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Environmental Protection Agency
EPA Docket Center (EPA/DC)
EPA WJC West Building, Room 3334
Attn: Docket ID No. EPA-HQ-OAR-2015-0199
1301 Constitution Avenue, N.W.
Washington, DC 20460

Subject: **Duke Energy Comments on the 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; PROPOSED RULE. 80 FED. REG. 64,966 (OCTOBER 23, 2015)**

Duke Energy Business Services, LLC (Duke Energy), on behalf of Duke Energy Carolinas, LLC, Duke Energy Indiana, Inc., Duke Energy Ohio, Inc., Duke Energy Kentucky, Inc., Duke Energy Florida, Inc., Duke Energy Progress, Inc. and Duke Energy Commercial Power submits the attached comments to the Environmental Protection Agency (EPA) on the above subject proposed rulemaking.

Should you have any questions regarding these comments, please contact Mike Stroben, Environmental & Energy Policy Director at michael.stroben@duke-energy.com or (704) 373-6846.

Sincerely,

Cari Boyce

Cari Boyce

Attachment

COMMENTS OF DUKE ENERGY

on the

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY'S

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; PROPOSED RULE

80 FED. REG. 64,966 (OCTOBER 23, 2015)

DOCKET ID NO. EPA–HQ–OAR–2015–0199

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I. Introduction

Duke Energy submits the following comments in response to the U.S. Environmental Protection Agency's ("EPA" or "Agency") proposed rule entitled "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," 80 Fed. Reg. 64,966 (Oct. 23, 2015) ("Proposal" or "Proposed Rule").

Duke Energy is the largest electric power holding company in the United States. Its regulated utility operations serve approximately 7.3 million electric customers located in six states in the Southeast and Midwest, representing a population of approximately 23 million people. Its Commercial Portfolio and International business segments own and operate diverse power generation assets in North America and Latin America, including a growing portfolio of renewable energy assets in the United States.

The CO_2 intensity of our fleet is lower than it was a decade ago, producing less emissions per kilowatt-hour generated. Nearly 35% of the electricity we generated in 2014 was from carbon-free sources, including nuclear, hydro, wind and solar. Duke Energy has invested more than $9 billion to retire 40 of our older coal units across the Carolinas and the Midwest and replace those plants with state-of-the-art generating facilities, representing approximately 6,600 MW of efficient electric capacity. We are planning to invest an additional $3 billion in renewable energy over the next 5 years, including adding up to 500 MW of new solar in Florida and investing $500 million to expand our solar commitment in North Carolina. Our planned investments in renewables will build upon our existing commercial portfolio of 17 wind farms and 34 solar farms in operation in 12 states, totaling more than 2 gigawatts of electric generating

capacity. As the owner and operator of the nation's largest regulated nuclear fleet, we believe nuclear power needs to be a part of any successful plan to reduce carbon dioxide emissions. Preserving the option for new nuclear generation and extending the use of our existing nuclear fleet are part of Duke Energy's long-term strategy to provide our customers with affordable, reliable and cleaner energy. Duke Energy offers energy efficiency programs to our customers to help them save money on their energy bills by making their homes and businesses more energy efficient.

A. Summary of Comments

Duke Energy recommends that EPA prepare to finalize both mass-based and rate-based federal plans. The federal plan approach EPA might promulgate for a state should align with the plan preference expressed by that state. If EPA does decide to finalize only one type of federal plan trading approach, Duke Energy recommends that it be a mass-based approach. Duke Energy supports EPA's proposal that allowances and ERCs can be banked for use in any future compliance period, with no restriction on their use. EPA should also allow borrowing in the final federal plans and model trading rules as an additional compliance flexibility measure.

Duke Energy supports EPA's proposal to allocate most allowances under a mass-based federal plan and model trading rule to affected EGUs using historical data. However, Duke Energy recommends that allowance allocations be determined based on CO_2 emissions during the 2010-2012 baseline period rather than MWh generation as EPA has proposed. Any final mass-based federal plan and model trading rule should emphasize that states retain discretion to choose their own allocation approaches regardless of the approach set forth in the final federal

plan and model rules, and make clear that EPA will not second guess how states choose to exercise this discretion.

With regard to allowance allocations to retired electric generating units (EGUs), Duke Energy supports the continued allocation of allowances to units that cease operation before the end of 2018 and that cease operation in 2019 or later. Continuing allocations to these units will reduce the financial incentive to keep a marginal unit operating simply to avoid losing the allowances. Another is the fact that the continued allocations to retired EGUs allows EGU owners and operators to invest in the other reductions that will need to be achieved at higher cost in order to achieve the goals established in the final EGs.

EPA has proposed that allowances would not be allocated to retired units on a continuing basis, but would instead be transferred at some point to state renewable energy (RE) set-asides. If EPA does not provide a continuing allocation to retired units, the allowances that would otherwise be awarded to retired units should not transferred to state RE set-asides. Transferring allowances from retired affected electric generating units (EGUs) to RE serves as a wealth transfer from affected EGU owners and their customers to RE sources, and will increase compliance costs for affected EGUs. If EPA does not provide a continuing allocation to retired EGUs, the allowances should be reallocated to the remaining affected EGUs. As with the broader allocation issue, states have the discretion to choose their own approach for dealing with allowance allocations to retired units, and any final federal plan and model trading rule should clearly state that EPA will defer to state decisions regarding allowance allocations to retired units. The way in which allowances allocations to retired units are handled will not adversely affect the environmental integrity of the program.

EPA proposes to implement the Clean Energy Incentive Program (CEIP) in ways that could limit the ultimate utility of the program in incentivizing early reductions from affected EGUs through the deployment of RE and low-income energy efficiency (EE) projects before the start of the Interim Period in 2022. EPA should ensure that the maximum number of CEIP credits/allowances can be earned, and used by affected EGUs for compliance. To this end, EPA should consider allowing eligible projects to earn credits as soon as they come on line and not just in 2020-2021. This will further incentivize early deployment, as projects would start earning credits sooner, and would also increase the potential for the entire federal matching pool to be utilized. In addition, in order to be able to fully realize the potential of the CEIP, projects that commence construction after September 6, 2016 should be eligible to earn emission reduction credits (ERCs)/allowances.

EPA has proposed that under a mass-based plan, states implementing the CEIP would set aside a portion of its allowances for eligible projects. The CEIP recognizes the value, both from an emission reduction perspective and from a compliance cost perspective, of early reductions. However, requiring states to set aside allowances for the CEIP limits state flexibility in the allocation of allowances and may serve to needlessly increase the direct cost of the programs for affected EGUs. Therefore, Duke Energy recommends that states not be required to set aside allowances for the CEIP in order to participate in the program and receive allowances from the federal pool.

The EPA proposes to redistribute any unallocated matching credits/allowances among states that opted to participate in the CEIP. This is a sound idea if limited to RE resources as these are not uniformly distributed across the states. EPA should, however, ensure that unused RE credits/allowances designated for a particular state can be redirected to incent more RE in

states with a greater endowment of RE resources. Allowing projects in other states with greater endowments of economically viable RE resources to be awarded unused CEIP RE credits/allowances will increase the overall amount of emissions reductions from renewable energy deployed, meeting the broader objective of the CEIP.

EPA proposes to reserve some portion of CEIP credits/allowances for low-income EE projects. Duke Energy believes that EE programs targeted to low income communities is important. However, based on our experience managing low income EE programs, Duke Energy is concerned that there could be unused allowances targeting low income EE programs. Therefore, if or as the share of allowances allocated to support low income EE programs is unused at the end of the period, the allowances should NOT be retired as proposed by EPA. Rather, these allowances should be given to the State to be sold with the provision that the resulting revenue be used to directly subsidize existing or new low income EE programs. If EPA decides not to allow states to sell unused low income EE allowances to continue to subsidize low income EE programs, then EPA should reallocate these allowances toward RE programs deployed within the State.

II. Federal Plan Structure

A. EPA Should Plan on Finalizing Rate-Based and Mass-Based Federal Plans

EPA indicates in the Proposal that it intends to finalize either a mass-based or rate-based federal plan trading approach for states in which it promulgates a federal plan, and invites comment on which approach should be selected if the Agency decides to finalize a single approach. 80 Fed. Reg. at 64,970. Duke Energy recommends that EPA prepare to finalize both mass-based and rate-based federal plans. The federal plan approach EPA might promulgate for a state should align with the plan preference expressed by that state. If a state submits a rate-based

plan that is disapproved by EPA, and EPA moves to impose a federal plan for that state, the federal plan EPA promulgates should be a rate-based plan. The same would be true for a state that submitted a mass-based plan that was disapproved by EPA. In this instance, EPA should promulgate a mass-based federal plan. Given the fact that EPA does not know which states it might be promulgating a federal plan for, and what the preference of those states might be, the only way to ensure that a promulgated federal plan aligns with the preference of a state that might become subject to a federal plan is for EPA to be prepared to finalize both plan types.

EPA suggests in the Proposal that states could decide to accept a federal plan for their sources rather than undertake the development of a plan of their own by not submitting a state plan. *Id*. at 64,968. This would be less likely to occur if EPA intends on finalizing only one federal plan approach, especially for states that might prefer a different approach from the one EPA would plan to finalize.

