand project eligibility to include combined heat and power (CHP) and support flexibility for energy efficiency projects within the Low Income Community Reserve (LICR).
- Create optional, presumptively approvable regulatory text with expanded detail and specificity.

We have attempted to keep our comments brief and direct but welcome further discussion on any of the issues we raise or any issues EPA may be considering regarding the treatment of energy efficiency in the CEIP.

Expand the Renewable Energy Reserve to Include Energy Efficiency Policies and Measures

Energy efficiency is a zero-emission and least-cost option for states to use in complying with the Clean Power Plan while supplying affordable, reliable electricity to their residents and businesses. In order to ensure that early action is rewarded and that the momentum of efforts in states is not stymied, we recommend that early investments in energy efficiency receive at least the same incentive as early investments in renewable energy. This can be achieved by expanding the scope of the RER so that, like all renewables, all early investment in energy efficiency can receive allowances or emission rate credits (ERCs) with a federal match at a ratio of 1:1.¹

Although EPA's cost-benefit analysis shows that energy efficiency is the cheaper path for compliance, by incentivizing renewable energy over energy efficiency, EPA will in effect be making the CEIP more expensive for states to implement.² This will particularly impact communities with high energy burdens and those most vulnerable to climate change.³

By excluding energy efficiency in this early action program, EPA runs the risk of undermining energy efficiency as a compliance approach for states throughout the compliance period. As we have seen with past air regulations, administrative uncertainty surrounding compliance approaches is highly discouraging to states. Even though every state implements utility-run energy efficiency programs, only a handful of states have taken credit for energy efficiency in their past state implementation plans (SIPs).⁴ Providing a clear path for energy efficiency to receive credit as an early action compliance approach will offer certainty to states considering energy efficiency as a compliance strategy. Allowing energy efficiency to receive a federal match of 1:1 in the CEIP will help to pave the way for states to implement the lowest-cost approach throughout compliance.

EPA outlines four criteria that renewable energy technologies must meet to qualify for 1:1 credit. Energy efficiency meets all of these criteria:

¹ Throughout this document we use the term *energy efficiency* to refer to demand-side energy efficiency measures, programs, policies, and projects.

² EPA, *Regulatory Impact Analysis for the Clean Power Plan Final Rule* (2015). www.epa.gov/cleanpowerplan/clean-power-plan-final-rule-regulatory-impact-analysis.

³ A. Dreihobl and L. Ross, *Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low-Income and Underserved Communities* (ACEEE, 2016). aceee.org/research-report/u1602.

⁴ S. Nowak, A. Gilleo, and T. Bailey, "Utility and Public Benefits Programs and Policies," in *The 2015 State Energy Efficiency Scorecard* (ACEEE, 2015). aceee.org/research-report/u1509.
S. Hayes and R. Young, *Energy Efficiency: The Slip Switch to a New Track toward Compliance with Federal Air Regulations* (ACEEE, 2012). aceee.org/research-report/e122. See discussion of states' experience with energy efficiency in SIPs beginning on page 11.

1. **Zero-emitting resource.** Energy efficiency reduces energy demand, offsetting the amount of electricity that must be generated from existing emitting sources such as coal and natural gas. As a zero-emissions resource, energy efficiency has a long history of achieving significant emissions reductions in the power sector.⁵
2. **Essential to longer-term climate strategies.** Energy efficiency is essential to longer-term climate strategies and is a source of multiple benefits to ratepayers and program participants.⁶ By implementing energy efficiency policies and programs, communities will benefit from sustained emissions reductions, improved resiliency, more reliable and affordable energy, and enhanced flexibility in meeting long-term climate goals.⁷
3. **Counteracts the potential shift in investment from RE to natural gas in the lead-up to the start of the interim performance period.** Energy efficiency reduces overall electricity demand, obviating the need for large-scale gas-fired power plants to meet demand.⁸ Efficiency also helps with renewable energy deployment because it can be used to address intermittency concerns that are sometimes raised in connection with large-scale renewable energy deployment.⁹
4. **Requires investment and deployment lead times of relatively shorter duration.** Energy efficiency requires investment and deployment lead times of relatively short duration that would be achievable in the time frame of the CEIP. Energy efficiency investments can be procured relatively quickly, compared with the longer lead time required for permitting new generation sources or transmission lines. It can take more than a decade to bring a new generation source online, and any number of pitfalls can delay the project, such as issues in securing financing or the necessary permits, market volatility, and construction delays. In contrast, energy efficiency comes in fairly small portions, so investments can be spread out over time or deployed quickly as needed.¹⁰

Energy efficiency meets all of the criteria for eligible technologies outlined by EPA in this proposal. Like renewable energy, energy efficiency is a zero-emitting resource that contributes

⁵ M. Molina, P. Kiker, and S. Nowak, *The Greatest Energy Story You Haven't Heard: How Investing in Energy Efficiency Changed the US Power Sector and Gave Us a Tool to Tackle Climate Change* (ACEEE, 2016). [aceee.org/research-report/u1604](https://www.aceee.org/research-report/u1604).