Assuming EPA does decide to prepare to finalize both rate-based and mass-based federal plans, in the event that a state fails to submit a plan, EPA should solicit input from that state regarding the type of plan it would prefer prior to EPA finalizing a federal plan type for the state. Just because a state fails to submit a plan doesn't mean that it doesn't have a plan preference, and as indicated previously, EPA has gone so far as to invite states to accept a federal plan for their sources rather than undertake the development of a plan of their own by not submitting a state plan. The only way this can work effectively is for EPA to prepare to finalize both rate-based and mass-based federal plans.

When EPA proposes a finding of failure or plan disapproval for a specific state, it should provide opportunity for notice and comment as to which type of plan the agency proposes to

implement and the rationale for that decision. Accordingly, EPA should engage in a rulemaking for each state for which the Agency proposes to impose a federal plan.

If EPA does decide to finalize only one type of federal plan trading approach, Duke Energy recommends that it be a mass-based approach. States and utilities have extensive experience with mass-based trading programs, and while it is unknown at this time how many states might prefer a mass-based plan versus a rate-based plan, it is likely that the majority of states developing a plan will gravitate to a mass-based plan. Therefore, a mass-based federal plan would be expected to provide sources in states subject to a federal plan with greater trading opportunities than a rate-based federal plan would be expected to provide.

B. Duke Energy Supports EPA's Proposal to Allow EGUs Located in States Covered by a Federal Plan and in states with an Approved State Plan to Trade Compliance Instruments

Duke Energy supports EPA's proposal that affected EGUs in any state covered by a federal plan can trade compliance instruments with affected EGUs in any other state covered by a federal plan and with affected sources in any state with an approved plan that meets the conditions for linkage to the federal plan. *Id*. at 64,976. Duke Energy also believes that EPA's proposed conditions for linking state and federal plans for purpose of allowing trading between the states are reasonable. Providing as broad a market as possible for trading for affected EGUs subject to a federal plan will help reduce compliance costs for utilities and reduce electricity cost increases for customers.

EPA requests comment on expanding the scope of interstate trading to include linking states covered by a mass-based or rate-based trading federal plan with any state that has an approved mass-based or rate-based trading state plan meeting the proposed conditions for linkages and that

uses an EPA designated ERC tracking system that is interoperable with an EPA-administered ERC tracking system. *Id*. at 64,977. Duke Energy supports such an expansion of the trading programs. One of the goals of the federal plan should be to encourage as broad a trading region as possible because that would tend to help lower overall compliance costs compared to trading that is limited in scope. Therefore, as long as an EPA-designated tracking system is determined by EPA to be functionally equivalent or interoperable with the EPA-administered tracking system, Duke Energy sees no reason not to allow EGUs in states operating under the two types of tracking systems to be allowed to trade among themselves. However, while tracking systems serve an important purpose and ensure the accurate accounting of all permits issued and tracks the ownership of permits throughout the system, it is important to acknowledge the importance of the security and integrity of these systems. The more tracking systems, the more opportunities for vulnerability to malicious/illegal attacks on the system. EPA should set a very high bar for security of its tracking system and assure that any linked systems have and maintain equal security measures.

C. Duke Energy Supports EPA's Proposal that Compliance be Evaluated Only After Each Multi-Year Compliance Period

EPA has proposed to evaluate compliance under a mass-based and rate-based federal plan only after the end of the multi-year compliance periods established in the final Clean Power Plan Emission Guidelines ("EGs"), but requests comment on implementing intervening compliance requirements. *Id*. at 65,013. Duke Energy supports EPA's proposal to evaluate compliance only after the end of each multi-year compliance period. Adding intervening compliance requirements would eliminate the flexibility EPA is intending to provide affected EGUs with multi-year compliance periods. For example, one of the reasons EPA gives for not proposing to allow borrowing across compliance periods is the flexibility that multi-year compliance periods

provide to schedule relatively greater emission reductions for later years within each period.[1] *Id*. at 65,014. Including intervening compliance requirements would inappropriately and unnecessarily reduce or eliminate this flexibility.

EPA states in the Proposal that it seeks to strike a reasonable balance between providing flexibility and reducing burden while assuring that any noncompliance can be addressed in a timely fashion. *Id*. at 65,013. Given the outstanding track record of EGU compliance with cap-and-trade programs over the years, the risk of noncompliance does not justify the use of intervening compliance requirements. In addition, as stated in the Proposal, EPA correctly "determined that the longer compliance periods provided for in this rulemaking are acceptable in the context of this specific rulemaking because of the unique characteristics of this rulemaking, including that CO_2 is long-lived in the atmosphere, and this rulemaking is focused on performance standards related to those long-term impacts." *Id*. at 65,014. Therefore, assessing compliance only after the end of each multi-year compliance period is adequate and appropriate.

D. EPA Has Correctly Proposed to Allow Unlimited Allowance and ERC Banking

EPA requests comment on its proposal that allowances and ERCs can be banked for use in any future compliance period, with no restriction on their use, including from the Interim Period (2022 through 2029) into the Final Period (2030 and thereafter). *Id*. Duke Energy supports the Agency proposal. Banking provides an economic incentive to make greater emission reductions sooner than required. The inability to bank allowances would eliminate this incentive. Banking also provides affected EGUs with greater flexibility to manage their compliance over the long term, with no impact on the overall level of emission reductions that

[1] As indicated in Section I.E of these comments, Duke Energy supports the borrowing of allowances in combination with the multi-year compliance periods.

must be achieved. In fact, banking typically results in emission reductions being made sooner than required. EPA has allowed unlimited banking of allowances under each of its SO_2 and NOx EGU cap-and-trade programs, as did Congress when it developed the Acid Rain SO_2 cap-and-trade program. Because there are no local environmental issues related to CO_2 emissions, there should be no concern that unlimited allowance banking either within the interim compliance period or the banking of Interim-Period allowances for use during the Final Period would result in adverse local impacts as banked allowances are used.

E. EPA Should Allow Affected Units to Borrow Allowances and ERCs from Future Compliance Periods

EPA does not propose to allow affected EGUs to borrow allowances and ERCs from future compliance periods due in part to its concerns about administrative complexity. *Id*. EPA, however, does not raise any environmental concerns about borrowing. The administrative complexity EPA cites as justification for not allowing borrowing are either nonexistent or can be reasonably addressed.

Borrowing is an important compliance flexibility measure that could help reduce costs to consumers, particularly in the early years of the Interim Period. Even if EPA does not allow borrowing under federal plans, EPA should make clear in the final model trading rules that states can allow affected units to borrow from future time periods for compliance.

With respect to a mass-based federal plan, EPA states that borrowing complicates future allocations of allowances and would interfere with a state's ability to implement its own allowance distribution scheme. *Id*. These concerns can be addressed via a fairly straightforward accounting of initial allocations granted to affected EGUs throughout the compliance period. As EGUs took allowances from these accounts, the number remaining would decrease until the

account was depleted. This would not change the overall amount of allowances available in the market throughout the compliance periods and therefore would not affect the environmental integrity of the program.

EPA has proposed to allocate allowances, based on historical generation, for each compliance period shortly before they begin, such that no allowances would be allocated beyond the immediately upcoming compliance period. In order to allow for borrowing, EPA notes that the Agency would have to make allowances from future compliance periods available sooner than proposed. EPA's primary objection to making allowances from future compliance periods available earlier is that it could complicate a state's ability to replace EPA's allowance allocation methodology with its own methodology. *Id*.

It is unclear why EPA believes that states will be more likely to submit their own allowance allocation methods after the start of the Interim Period than before it begins. Even if it were not determined until 2018, the final deadline for plan submissions, that a state would become subject to a federal plan, there is ample time before the start of the Interim Period in 2022 (and the first recordation of allowances into accounts on June 1, 2021) for states to submit their own allowance allocations. Given that states do not have to adopt any other elements of the federal plan in order to provide their own allocation methodologies, it should not take as long for a state to develop these methodologies as it would to create an entire state plan.

Even if a state did elect to submit its own allocation methodology after a unit had borrowed allowances from a future compliance period, this can be addressed without undermining the state's emissions budget. EPA asserts that allowing states to re-allocate allowances would render any borrowed allowances as "excess emissions beyond the levels

specified in the [emission guidelines]." *Id* This does not have to be the case. Any allowance that is borrowed by an affected unit from a future compliance period could be deducted from the total allowances remaining for the state to allocate under its own methodology, ensuring that more allowances are not allocated than those provided in the state's budget.

The allowances available for any particular unit to borrow could be limited to those that would have been allocated to the unit in the next compliance period. Because EPA has proposed to allocate allowances based on historical data, it is possible to calculate a unit's full complement of allowances for each compliance period in advance. Accordingly, borrowing could be limited to those allowances already reserved for that unit, which preserves environmental integrity. EPA has not presented any insurmountable administrative complexity that should bar affected units operating under a federal plan to borrow allowances.[2] However, if EPA chooses not to allow borrowing in the context of a federal plan, EPA's final model trading rules should make clear that states may choose to allow borrowing in approvable compliance plans.

The alternative compliance pathway option[3] would allow borrowing of the entire Interim Period allocation. It restricts this opportunity to affected EGUs that commit to consuming the entire allocation in the early years of the program, with a legally binding commitment to retire the unit once the allocation is consumed (or by December 31, 2029). EPA should lift the restrictions on this sort of program and allow all EGUs to gain access to the future allocation and manage it as they would any other asset without the requirements to consume the allowances and retire units. This would provide greater liquidity to the market and could serve as a source of

[2] EPA concerns related to a state replacing already allocated allowances under a federal plan are not applicable to a state operating under its own plan where it established allowance allocations initially.

[3] Alternative Compliance Option Technical Support Document (Docket EPA-HQ-OAR-2015-0199-0040).

funds for EGUs to invest in lower emitting technologies so as to meet the future emissions limits without harming the environmental integrity of the program.

Finally, EPA has already indicated that it is not concerned with the complexities created by borrowing for units that commit to retire once the borrowed allowances are consumed. There is not greater complexity imposed in a situation where a unit continues to run (rather than retire) and must still submit allowances to cover emissions. They simply have zero allowances left in an allocation account and must purchase the allowances needed to operate.

F. Duke Energy Recommendations Regarding Market Oversight

EPA is evaluating the options for providing oversight of the allowance or ERC markets that may be established through the final EGs and federal plans, and requests comment on appropriate market monitoring activities, which may include tracking ownership of allowances or ERCs, oversight of the creation and verification of credits, and tracking market activity. *Id*. at 64,977.

For trading programs, the largest possible scope is the most efficient scope, and Duke Energy encourages the Agency to do what it can to enable this. The breadth (scope) of the trading program is determined by 1) the number of trading partners participating and 2) the liquidity of the market. An important means to this end is assuring the market is open to third parties and liquidity providers. That is, under open participation market access is not limited to compliance entities such as affected EGUs and resources eligible to generate ERCs. EPA has proposed this approach, and Duke Energy supports maintaining it. *Id*. at 64,998.

Open participation provides cash flow and liquidity and improves the efficiency of compliance instrument markets. Liquidity is an important feature of any functioning market; the

greater the number of eligible buyers and sellers, the greater the ability of the market to accurately reflect the cost of compliance. Open participation also minimizes the risk that any one large entity will corner or otherwise manipulate the market.

Despite calls from some stakeholders, EPA should avoid creating complex mechanisms for market oversight and instead follow the model used by the Acid Rain Program. Duke Energy notes the innovation advanced by EPA where it simply advised that the market be allowed to work, with minimal bureaucratic apparatus or intervention. What is needed is to ensure emissions are rigorously measured and make sure the emissions numbers match up with allowances via the tracking system at the end of the compliance period.

Duke Energy notes that in some cases where policymakers have tried to constrain the market in an effort to avoid "manipulation," they have inadvertently created exploits that clever traders ultimately uncover. The constraints or special requirements can create the very problem policymakers sought to prevent.

III. Issues Related to the Proposed Mass-Based Federal Plan and Model Trading Rule

A. Duke Energy Recommendations Regarding Allowance Allocations under a Mass-Based Federal Plan and Model Trading Rule[4]

1. EPA Should Base Allowance Allocations on Historical CO_2 Emissions Rather than Historical MWh Generation

Duke Energy supports EPA's proposal to allocate most allowances under a mass-based federal plan and model trading rule to affected EGUs using historical data. *Id*. at 65,015. The purpose of allocating allowances is to protect electricity consumers from sudden and substantial

[4] Duke Energy's allowance allocation recommendations are relevant to a national-level allocation approach that EPA will adopt. It is recognized that it is not possible for any one allocation approach to be a good fit for all states, which is why it is critically important that EPA recognize that states retain the discretion to set their own allowance allocation approach.

increases in electricity prices. Allocating most allowances is generally the best way to do this.[5] However, Duke Energy recommends a different methodology from EPA's proposal to base allocations on 2010-2012 MWh generation data. *Id*. at 65,016. Specifically, Duke Energy recommends that allowance allocations be determined based on CO_2 emissions during the 2010-2012 baseline period.[6]

Under the Agency's proposed mass-based allocation approach, units that generated large amounts of electricity between 2010 and 2012 are granted a large number of allowances, regardless of their relative share of the state's CO_2 emissions. EPA states that it is important to "select an approach that is fair and reasonable…." *Id*. at 65,015. Yet EPA's historical generation methodology unfairly penalizes those facilities that are most in need of allowances. The historical generation approach unreasonably favors EGUs with relatively lower CO_2 emissions. With an emissions-based allocation methodology, each facility would receive allowances comparable to the facility's share of the state's aggregate CO_2 emissions during the baseline period used for determining allocations, 2010-2012 in this instance, thereby eliminating the bias inherent in the Agency's proposed MWh generation approach.

EPA's additional set-aside for affected natural gas combined cycle (NGCC) units further compounds the bias introduced by its proposed MWh based allocation methodology. EPA is proposing an output-based allocation (OBA) set-aside that provides allocations of allowances to

[5] As noted below, Duke Energy is not supporting any allocation to load serving entities in any final mass-based federal plan and model trading rule. While allocating a portion of the allowances to LSEs in deregulated states, such as Ohio, would be the best way to protect electricity consumers in those states, Duke Energy believes that such decisions should be left to the individual states that are located in fully deregulated electricity markets.

[6] As EPA has proposed, Duke Energy supports states having the ability to adopt an allowance allocation approach different from the approach the Agency finalizes in any mass-based federal plan and model rule.

existing NGCC units. 80 Fed. Reg. at 65,020. Under this approach, beginning in the second compliance period, those EGUs will receive an even larger allowance allocation if the eligible EGUs generate more electricity. A historical generation allocation methodology coupled with an output-based allocation set-aside unfairly provides excess allowances to natural gas units.

In addition to being a more equitable way to allocate allowances among affected EGUs, an emissions–based allocation approach would eliminate the need to translate allowance allocations from the generator level to the boiler level, which differs from how EPA tracks emissions in its monitoring system or how EPA has allocated allowances in prior emissions trading programs. As detailed in Section III.D of these comments, EPA made numerous significant errors in its translation of allowance allocations from the generator-level to the boiler level. An emissions-based allocation approach would eliminate the need for the Agency to perform such a translation, thereby eliminating a source of significant errors that exist with its proposed MWh generation-based allocations.

EPA states in the Proposal that it believes an allocation approach based on historical MWh generation is reasonable because it "…maximizes transparency and clarity of allowance allocations." *Id*. at 65,016. Duke Energy believes that an allocation approach based on actual CO_2 emissions is much more transparent than a MWh-based approach because each affected unit would receive an allocation based directly on the amount of CO_2 emitted during the baseline period. Nothing could be more transparent than allocating on the basis of emissions when dealing with a rule to limit CO_2 emissions.

If EPA decides to finalize an allowance allocation approach based on historical MWh generation, Duke Energy recommends that the Agency adopt its alternative allocation approach

that is still based on 2010-2012 MWh generation, but divides the total number of allowances from a state's mass goal (minus the set-asides) into affected EGU source categories – based on analysis done in developing the source category-specific CO_2 emissions performance rates promulgated in the Clean Power Plan EGs – before determining unit-level allocations. *Id*. at 65,017. This approach, while not preferable to an emissions-based approach, would be preferable to EPA's proposed MWh approach because by dividing the allowances in a state by source category, it results in a distribution of allowances that would be closer at the source-category level to the future category-level pattern of emissions, and thus to allowances ultimately used, than the Agency's proposed approach.

Again, a drawback to EPA's alternative MWh generation-based approach is that it would still require EPA to first calculate allowance allocations at the generator level and then translate those allocations to the boiler level. As Duke Energy has documented in Section III.D of these comments, in the Proposal, EPA made numerous errors in performing this translation, which is one reason Duke Energy favors an emissions-based approach. It is a straight forward approach that does not require the Agency to calculate allowance allocations first at the generator level and then at the boiler level, and it would eliminate the allocation bias that would result from its proposed approach. While EPA's alternative MWh based approach would also address to some degree the allocation bias of its proposed approach, it is not favored over an emissions-based approach.

2. Affected EGUs That Cease Operation in 2019 or Later Should Continue to Receive an Allowance Allocation

Regardless of the approach EPA takes with regard to allowance allocations to retired units in a final mass-based federal plan and model trading rule, states have the discretion to

choose their own approach for dealing with allowance allocations to retired units. Any final federal plan and model trading rule should clearly state that EPA will defer to state decisions regarding allowance allocations to retired units.

EPA has proposed that affected EGUs that do not operate for 2 full calendar years after 2019 would lose their allocation starting with the next compliance period for which allowances have not yet been recorded. The number of years of non-operation for which a unit that ceases operation in 2019 or later would depend on when a unit ceased operation. The Agency requests comment on the number of years of non-operation for which a unit would continue to receive allocations. The Agency also seeks comment on whether to continue to allocate allowances to retired units.[7]

Duke Energy supports the continued allocation of allowances to affected EGUs that cease operation in 2019 or later. One reason for continuing to provide an allowance allocation to these retired EGUs is to reduce the financial incentive to keep a unit operating to avoid losing the allowances. Another is the fact that the continued allocations to retired EGUs allows EGU owners and operators to invest in the other reductions that will need to be achieved at higher cost in order to achieve the goals established in the final EGs.

While it is true that retired units are no longer emitting units and therefore do not have a compliance obligation, EPA must recognize that many units will be retired in response to the

[7] Allowance Allocation Proposed Rule Technical Support Document (TSD). EPA-HQ-OAR-2015-0199-0143.