⁶ EPA, *Demand-Side Energy Efficiency Technical Support Document* (2015), p. 6. www.epa.gov/sites/production/files/2015-11/documents/tsd-cpp-demand-side-ee.pdf. EPA notes that energy efficiency can play a critical role in enhancing the flexibility and reducing the costs of meeting long-term climate goals.

⁷ D. Ribeiro et al., *Enhancing Community Resilience through Energy Efficiency* (ACEEE, 2015). [aceee.org/research-report/u1508](https://www.aceee.org/research-report/u1508).

⁸ C. Russell et al., *Recognizing the Value of Energy Efficiency's Multiple Benefits* (ACEEE, 2015). [aceee.org/research-report/ie1502](https://www.aceee.org/research-report/ie1502).

⁹ J. Lazar, *Teaching the Duck to Fly* (Regulatory Assistance Project, 2016). www.raponline.org/wp-content/uploads/2016/05/rap-lazar-teachingtheduck2-2016-feb-2.pdf.

M. Brown, A. Smith, and G. Kim, *The Clean Power Plan and Beyond* (Georgia Institute of Technology, 2016). cepl.gatech.edu/projects/ppce/cpp%26b#.

¹⁰ R. N. Elliott, R. Gold, and S. Hayes, *Avoiding a Train Wreck: Replacing Old Coal Plants with Energy Efficiency* (ACEEE, 2011), p. 7. [aceee.org/white-paper/avoiding-a-train-wreck](https://www.aceee.org/white-paper/avoiding-a-train-wreck).

to long-term climate change strategies, and it can be implemented on the timescale needed under the CEIP. Given that energy efficiency is on par with renewable energy under EPA's criteria, it should be treated as an additional resource eligible to receive 1:1 credit under the RER. Energy efficiency is a cost-effective resource; however, it will not automatically be deployed due to several existing barriers to implementation.¹¹ In order to help offset the up-front cost associated with energy efficiency, we request that EPA offer the same incentive to energy efficiency that renewable energy receives under the CEIP.

Since the original CEIP proposal was released along with the final Clean Power Plan (CPP) emissions guidelines (EGs), the Investment Tax Credit (ITC) and Production Tax Credit (PTC) for renewable energy have been extended. EPA points out in this proposal that combining the RER incentive with the extended federal tax credits for wind and solar may be problematic due to the fact that the tax credits will help to meet the CEIP's objectives with respect to promoting increased deployment of renewable energy. By dividing the RER between renewable and energy efficiency projects, this problem is mitigated. We support a mechanism to limit the number of early action allowances or ERCs available to wind and solar projects that also qualify for the ITC or PTC. EPA suggests apportioning less than 50% of the 300 million short ton matching pool to eligible RE projects through the RER. We support limiting the RER matching pool for renewable energy projects to 25%. This would leave the remaining 25% of the RER matching pool available for qualifying energy efficiency projects on a 1:1 basis. Similar to renewable energy projects, energy efficiency projects eligible to receive 1:1 matching credits or allowances through the RER could commence operations on or after January 1, 2020. This date would create consistency with renewable energy projects and would sufficiently limit eligible energy efficiency projects in order to take advantage of 25% of the allowances or credits available through the RER matching pool.¹²

Increase the Incentive for Residential Energy Efficiency and Solar Projects Implemented to Serve Low-Income Households

We think it is critical to provide additional support for low-income households. Low-income single- and multifamily households confront a number of barriers to energy efficiency participation. Overcoming these barriers will help low-income families to realize significant benefits, including reduced energy bills, which will help to alleviate high energy burdens; improved housing stock; and a variety of associated safety, health, and quality-of-life benefits.¹³ In order to drive significant new investment in the residential sector and to utilize a greater portion of the available allowances or ERCs in the LICR matching pool, we recommend significantly increasing the 2:1 ratio awarded for residential demand-side EE projects for low-

¹¹ S. Vaidyanathan et al., *Overcoming Market Barriers and Using Market Forces to Advance Energy Efficiency* (ACEEE, 2013). aceee.org/research-report/e136. Existing market barriers to energy efficiency include upfront cost, imperfect information, and split incentives, among others.