CPP before the end of their economic or book life.[8] In other words, their EGU retirement will result in a stranded asset that customers would continue to pay for despite the fact that it no longer operates. The number of years between when a unit retires and the end of its economic or book life will be different for each unit, but typically it would be more than the number of years a retired EGU would continue to receive allowances under EPA's proposal. Continuing the allowance allocation to retired EGUs can be a way of compensating retired EGU owners and customers for the stranded investment and reduce the financial impact of the stranded asset on consumers. Therefore, Duke Energy recommends that EPA adopt an approach under a mass-based final federal plan and model trading rule where retired units continue to receive their allocation. Adopting such an approach will have no impact on the environmental performance of the program, and is consistent with the Acid Rain Program trading program, which provided permanent allowances to affected units. Continued allocations, therefore, not only incentivize reductions, but also offset the costs of these reductions, thereby accelerating investment in newer, lower emitting generation resources to the benefit of electricity customers.

If EPA does not adopt an approach where affected EGUs that cease operation in 2019 or later continue to receive their allocation, Duke Energy recommends an allowance allocation approach where an affected EGU that ceases operation for 2 consecutive years after 2019 continues to receive an allocation for a variable period of time depending on when it retires. The minimum number of years a unit would continue to receive an allocation would be as EPA has proposed. The maximum period of time would be for the entire or remaining Interim Period.

[8] EPA states that non-operating units are no longer emitting and so do not need allowances for compliance. 80 Fed. Reg. at 65,026. While a true statement, EPA doesn't explain why it would be appropriate to take allowances from retired affected EGUs give them to RE sources that also do not emit CO_2 and therefore do not need allowances for compliance.

With this approach, units that retire the earliest would receive an allocation for the longest period of time, thus providing a greater incentive to retire marginal units, where units that are retired later receive an allocation for a progressively shorter period of time. For example, a unit that did not operate in 2020 or 2021 would receive an allocation for the entire 2022 – 2029 period. A unit that did not operate in 2023 or 2024 would receive an allocation through 2029 because that would be longer than the allocation it would receive under EPA's proposal.[9] Finally, an EGU that did not operate in 2028 or 2029 would receive an allocation for 2030 and 2031 per EPA's proposal.

As discussed in greater detail in Section III.A.4 of these comments, if EPA adopts an approach where allowances are at some point no longer allocated to affected EGUs that cease operation in 2019 or later, the allowances should not be diverted to state RE set-asides. Instead, allowances should be re-allocated to all remaining affected EGUs in a state using the same allocation methodology used to make initial allocations.

3. Affected EGUs That Cease Operation By the End of 2018 Should Receive an Allowance Allocation

EPA has proposed to allocate allowances to all affected EGUs that had generation during the 2010-2012 period that EPA has proposed to use as the basis for determining unit-level allocations.[10] EPA's proposed allowance allocations therefore include allocations to affected EGUs that may have already ceased operation and those that may cease operation by the end of 2018. However, EPA has proposed that affected EGUs that received an allocation but that cease operation by the end of 2018 (do not operate in calendar years 2019 or 2020) would not actually

[9] Under EPA's proposal, such a unit would receive an allocation only through 2027.
[10] Allowance Allocation Proposed Rule Technical Support Document (TSD). EPA-HQ-OAR-2015-0199-0143.

receive its assigned allowance allocation for any compliance period. *Id*. Instead, EPA has proposed that these allowances would be transferred to state RE set-asides. 80 Fed. Red. at 65,026.

Duke Energy does not support EPA's proposed treatment of allowance allocations to affected EGUs that cease operation by the end of 2018. As with units that cease operation in 2019 or later, Duke Energy supports an approach where units that cease operation by the end of 2018 would continue to receive their allowance allocation. EPA has offered no analysis or explanation as to why it would be better to take the allowances from these EGUs and instead allocate them to RE set-asides. Alternatively, if EPA does not adopt an approach where affected EGUs that cease operation by the end of 2018 continue to receive their allocation, consistent with our above alternative recommendation for affected EGUs that cease operation in 2019 or later, Duke Energy recommends that affected EGUs that cease operation by the end of 2018 receive an allocation for the entire Interim Period (2022-2029).

Also, if, EPA adopts an approach where allowances are at some point no longer allocated to affected EGUs that cease operation by the end of 2018, the allowances should not be diverted to state RE set-asides. Instead, they should be re-allocated to all remaining affected EGUs in a state using the same allocation methodology used to make initial allocations.

4. Allowances From Modified, Reconstructed and Retired Affected EGUs Should Not be Reallocated to State RE Set-asides

EPA has proposed that allowance allocations to affected EGUs that are either modified, reconstructed, or do not operate for 2 consecutive calendar years would at some point be reallocated to state RE set-asides. 80 Fed. Reg. at 65,026. Duke Energy does not support this proposal. The Agency makes no attempt to support its proposal that the allowances should be

reallocated to state RE set-asides. EPA states that the proposed approach allows the RE set-asides to grow over time. *Id*. But EPA does not explain why an increasing RE set-aside over time is appropriate or necessary given that RE projects are not affected units and have no compliance obligation, or why doing so would be in the best interest of electricity consumers. EPA also states in the Proposal that non-operating units are no longer emitting and so do not need allowances. *Id*. While it's true that non-operating units are no longer emitting, the RE sources to which EPA proposes transferring the allowances are also non-emitting sources with no compliance obligation, and EPA fails to justify why it is appropriate to take allowances from retired units and give them to non-emitting RE sources.

Transferring allowances from modified, reconstructed and retired affected EGUs to RE sources serves as a wealth transfer from affected EGU owners and their customers to RE sources. For owners of modified, reconstructed and retired affected EGUs that continue to operate, it will make compliance more expensive as it would require the purchase of additional allowances from the market and it would not allow the value of the allowances to be used to invest in additional emission reductions. This would come at a cost which will be borne by electricity customers.

5. Allowances From Modified, Reconstructed and Retired Affected EGUs Should Not be Reallocated to the Output-based Allocation Set-aside

Allocating allowances from modified, reconstructed and retired affected EGUs supposes that existing NGCC units may be underutilized in favor of building and operating new NGCC units. In today's natural gas market (and according to nearly all gas price projections going forward), existing NGCC will operate at full capacity regardless of the OBA set-aside. NGCC dispatches ahead of coal in most regions and therefore more often than not operates as base load. It therefore needs no additional economic incentive. Output-based allocations also increase

compliance costs by lowering the marginal cost of production for certain units, which discourages conservation and substitution to lesser emitting alternative sources of generation. This, generally, increases compliance costs for the system as a whole.[11] Second, the recipients of the OBA set-aside allowances may have no relationship to the unit that retired. This would be an inequitable transfer of allowances, as the benefits of the decision to retire would accrue to a different affected EGU and its owner(s).

B. Duke Energy Supports EPA's Proposal to Allow States to Determine Their Own Approach for Distributing Allowances

Duke Energy supports EPA's proposal to allow any state subject to the federal plan to replace the EPA-determined allowance-distribution provisions in a mass-based trading program with state-developed allowance-distribution provisions. 80 Fed. Red. At 65,027. As EPA correctly points out in the Proposal, states are in a much better position than EPA to understand state preferences and priorities, and to tailor allocation approach to meet those preferences and priorities. Duke Energy also supports EPA's intention "to provide the states with substantial flexibility in choosing approaches to distribute their allowances in a state allowance distribution methodology." *Id*. To this end, any final mass-based federal plan and model trading rule should emphasize that states retain discretion to choose their own allocation approaches regardless of the approach set forth in the final federal plan and model rules. Any final federal plan and model trading rule also should recognize that states have more flexibility in allowance allocations than EPA, and make clear that EPA will not second guess how states choose to exercise this flexibility.

[11] The Effect of Allowance Allocations on Cap-and-Trade System Performance, Robert W. Hahn and Robert N. Stavins, NBER Working Paper No. 15854, March 2010, JEL No. H11,L51,Q58

1. Replacing Federal Plan Allowance Allocations with State Determined Allocations

EPA proposed that in order for a state's allowance-distribution methodology provisions to replace federal plan allowance-distribution provisions for a given compliance period, a state would have to submit the state allowance-distribution methodology by a deadline that would provide the agency sufficient time to review and approve it, and to submit the allowance table meeting the specified electronic format by a deadline that would provide sufficient time to record the unit-by-unit allowances in source accounts. *Id*. at 65,028. EPA goes on to request comment on an alternative approach where a state could notify EPA of its intent to submit a state allowance-distribution methodology in advance, in which case the agency would hold off on recording EPA-determined allocations to allow more time for state-determined allowances to be recorded. *Id*. at 65,029. The Agency further asks if this alternative would help smooth the transition from federal plan implementation to state plan implementation, and on the tradeoff between recording allowances in a timely way and providing this increased timing flexibility. *Id*.

There is in fact a tradeoff between providing additional time to allow a state to submit allowance allocations, and recording allowances in unit accounts in a timely manner. On the one hand, Duke Energy supports giving states as much flexibility as reasonably possible to replace federal plan allowance allocations with their own allocations. On the other hand, Duke Energy would want affected unit accounts populated with allowances as soon as reasonably possible. EPA has proposed that states submit an allowance-distribution methodology by March 1st of the year that is two years before the first year of a compliance period, and that they submit a unit-level allowance by March 1st of the following year. EPA would record allowances by June 1st of that year, seven months before the start of a compliance period. *Id*.

Duke Energy believes that providing states with an additional three months to develop and submit an allowance-distribution methodology to replace the EPA allowance-distribution provisions would be appropriate. For example, a state would notify EPA of its intent to submit a state allowance-distribution methodology by the March 1st deadline, and submit the actual methodology three months later, on June 1st. The state would then have until June 1st of the following year to submit a unit-level allowance table, and EPA would record allowances by September 1st, four months before the start of the compliance period. In this instance, a slight delay in the recording of allowances would be acceptable to provide states with the flexibility to replace a federal plan allocation, as long as the affected EGUs know what their allocations will be by September 1 of the year preceding the start of a compliance period.

On a related matter, EPA proposed that a state allowance distribution methodology that would replace the federal plan allocation provisions must address leakage by incorporating allowance set-asides like the RE and output based allocation set-asides, or other allocation approaches designed to counteract leakage. *Id*. at 65,027. EPA goes on to request comment on an alternative option where a state that chooses to submit a state allowance-distribution methodology could provide a demonstration that leakage will not occur due to specific characteristics of the state. *Id*. at 65,028. Duke Energy believes that consistent with the final EGs, any final rule must provide states with the opportunity to make a demonstration that leakage will not occur.

C. Duke Energy Does Not Support an Updating or Heat Input Allowance Allocation Methodology, Auctioning Allowances, Allocating Allowances to Load Serving Entities, or Allocating Allowances to All Sources of Generation

1. EPA Should Not Adopt an Updating Allowance Allocation Methodology

EPA seeks comments on updating allowance allocations, which would adjust allocations over the course of the interim compliance period, providing more allowances to those units that operate the most in preceding step periods. *Id*. at 65,018. Duke Energy does not support an approach that would update allowance allocations based on future activity. To address leakage, EPA is proposing to use a limited output-based set-aside, but generally is seeking comment on using updating allocation approaches more broadly. In general, updating approaches serve to incentivize increases in production, which may not be consistent with the goals of the emission guidelines and have the tendency to increase overall compliance costs.[12] In addition, entities need to know what their allocation will be so they can develop compliance strategies. Introducing an updating allocation approach would introduce an additional uncertainty into the planning process that would make it more challenging to develop efficient and economic compliance strategies.

2. EPA Should Not Adopt a Heat Input Allowance Allocation Methodology

EPA requests comment on allocating allowances based on historical heat input. *Id*. Duke Energy does not support this allocation approach because similar to a MWh generation approach, heat input is not a good surrogate for CO_2 emissions. There is a significant difference between the amount of CO_2 emitted per million Btus of natural gas and coal.[13] A heat input approach

[12] The Effect of Allowance Allocations on Cap-and-Trade System Performance, Robert W. Hahn and Robert N. Stavins, NBER Working Paper No. 15854, March 2010, JEL No. H11,L51,Q58

[13] A NGCC unit will emit roughly half the CO_2 of a coal unit per million Btus of energy.

would not account for this difference and would allocate a disproportionate share of allowances to NGCC units.

3. EPA Should Not Auction Allowances

Duke Energy supports EPA's proposal to allocate most allowances under a mass-based federal trading plan and model trading rule to existing affected EGUs at no cost, and to allocate allowances for all years in a given compliance period at the same time. 80 Fed. Reg. at 65,018. Duke Energy does not support EPA auctioning any allowances under a mass-based federal plan. Doing so would not result in any environmental benefits relative to allocating the allowances to affected EGUs at no cost, but it would increase the direct cost of complying with the program, possibly by billions of dollars annually depending on the number of allowances auctioned and the price of allowances. EPA notes in the Proposal that RGGI states have auctioned allowances and used auction revenues for a variety of purposes intended to help reduce electricity rate impacts and overall program costs. However, EPA states in the Proposal that it "believes that if it conducted allowance auctions, any revenue from such auctions received by the agency must be deposited in the U.S. Treasury under federal law." *Id*. There would therefore be no opportunity to use any auction proceeds from a mass-based federal plan to benefit consumers. Any decision regarding the potential auctioning of allowances must therefore be left to the states.

4. Decisions Regarding Allocating Allowances to Load Serving Entities Should Be Left to the Individual States

EPA requests comment on allocating a portion of allowances under a mass-based federal plan to load-serving entities (LSEs) rather than to affected EGUs. *Id*. One reason often cited for allocating a portion of allowances to LSEs is to help mitigate rate impacts on electricity consumers (assuming the LSEs pass through to customers the value from the sale of the

allowances they receive). Another reason often cited for allocating a portion of allowances to LSEs is to avoid the potential for windfall profits for affected EGUs operating in fully deregulated electricity markets. Concerns about large impacts on electric bills if a portion of allowances are not allocated to LSEs, and concerns about potential windfall profits if all the allowances are allocated to affected EGUs are generally limited to states where the electric system has been fully deregulated, where the generation has been completely separated from the LSE. There should be no concern about windfall profits or large impacts on electric bills in states where the electricity system remains regulated if a portion of the allowances are not allocated to LSEs, because the generator and the LSE in regulated jurisdictions are the same entity and therefore the customers would benefit from an allocation to the affected EGUs.

Duke Energy does not support EPA allocating any allowances to LSEs under a mass-based federal plan or model trading rule. While Duke Energy recognizes the economic benefits to electricity customers in fully deregulated states from allocating a portion of allowances to LSEs, the company also believes that any decision about allocating allowances to LSEs should be left to the individual states to make as they, not EPA, are in a position to determine what is in the best interest of all stakeholders in their state. Given the variety of regulatory structures that exist across the country, it would not be possible for EPA to come up with a single allocation approach that included an allocation to LSEs that worked for all states nor should EPA attempt to create allocation approaches which vary depending on the state. Therefore, as it has proposed, EPA should allocate all allowances, except for those that would be part of any set-asides EPA may include in a final mass-based federal plan and model trading rule, only to affected EGUs.

5. EPA Should Not Allocate Allowances to All Sources of Generation

EPA requests comment on allocating allowances to all generation in a state (including non-emitting generation) using a historical generation-based approach. *Id.* It would be inappropriate for EPA to allocate any allowances under a mass-based federal plan or model trading rule to generation sources that have no compliance obligation. Doing so would deliver no environmental benefits because it would not reduce the total number of allowances in the trading program. It would, however, result in a wealth transfer from affected EGUs and their electricity customers to non-affected generators, and make the program more costly for affected EGUs and consumers as affected EGUs would have to purchase additional allowances in response to the smaller allocation they would receive. Allocating allowances to entities without a compliance obligation would not improve the functioning of the trading program, and in fact could have an adverse impact if too many allowances are in the hands of sources with no compliance obligation. In the Proposal EPA states that "because these allowances are finite in number and thus a limited resource, they have value, and as a result, initial allowance allocations may raise issues of equity among recipients." *Id.* at 65,015. Duke Energy agrees, and allocating allowances to sources with no compliance obligation would certainly raise equity issues.

D. EPA Incorrectly Translated Allowance Allocations from the Generator-Level to the Boiler Level

EPA's methodology for translating allowances from the generator level to the boiler level at several sites where steam generating units (SGUs) and natural gas combined cycle (NGCC) or integrated gasification combined cycle (IGCC) units are co-located is irrational and must be remedied in any final rule that relies on MWh generation as the basis for allocating allowances. Duke Energy owns and operates units at several sites where SGUs are or were in operation at the same site as IGCC or NGCC units where EPA improperly translated allowances from the

generator level to the boiler level. They include Duke Energy's Dan River and LV Sutton sites in North Carolina and the Edwardsport and Wabash River sites in Indiana.

If EPA finalizes a rule where the allowance allocations are based on historical MWh generation as it has proposed, it must get the translation of allowances from the generator level to the boiler level correct.[14] There are several reasons for this. First, there are many sites across the country where there are multiple unit owners, and ownership can differ among the individual units at a site. An incorrect translation of allowances from the generator-level to the boiler-level at such a site will advantage some owners at the expense of other owners. Also, EPA has proposed that allowance allocations to retired affected EGUs be transferred to the renewable energy (RE) set-aside.[15] As detailed in the following sections, there are instances where EPA has proposed to allocate allowances to coal-fired SGUs at a site, many of which have already been retired, that should be allocated to new NGCC or IGCC units at the same site if EPA had performed the generator-to-boiler translation properly. If EPA were to finalize its proposed treatment of allowances to retired coal-fired SGUs, the effect would be to transfer a large number of allowances that should be allocated to NGCC and IGCC units to the RE set-aside simply because EPA performed the generator-to boiler translation incorrectly.

1. Duke Energy's Dan River Site in North Carolina

The Dan River site includes three retired coal-fired SGUs and a new NGCC unit consisting of two combustion turbines, two heat recovery steam generators (HRSG) and one steam turbine. The NGCC unit was correctly identified as an under construction unit in EPA's

[14] As indicated in Section III.A.1 of these comments, Duke Energy recommends that EPA adopt an allocation approach based on historical CO_2 emissions instead of historical MWh of generation.

[15] As discussed in Sections III.A.2 and III.A.3 of these comments, Duke Energy opposes the proposal to end allocations to retired units.

analysis. EPA correctly calculated allowance allocations for each coal unit and the NGCC CTs and steam turbine for each allocation period based on the Agency's proposal to use 2010-2012 MWh generation data as the basis for the allocation. Table 1 is excerpted data for the Dan River facility (ORIS 2723) taken from the Underlying Generator-Level Data tab in EPA's tsd-fp-allowance-allocation-appa.xlsx file. It shows the allowance allocations EPA calculated for each allocation period at the generator level for Dan River.