¹² A. Gilleo et al., *The 2015 State Energy Efficiency Scorecard* (ACEEE, 2015). aceee.org/research-report/u1509. Savings from utility-run electricity efficiency programs totaled approximately 25.7 million megawatt-hours (MWh) in 2014, a 5.8% increase over the prior year. We are proposing to make available 75 million allowances for energy efficiency in each year of the CEIP through the RER (this includes state and federal matching allowances), which would create an incentive to maintain current programs, but also increase energy efficiency savings significantly.

¹³ A. Drehobl and L. Ross, *Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low-Income and Underserved Communities* (ACEEE, 2016). aceee.org/research-report/u1602.

income single- and multifamily households.¹⁴ We also think this opportunity should extend to residential solar projects, due in particular to the fact that there are similar barriers to implementation. Increasing the incentive will help to ensure that residential projects are a major component of the CEIP and that low-income households can directly participate and benefit from this program.

As EPA notes in this proposal, a key barrier to implementing demand-side EE projects in low-income communities is the lack of up-front capital. While the proposed 2:1 incentive for energy efficiency is a step in the right direction, it is not adequate to drive significant new EE projects to benefit low-income households. We estimate that even with a \$35-per-ton allowance price, the value of the CEIP incentive awarded to a single-family home would be less than 2% of the total project cost.¹⁵ This financial incentive is unlikely to motivate the large increase in program participation necessary to fully take advantage of the 150 million matching allowances available in the LICR. While several barriers to program participation exist for the residential sector, access to upfront capital is a significant hurdle for low-income single- and multifamily households and property owners in particular.¹⁶ If EPA intends for the CEIP to increase investments for low-income households beyond business as usual, and intends as well to ensure this early action program benefits the residential as well as commercial sector, then the financial incentive needs to be more significant in order to help overcome the up-front barriers to program participation.

EPA estimates that the energy savings potential from eligible low-income demand-side EE projects could reach up to 39 million MWh, with 15 million MWh from potential solar projects implemented in low-income communities in 2020 and 2021 combined.¹⁷ In total, this represents only approximately 15% of the total allowances or ERCs available to states in EPA's matching pool. EPA's estimate of potential for low-income EE savings and solar projects is far too low to take advantage of the 150 million matching allowances available in the LICR, and a greater incentive could be created by leveraging the portion of the LICR that would otherwise go unused. EPA projects that only 43 million allowances will be awarded to eligible projects and is proposing to retire all unused allowances or ERCs from the matching pool. This means that out of the 150 million matching allowances available to eligible projects in the LICR, more than 100 million allowances will be retired. This implies, for example, that the number of allowances or ERCs issued to residential demand-side EE and solar implemented in low-income households could be tripled and still remain within the limit available in the LICR.

Considering the CEIP was designed to increase investment in underserved communities — rather than as a means of withdrawing a significant portion of allowances from state use — we

¹⁴ ACEEE supports awarding credit to commercial projects in the LICR on a 2:1 basis.

¹⁵ L. Ross and S. Hayes, *Assessing the Potential for Energy Efficiency in Low-Income Households under the Clean Power Plan* (ACEEE, 2016). [aceee.org/files/proceedings/2016/data/index.htm](https://www.aceee.org/files/proceedings/2016/data/index.htm).

¹⁶ L. Ross, M. Jarrett, and D. York, *Reaching More Residents: Opportunities for Increasing Participation in Multifamily Energy Efficiency Programs* (ACEEE, 2016). [aceee.org/reaching-more-residents-opportunities-increasing](https://www.aceee.org/reaching-more-residents-opportunities-increasing).
A. Dreihobl and L. Ross, *Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low-Income and Underserved Communities* (ACEEE, 2016). [aceee.org/research-report/u1602](https://www.aceee.org/research-report/u1602).

¹⁷ This represents 54 million out of 187.5 million matching ERCs, or 43 million out of 150 million matching allowances, due to the conversion factor of 1 ERC = 0.8 allowance.

recommend that EPA provide an increased incentive to motivate project implementers and customers in the residential sector to more fully take advantage of the CEIP. This will help to spur investment in a sector that faces significant up-front barriers, achieve emissions reductions and a variety of other benefits associated with energy efficiency and solar projects, and still leave a smaller portion of allowances remaining in the LICR for retirement. The environmental integrity of the CPP would be maintained in a mass-based approach through the existence of the overall cap on allowable emissions. In a rate-based approach, EPA's recommendation to apply an adjustment factor to a state's future year's allocation of ERCs would function as a method to maintain CO₂ emissions performance.¹⁸