Table 1

Plant Name	Generator ID	2012 Category	Generator-level First Period Allocations (short tons)	Generator-level Second Period Allocations (short tons)	Generator-level Third Period Allocations (short tons)	Generator-level Final Allocations (short tons)
Dan River	1	COALST	46,158	42,473	40,177	38,915
Dan River	2	COALST	47,694	43,887	41,515	40,211
Dan River	3	COALST	169,524	155,990	147,559	142,924
Dan River	CT8	UC NGCC - commenced in 2012	495,507	455,950	431,305	417,757
Dan River	CT9	UC NGCC - commenced in 2012	495,507	455,950	431,305	417,757
Dan River	ST7	UC NGCC - commenced in 2012	870,891	801,367	758,052	734,239

While the allocations depicted in Table 1 were properly calculated based on EPA's proposed methodology, EPA subsequently erred when translating the Dan River generator-level allocations to boiler-level allocations. EPA took the total allocation for the Dan River site (coal-fired SGUs plus NGCC) and for each allocation period distributed them equally to the NGCC unit and the three coal-fired SGUs. Table 2 shows data for the Dan River facility excerpted from the Proposed FP Allocation tab in EPA's tsd-fp-allowance-allocation-appa.xlsx file showing the EPA distribution, which is EPA's proposed allocation for the Dan River site.

Table 2

Plant Name	Boiler ID	Unit's First Period Allocations (short tons)	Unit's Second Period Allocations (short tons)	Unit's Third Period Allocations (short tons)	Unit's Final Allocations (short tons)
Dan River	1	425,056	391,124	369,983	358,360
Dan River	2	425,056	391,124	369,983	358,360
Dan River	3	425,056	391,124	369,983	358,360
Dan River	HRSG1	425,056	391,124	369,983	358,360
Dan River	HRSG2	425,056	391,124	369,983	358,360

There is no logic to distributing allowances that are clearly attributed to the NGCC unit to the coal-fired SGUs at the site. The three coal-fired SGUs are completely separate from the NGCC unit. Each coal-fired SGU should be allocated the allowances associated with its 2010-2012 MWh generation as shown in Table 1, and the allowances attributed to the NGCC unit in Table 1 should be distributed equally to the two HRSGs that are part of the NGCC unit. Table 3 shows how the allowances for the Dan River units should have been distributed. The total number of allowances for the site in Table 3 is the same as in Table 1, just distributed properly.

Table 3

Plant Name	Boiler ID	Unit's First Period Allocations (short tons)	Unit's Second Period Allocations (short tons)	Unit's Third Period Allocations (short tons)	Unit's Final Allocations (short tons)
Dan River	1	46,158	42,473	40,177	38,915
Dan River	2	47,694	43,887	41,515	40,211
Dan River	3	169,524	155,990	147,559	142,924
Dan River	HRSG1	930,953	856,634	810,331	784,876
Dan River	HRSG2	930,953	856,634	810,331	784,876

It is unclear why EPA performed the translation as it did. In the case of the three coal-fired SGUs, there is a one-to-one boiler-to-generator relationship. Per EPA's Allowance Allocation Proposed Rule Technical Support Document (TSD), "if there was a one-to-one

boiler-to-generator relationship, the allocation was matched directly with the boiler." EPA, however, did not do this. Because there is a one-to-one boiler-to-generator relationship for the three coal units, EPA should have distributed the allowances calculated at the generator level for the three coal-fired SGUs directly to the corresponding coal-fired SGU boilers. Per the methodology in its Allowance Allocation Proposed Rule Technical Support Document, EPA should have distributed the generator-level allowances associated with the NGCC unit equally only to the NGCC unit at the boiler level, as shown in Table 3.

2. Duke Energy's LV Sutton Site in North Carolina

The LV Sutton site includes three retired coal-fired SGUs and a new NGCC unit consisting of two combustion turbines, two heat recovery steam generators (HRSG) and one steam turbine. The NGCC unit was correctly identified as an under construction unit in EPA's analysis. EPA correctly calculated allowance allocations for each coal unit and the NGCC CTs and steam turbine for each allocation period based on the Agency's proposal to use 2010-2012 MWh generation data as the basis for the allocation. Table 4 is excerpted data for the LV Sutton facility (ORIS 2723) taken from the Underlying Generator-Level Data tab in EPA's tsd-fp-allowance-allocation-appa.xlsx file. It shows the allowance allocations EPA calculated for each allocation period at the generator level for LV Sutton.

Table 4

Plant Name	Generator ID	2012 Category	Generator-level First Period Allocations (short tons)	Generator-level Second Period Allocations (short tons)	Generator-level Third Period Allocations (short tons)	Generator-level Final Allocations (short tons)
L V Sutton	1	COALST	166,124	152,863	144,600	140,058
L V Sutton	2	COALST	170,426	156,821	148,345	143,685
L V Sutton	3	COALST	813,161	748,246	707,802	685,568
L V Sutton	CA1	UC NGCC	789,808	726,757	687,474	665,879
L V Sutton	CT1	UC NGCC	543,556	500,164	473,129	458,266
L V Sutton	CT2	UC NGCC	543,556	500,164	473,129	458,266

While the allocations depicted in Table 4 were properly calculated based on EPA's proposed methodology, EPA subsequently erred translating the LV Sutton generator-level allocations to boiler-level allocations. EPA took the total allocation for the LV Sutton site (coal-fired SGUs plus NGCC) and for each allocation period distributed them equally to the NGCC unit and the three coal-fired SGUs. Table 5 shows data for the LV Sutton facility excerpted from the Proposed FP Allocation tab in EPA's tsd-fp-allowance-allocation-appa.xlsx file showing the EPA distribution, which is EPA's proposed allocation for LV Sutton.

Table 5

Plant Name	Boiler ID	Unit's First Period Allocations (short tons)	Unit's Second Period Allocations (short tons)	Unit's Third Period Allocations (short tons)	Unit's Final Allocations (short tons)
L V Sutton	1	756,658	696,254	658,619	637,930
L V Sutton	2	756,658	696,254	658,619	637,930
L V Sutton	3	756,658	696,254	658,619	637,930
L V Sutton	HRSG1	756,658	696,254	658,619	637,930

There is no logic to distributing allowances that are clearly attributed to the NGCC unit to the coal-fired SGUs at the site. The three coal-fired SGUs are completely separate from the NGCC unit. Each coal-fired SGU should have been allocated the allowances associated with its 2010-2012 MWh generation as shown in Table 4, and the allowances attributed to the NGCC unit in Table 4 should have been distributed to the HRSG that is part of the NGCC unit. Table 6 shows how the allowances for the LV Sutton units should have been distributed. The total number of allowances for the site in Table 6 is the same as in Table 4, just distributed properly.

Table 6

Plant Name	Boiler ID	Unit's First Period Allocations (short tons)	Unit's Second Period Allocations (short tons)	Unit's Third Period Allocations (short tons)	Unit's Final Allocations (short tons)
L V Sutton	1	166,124	152,863	144,600	140,058
L V Sutton	2	170,426	156,821	148,345	143,685
L V Sutton	3	813,161	748,246	707,802	685,568
L V Sutton	HRSG1	1,876,921	1,727,085	1,633,732	1,582,412

It is unclear why EPA distributed allowances for the LV Sutton station as it did given the facts that there is a one-to-one boiler-to-generator relationship for the three coal units. Based on EPA's Allowance Allocation Proposed Rule Technical Support Document (TSD), "if there was a one-to-one boiler-to-generator relationship, the allocation was matched directly with the boiler." EPA, however, did not do this. Because there is a one-to-one boiler-to-generator relationship for the three coal units, EPA should have distributed the allowances calculated for each coal-fired SGU at the generator level directly to the corresponding coal-fired SGU boiler. Per the methodology in its Allowance Allocation Proposed Rule Technical Support Document, the allowances calculated at the generator level for the NGCC unit should have been distributed entirely to the NGCC unit at the boiler level, as shown in Table 6.

3. Duke Energy's Edwardsport Site in Indiana

The Edwardsport site includes three retired coal-fired SGUs and an IGCC unit consisting of two combustion turbines, two HRSG and one steam turbine. The IGCC unit was correctly identified as an under construction unit in EPA's analysis. EPA correctly calculated allowance allocations for the IGCC unit for each allocation period based on the Agency's proposed allocation methodology. Table 7 is excerpted data for the Edwardsport facility (ORIS 1004) taken from the Underlying Generator-Level Data tab in EPA's tsd-fp-allowance-allocation-appa.xlsx file. [16]

Table 7

Plant Name	Generator ID	2012 Category	Generator-level First Period Allocations (short tons)	Generator-level Second Period Allocations (short tons)	Generator-level Third Period Allocations (short tons)	Generator-level Final Allocations (short tons)
Edwardsport	CT1	UC Coal - commenced in 2012	2,106,002	2,022,259	1,904,682	1,836,378
Edwardsport	CT2	UC Coal - commenced in 2012	0	0	0	0
Edwardsport	ST	UC Coal - commenced in 2012	0	0	0	0

What EPA did next to translate the Edwardsport IGCC generator-level allocations to boiler-level allocations is where EPA once again erred. EPA took the total allocation it calculated at the generator level for the Edwardsport IGCC unit and for each allocation period translated them equally to the two IGCC HRSGs and the three retired coal-fired SGUs. Table 8

[16] For some unknown reason, EPA assigned the entire 2012 summer net capacity for the IGCC unit to CT1, which resulted in EPA calculating allowances for the IGCC unit at the generator level for only CT1. While this is not technically correct, the fact that the 2012 summer net capacity EPA assigned to CT1 is the capacity for the entire IGCC unit, EPA's approach does result in the correct number of allowances being calculated for the IGCC unit as a whole.

is excerpted data for the Edwardsport site taken from the Proposed FP Allocation tab in EPA's tsd-fp-allowance-allocation-appa.xlsx file showing EPA's proposed boiler-level allocations for the Edwardsport site.