Expand Project Eligibility to Include CHP and Support Flexibility for Energy Efficiency Projects within the Low-Income Community Reserve

We support the earlier date of September 6, 2018, as the date on or after which demand-side EE projects serving low-income communities must commence operations. This will help to provide the lead time needed to ensure that early action is rewarded and drive momentum in states to deliver energy savings to low-income communities. In addition, we support the ability of states to use a third-party agent to review CEIP projects, and we support the flexibility EPA has given to states to consider what constitutes a low-income community and to determine what demand-side EE projects are eligible to receive credit from the LICR. While we support the inclusion of commercial and conservation voltage reduction (CVR) projects as allowable demand-side EE projects eligible for 2:1 credit from the LICR, we recommend that EPA include additional project examples for states to consider.

Conservation voltage reduction can provide significant savings for customers through improved end-use equipment efficiency. We support the inclusion of CVR projects in low-income communities as eligible to receive 2:1 credit from the LICR. CVR typically reduces electricity consumption by 2% or a little more, with most of these savings on the customer side of the meter.¹⁹

We support EPA's recommendation that states consider commercial EE projects in buildings that provide critical services within or to low-income communities and/or households, and in buildings occupied by small businesses, organizations, and institutions that work with low-income residents.

Similarly, EPA should include combined heat and power projects in buildings that provide critical services within or to low-income communities and/or households and in other public buildings that serve low-income residents. EPA defines demand-side EE in this proposal as referring to "an extensive array of technologies, practices, and measures that are applied throughout all sectors of the economy to reduce electricity demand while providing the same, and sometimes better, level and quality of service."²⁰ As a technology used to generate both heat

¹⁸ EPA, *Clean Energy Incentive Program Design Details*, 81 Fed. Reg. 42959 (2016).

www.federalregister.gov/articles/2016/06/30/2016-15000/clean-energy-incentive-program-design-details.

¹⁹ S. Nadel, "Conservation Voltage Reduction," in *New Horizons for Energy Efficiency: Major Opportunities to Reach Higher Electricity Savings by 2030* (ACEEE, 2015). aceee.org/research-report/u1507.

²⁰ EPA, *Clean Energy Incentive Program Design Details*, 81 Fed. Reg. 42965 and 81 Fed. Reg. 42972 (2016).

www.federalregister.gov/articles/2016/06/30/2016-15000/clean-energy-incentive-program-design-details.

and electricity in a single integrated system, CHP lowers emissions and increases overall fuel efficiency. CHP would therefore seem to qualify as an eligible low-income community demand-side EE project. However, it is unclear from the proposal whether this is the case. We request that EPA clearly define CHP as a technology eligible to receive credit for serving low-income communities as defined by the state, and provide an example of CHP that serves a public purpose and benefits low-income communities for states to consider.

There is significant federal support for the implementation of CHP projects for their benefits to communities. For example, in *Energy Efficiency and Renewable Energy in Low-Income Communities: A Guide to EPA Programs*, EPA recognizes and supports the value CHP brings to low-income communities and identifies state and local actions that support the development of CHP at multifamily housing and community facilities.²¹ Other agencies including EPA, DOE, and HUD have researched and documented the resiliency and reliability benefits that CHP provided to communities during Hurricane Sandy, citing more than a dozen case studies of critical facilities that ensured uninterrupted services by using CHP.²²

CHP installed at critical facilities and other public buildings can benefit communities in a variety of ways, including producing cost savings, lowering emissions, and improving reliability and resiliency in emergencies. A CHP system provided continuous power to South Oaks Hospital on Long Island, New York when the grid went down during the Northeast Blackout in 2003 and during Hurricane Sandy in 2012. Hospital staff provided uninterrupted care for their patients as CHP provided electricity and power to several buildings on the hospital campus, including a psychiatric hospital, nursing home, and assisted living facility. During Sandy, South Oaks admitted patients transferred from other hospitals without power, served as a 24-hour emergency operations center, and acted as a refuge for community members displaced by the storm.²³

In addition to resiliency and reliability benefits, CHP systems produce significant cost savings for building owners and residents. The New Bedford Housing Authority (NBHA), in Massachusetts, reduced its energy costs by \$58,000 annually with a 75 kW CHP system at Boa Vista Apartments, a public housing facility serving elderly residents. Over a four-year period, energy costs averaged 43% less than before the system was installed in 2009.²⁴ In another

The definition used for demand-side EE within this proposal further references the EPA *Demand-Side Energy Efficiency Technical Support Document* (2015) released with the final Clean Power Plan EGs that highlights CHP as an option for state, federal, and local facilities financing energy efficiency projects with energy savings performance contracting. www.epa.gov/sites/production/files/2015-11/documents/tsd-cpp-demand-side-ee.pdf.

²¹ EPA, *Energy Efficiency and Renewable Energy in Low-Income Communities: A Guide to EPA Programs* (2015). www.epa.gov/sites/production/files/2016-03/documents/epa_low_income_program_guide_508_2-29-16.pdf.

²² EPA, DOE, and HUD, *Guide to Using Combined Heat and Power for Enhancing Reliability and Resiliency in Buildings* (2013). portal.hud.gov/hudportal/documents/huddoc?id=CHPSept2013.pdf. A. Hampson et al., *Combined Heat and Power: Enabling Resilient Energy Infrastructure for Critical Facilities* (DOE, 2013). www1.eere.energy.gov/manufacturing/distributedenergy/pdfs/chp_critical_facilities.pdf.

²³ A. Hampson et al. (DOE, 2013).

²⁴ New Bedford Housing Authority, "Boa Vista Apartments—NBHA 75 kW CHP System" (2016). newbedfordhousingauthority.org/2015/07/boa-vista-apartments-new-bedford-housing-authority-75-kw-chp-system/.

example, tenants of Roosevelt Landings, a 1,003-unit, mixed-income apartment complex in New York City, realized cost savings from the installation of a 300 kW CHP system in 2014. This resulted in more affordable apartments and reduced operating costs over the long term for the complex.²⁵ In addition to these cost savings, the CHP system reduces CO₂ emissions by more than 1,600 tons annually.²⁶

The final EGs recognize the value of CHP as an emissions-reduction strategy and explicitly identify it as a technology that qualifies for the issuance of ERCs in rate-based state plans. We recommend that EPA extend to the CEIP the accounting considerations outlined in the final EGs (e.g., calculating a CHP unit's incremental CO₂ emissions rate compared with a reference CO₂ emissions rate) so that ERCs and allowances are calculated the same way.²⁷

Create Optional, Presumptively Approvable Regulatory Text with Expanded Detail and Specificity

Presumptively approvable text will help to outline methods for states to consider in their plans and provide clear guidance for states looking to participate in the CEIP. While we support the creation of optional example regulatory text for both rate- and mass-based state plans, we request that EPA include additional examples and guidance pertaining to demand-side EE within the text in order to provide a clear path for incentivizing energy efficiency. This language should, in particular, provide clear and straightforward methods for handling evaluation, measurement, and verification (EM&V) in both a rate-based and mass-based approach. In addition, we request that EPA provide a more straightforward guidance document outlining the presumptively approvable text, since it is not clear in the proposal where the text begins and ends.

We support the flexibility offered to states to choose a definition for low-income communities. In addition to the four federal-level definitions proposed by EPA, we recommend that EPA include within the presumptively approvable regulatory text any household receiving federal housing assistance where program eligibility is set at 80% of area median income (AMI) or less. As poverty guidelines do not always reflect geographic variations in cost of living, this additional definition would capture households that are burdened by energy and housing costs because they live in expensive markets. In addition, this would help to minimize the administrative burden on program providers to verify applicants' income levels and offer greater flexibility to states.

We request that EPA include within the presumptively approvable text each of our recommendations listed herein, including:

²⁵ NYCEEC, *Clean Energy Pays Off in the Multifamily Market: Case Study* (2016). nyceec.com/wp-content/uploads/Roosevelt-Landings-case-study-NYCEEC-web.pdf.

²⁶ NYSERDA, *Combined Heat & Power Case Study: Roosevelt Landings* (2016). dataint.cdhenenergy.com/Fact Sheets/Fact Sheet - Roosevelt Landings - CHP.pdf.

²⁷ S. Hayes et al., *Comments of ACEEE On the Environmental Protection Agency's Proposed Federal Plan Requirements and Model Trading Rules: Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units* (ACEEE, 2016), p. 12. aceee.org/regulatory-filing/epa-012116. ACEEE identified two key flaws with EPA's proposed reference rate for CHP systems and recommended three alternative approaches for EPA to consider that would more accurately account for the zero-emissions MWh generated from CHP.

- Expand the RER to include energy efficiency policies and measures;
- Increase the incentive for residential energy efficiency and solar projects implemented to serve low-income households;
- Expand project eligibility to include CHP and support flexibility for energy efficiency projects within the LICR; and
- Provide clear and straightforward methods for handling EM&V in both a rate-based and mass-based approach, and include an additional federal-level definition for low-income communities.