Table 8

Plant Name	Boiler ID	Unit's First Period Allocations (short tons)	Unit's Second Period Allocations (short tons)	Unit's Third Period Allocations (short tons)	Unit's Final Allocations (short tons)
Edwardsport	6-1	351,000	337,043	317,447	306,063
Edwardsport	7-1	351,000	337,043	317,447	306,063
Edwardsport	7-2	351,000	337,043	317,447	306,063
Edwardsport	8-1	351,000	337,043	317,447	306,063
Edwardsport	HRSG1	351,000	337,043	317,447	306,063
Edwardsport	HRSG2	351,000	337,043	317,447	306,063

Once again, there is no logic to EPA's proposed allocation for the Edwardsport site. EPA has proposed to allocate allowances to the retired coal-fired EGUs at the site that are clearly attributed to the IGCC unit at the site. The three coal-fired SGUs are completely separate from the IGCC unit and should not be allocated any of the IGCC allowances. Table 9 shows how the allowances for the Edwardsport IGCC units at the generator level should be distributed to the IGCC unit at the boiler level. The total number of allowances for the IGCC in Table 9 is the same as in Table 7, just distributed properly.

Table 9

Plant Name	Boiler ID	Unit's First Period Allocations (short tons)	Unit's Second Period Allocations (short tons)	Unit's Third Period Allocations (short tons)	Unit's Final Allocations (short tons)
Edwardsport	HRSG1	1,053,001	1,011,129	952,341	918,189
Edwardsport	HRSG2	1,053,001	1,011,129	952,341	918,189

It is unclear why EPA distributed allowances clearly attributed to the IGCC unit to the coal units at the site. There is nothing in the allocation methodology laid out in EPA's Allowance Allocation Proposed Rule Technical Support Document (TSD) that should have resulted in this outcome.

4. Duke Energy's Wabash River Site in Indiana

The Wabash River site consists of five coal-fired SGUs and a completely separate IGCC unit. Duke Energy owns the five coal-fired SGUs but not the IGCC. In the case of the Wabash River site, EPA correctly calculated allowances at the generator level based on its proposal that relies on 2010-2012 MWh generation. But when the Agency translated the generator-level allocation to the boiler level, it distributed the total number of allowances calculated for the site (the five coal-fired SGUs and the IGCC unit) equally amongst only the five coal-fired SGUs. It translated no allowances to the IGCC unit. In fact, the IGCC unit doesn't even appear in the Proposed FP Allocations tab of EPA's tsd-fp-allowance-allocation-appa.xlsx file. This error must be remedied in the final rule.

The IGCC unit should receive the total number of allowances that were calculated based on its 2010-2012 MWh generation at the generator level, and the five coal-fired SGUs should each receive the number of allowances associated with their 2010-2012 MWh generation calculated at the boiler level. There is a one-to-one boiler-to-generator relationship for the five coal-fired SGUs, so there should be no issues with translating their generator level allocation to a boiler-level allocation.

E. If EPA Included the Alternative Compliance Pathway in a Final Federal Plan and Model Trading Rule, it Should Be Available to EGUs of Any Size

EPA requests comment on a voluntary alternative compliance pathway that could be available to units under a mass-based approach. EPA is also taking comment on whether this option should be limited to smaller units (less than 100 MW nameplate capacity). The proposed approach is described in the Alternative Compliance Option TSD (August 2015)[17] that accompanies the Proposal. The alternative compliance pathway would be available to affected EGUs that commit to retire by December 31, 2029. An EGU that might choose the alternative compliance pathway would not receive an allowance allocation but would instead comply with a unit-specific emission limitation. The number of allowances that would otherwise be allocated to such a unit would instead be subtracted from a state's mass goal where such a unit is located, for each compliance period in the Interim Period.

Duke Energy agrees with the Agency about the alternative compliance pathway resulting in allowances being removed from the trading system during the Interim Period potentially adversely affecting market liquidity and allowance prices. The degree to which the alternative compliance pathway might impact the trading market would be entirely dependent on the number and size of EGUs opting for the approach. Because there is no way of knowing how many units might opt for such an approach, it is impossible to even speculate about the potential adverse impact on the trading market. This means that unknown potential adverse market impacts must be weighed against the benefits that such an approach would provide to an unknown number of affected EGUs.

[17] Alternative Compliance Option Technical Support Document (TSD). Docket No. EPA-HQ-OAR-2015-0199-0040.

EPA requests comment on whether the alternative compliance pathway should be available for all affected EGUs, or limited to steam units with less than 100 MW nameplate capacity. *Id*. While recognizing the potential adverse implications for the trading market and allowance prices, Duke Energy believes that if the alternative compliance pathway is included in a final federal plan and model trading rule, it should be available to steam generating units of any size.

EPA asks for comment on an alternative where an affected EGU that chooses the alternative compliance pathway would be allowed to purchase allowances and surrender them to EPA for compliance, thus allowing the unit to emit an amount of CO_2 greater than its alternative compliance pathway emission limit. *Id*. Duke Energy does not support this option. An affected EGU that chooses the alternative pathway should not also have access to the trading market.

Regarding the allowances that would otherwise have been allocated to a unit that chooses the alternative compliance pathway, the Alternative Compliance Option TSD makes it clear that a state's mass goal would be adjust downward for each compliance period in the Interim Period by the number of allowances that would have otherwise been allocated to such a unit. The TSD, however, does not address what happens to state budgets in the final compliance period. Duke Energy presumes that beginning with the 2030-2031 compliance period, the mass budgets of states where alternative compliance pathway units are located would revert back to their full final compliance period levels. In other words, the state budgets for the post-2029 period would not be lowered by the number of allowances associated with units in the alternative compliance pathway. EPA should clarify in a final rule that this would be the case.

What the TSD also does not address is the disposition of the allowances that would otherwise have been allocated to alternative compliance pathway units beginning with the 2030-2031 compliance period. Duke Energy presumes that consistent with EPA's proposal to transfer allowances from retired units to a state's RE set-aside, that this is what EPA plans to do with allowances from alternative compliance pathway units post-2029. If this is in fact EPA's plan, then consistent with the company's previous comments regarding the disposition of allowances from retired EGUs, Duke Energy opposes such a treatment of allowances. As stated previously, there is no legitimate reason to provide additional allowances to non-emitting renewable sources that have no compliance obligation. Instead, beginning with the 2030-2031 compliance period, all allowances that would have otherwise been allocated to units that chose the alternative compliance pathway should be reallocated to the remaining affected EGUs in a state using the same allocation approach as used to make the initial allocations. Transferring these allowances to state RE set-asides would increase compliance costs for affected EGUs and increase the price of electricity to consumers, while delivering no added environmental benefit. Allocating the allowances in question to affected EGUs will not increase the number of allowances and therefore will not result in any increase in total emissions under the program.

F. Miscellaneous Issues Related to the Proposed Mass-Based Federal Plan and Model Trading Rule

1. EPA's Proposal to Record Allowances 7 Months Prior to the Start of Each Compliance Period is Appropriate

The Agency proposes to record allowances for the mass-based trading program in accounts of affected EGUs 7 months prior to the start of each compliance period, and requests comment on the proposed approach and on an alternative of recording allowances 13 months prior to the start of each compliance period. 80 Fed. Reg. at 65,019. Duke Energy believes that

recording allowances 7 months prior to the start of each compliance period strikes the right balance. If it were 13 months, states would have less time in the event they are subject to a federal plan to either replace the federal plan allocations with their own allocations or replace the entire federal plan with an approved state plan. While affected EGUs would ideally like the allowances in their accounts as soon as possible, having the allowances in unit accounts 7 months before the start of a compliance period is adequate. Duke Energy would not want the period between recordation and the start or the compliance period to be shorter than 7 months.[18]

2. Compliance True-Up Under a Mass-Based and Rate-Based Program

EPA had proposed to require sources to demonstrate compliance under a mass-based program on May 1 of the year after the last year in the compliance period, and requests comment on an earlier or later deadline. *Id*. at 65,014. With regard to a rate-based program, EPA has proposed to require sources to demonstrate compliance on November 1 of the year after the last year in the compliance period, and requests comment on an earlier deadline, such as June 1 or March 1. *Id*. at 65,009.

Duke Energy considers May 1 for a mass-based program and November 1 for a rate-based program appropriate. With regard to the proposed November 1 date for rate-based programs, Duke Energy believes this date is appropriate given EPA's proposal to issue ERCs within 6 months of the end of the relevant year. *Id*. at 65,000. As EPA states, "this amount of time may be necessary to accommodate the ERC issuance process, including necessary EM&V." *Id*. If ERCs are issued at the end of June, that would provide 4 months until the November 1

[18] The possible exception is under a scenario where a state is replacing a federal plan allocation with a state allocation. Per Section III.B.1 of these comments, under such a scenario, Duke Energy believes that delaying the recording of allowances until September 1 of the year immediately preceding the start of a compliance period would be appropriate to give states additional time to replace a federal plan allocation with a state allocation.

true-up deadline. This is the same amount of time EPA has proposed to provide between the end of a compliance period and the true-up deadline under a mass-based program. A rate-based deadline earlier than November 1 would be neither appropriate nor necessary considering that ERCs may not be issued before the end of June.

3. Requiring the Monitoring and Reporting of CO_2 Mass and Net Generation Beginning January 1, 2021 is not Necessary

EPA requests comment on requiring monitoring and reporting of CO_2 mass and net generation beginning on January 1, 2021. *Id*. at 65,032. Yet the Agency gives no reason for its request or why such a requirement might be necessary. For the majority of affected EGUs it would be a meaningless requirement because they already report CO_2 emissions under 40 CFR part 75 on a quarterly basis. The only reason for possibly including such a requirement is for those few affected units that may not already be reporting CO_2 emissions to EPA to get them familiar with the monitoring and reporting before 2022. Regarding the reporting of net generation data, EPA could provide affected units the option to report net generation, given the fact that net generation is not currently reported to EPA by affected units, but it should not be a reporting requirement before January 1, 2022. Again, EPA gives no indication of the possible use or usefulness of net generation data reported prior to January 1, 2022.

G. Duke Energy Comments on EPA's Proposed Output-Based Allocation and Renewable Energy Set-Aside

In the Proposed Rule, EPA proposes to address leakage under its mass-based trading rules by creating allowance allocation approaches to address leakage, specifically through establishing an output-based allocation set-aside and a set-aside that encourages the installation of RE. *Id*. at 65,019. EPA has proposed a number of details about how the set-asides will operate, including how allowances from these set-asides should be allocated, to what types of

generation allowances should be allocated, the timing of those allocations, and the size of the set-asides for each state. Nowhere in the Proposal, however, does EPA provide an analysis demonstrating why its proposed choices make sense or that they will be effective at preventing what EPA describes as leakage.[19] Given the fact that the concept of leakage and the accompanying output-based allocation and RE set-asides were not included in the EGs proposal, there was no opportunity to comment on them during the EGs rulemaking process.

1. Comments on EPA's Proposed Output-Based Allocation Set-Aside

EPA has proposed a set-aside approach referred to as output-based allocation, which provides targeted allocations of a limited portion of allowances to existing NGCC units as a means of mitigating leakage. 80 Fed. Reg. at 65,020. The Agency is seeking comment on key parameters for the appropriate design of the output-based allocation approach, including which affected EGUs receive the allocation, the timing of the set-aside's allocation procedure, the allocation rate(s), and the size of the set-aside. *Id.*

Regarding the issue of which EGUs should be eligible to receive output-based allocation from the set-aside, EPA has proposed that only NGCC units subject to the final EGs would receive output-based allocation from the set-aside. *Id.* Duke Energy supports this proposal because EPA's concern about leakage deals only with new and existing NGCC units, and it seems most appropriate that the output-based allocation incentives be targeted exclusively at existing NGCC units. As EPA indicates in its Proposal, the output-based allocation "can most effectively address emission leakage if targeted to those affected EGUs subject to a mass goal

[19] The final 111(d) EGs defined leakage as "the potential of an alternative form of implementation of the BSER (e.g., the rate-based and mass-based state goals) to create a larger incentive for affected EGUs to shift generation to new fossil fuel-fired EGUs relative to what would occur when the implementation of the BSER took the form of standards of performance incorporating the subcategory-specific emission performance rates representing the BSER.

that face the greatest difference in their incentive to generate relative to otherwise similar EGUs that are not subject to a mass goal." *Id.*

EPA requests comment on extending output-based allocation from the output-based set-aside to affected SGUs, or to zero-emitting generators (including renewable and nuclear generation). *Id.* Duke Energy does not support either approach. Neither approach is consistent with EPA's expressed concern that new NGCC units would displace generation from existing NGCC units and cause leakage. In addition, if steam generating units (SGUs) and/or zero-emitting generators were to receive allowances from the output-based set-aside, EPA might be inclined to increase the size of the set-aside. Duke Energy is opposed to any increase in the size of the OBA set-aside. In addition, EPA does not explain how allocating a portion of the OBA set-aside to SGUs and/or zero-emitting generators might address the Agency's leakage concern.

EPA solicits comment on its proposal of a lagged accounting procedure for the output-based set-aside, where eligible generation from existing NGCC units that occurs during a given compliance period would receive allowances through the set-aside that is taken from vintage years in the subsequent compliance period. *Id.* at 65,021. Consistent with this proposed approach, EPA is not proposing to reserve any allowances of vintage years during the first compliance period (2022–2024) for allocation through this set-aside; eligible generation that occurs during the first compliance period would receive an allocation from the set-aside taken from the second compliance period (2025–2027).

Duke Energy supports EPA's proposed lagged allocation approach for the output-based set-aside that would start the output-based set-aside with the second compliance period. As EPA

points out, to do otherwise would introduce uncertainty regarding the number of allowances affected EGUs would receive during a given compliance period.

EPA requests comment on options for the number of allowances that the affected EGU receives per one net MWh of generation eligible for the output-based set-aside. EPA has proposed to set the allocation rate equal to the rate-based emission standard (on a net basis) for new NGCC units under 111(b), which is 1,030 lbs/MWh-net. EPA requests comments on an allocation rate equal to the expected net emissions rate of newly constructed NGCC units, the historical average emissions rate from NGCC units, or the NGCC or fossil steam source category-specific emissions performance rates promulgated in the Clean Power Plan EGs. *Id.*

Of the above options, the ones that Duke Energy would eliminate first would be the NGCC and fossil steam source category-specific emissions performance rates promulgated in the Clean Power Plan EGs. Of the remaining options, the 1,030 lbs/MWh-net EPA has proposed to use might be the best choice because it is a known value. Historical average emission rates and the expected net emissions rate of newly constructed NGCC units are values that would have to be calculated or estimated, and there would likely be disagreement as to what the values should be.

EPA proposes to calculate an NGCC unit's capacity factor based on the previous compliance period's net generation and the net summer capacity of the unit. *Id.* Duke Energy supports this proposal. Duke Energy does not see the need to use ''maximum load value'' as a proxy for net summer capacity given the fact that net summer capacity is readily available. Duke Energy also does not support basing the capacity-factor calculation on nameplate capacity instead of net summer capacity.

Duke Energy supports EPA's proposed approach for determining the size of the output-based set-aside. Specifically, Duke Energy supports determining the size of the set-aside one time only, before the start of the program. The 10 percent capacity factor (60 percent minus 50 percent) target EPA has proposed to use for determining the size of the set-aside strikes a reasonable balance between incentivizing existing NGCC to increase utilization while not providing too great of an incentive, which as EPA notes, could incentivize too much generation from eligible sources. EPA's proposal to determine the size of the output-based set-aside using 2012 baseline net summer capacity data from the Clean Power Plan EGs is reasonable.

Duke Energy supports EPA's proposals that if the amount of total generation eligible for the set-aside multiplied by the allocation rate exceeds the size of this set-aside, then the allowances in the set-aside would be allocated to eligible generation on a pro-rata basis, and if the number of allowances allocated from the set aside is less than the size of this set aside, then the remaining allowances would be distributed to all affected EGUs using the historical-generation based approach described above. *Id*. at 65,022.

2. Comments on EPA's Proposed Renewable Energy Set-Aside

EPA has proposed to provide a set-aside of allowances for distribution to RE projects in each state covered by the proposed mass-based federal plan and proposed the same set-aside for the mass-based model rule. Specifically, EPA has proposed that 5 percent of allowances be reserved from the allocation for each state for the purpose of the RE set-aside, and requests comment on options for a percentage of allowances to be reserved ranging from 1 to 10 percent of total allowances in each state. *Id*. at 65,022.

Any set-aside that takes allowances away from affected EGUs will increase the overall cost of compliance and the cost of electricity because it will require the affected EGUs to purchase allowances that are not allocated.

If EPA includes the RE set-aside in the final federal mass-based plan and model trading rule, this set-aside should be no larger than EPA can demonstrate is needed to address the theoretical problem of leakage to ensure the greatest number of allowances are allocated to affected units. The methodology EPA used to arrive at its proposed 5 percent RE set-aside is described in the Agency's Renewable Energy (RE) Set-aside Technical Support Document (TSD). The actual calculations are provided in Appendix 1 (tsd-fp-re-setaside-ai.xlsm). EPA arrived at its proposed 5 percent RE set-aside based on the need to incentivize 330,755,049 MWh of RE generation in 2030. EPA's methodology, however, significantly overstates the amount of RE generation that must be incentivized to replace generation from new NGCC units in 2030 that would be deemed leakage. Based on EPA's modeling, it estimated that 259,150,655 MWh of RE generation would occur in 2030 under mass-based compliance with no RE set-aside. EPA also estimated that there would be 71,604,394 MWh of generation from new NGCC units in 2030 under mass-based compliance with no set-aside that would be associated with leakage. EPA should not have added these two figures together because based on EPA's modeling, 259,150,655 MWh of RE generation would occur in 2030 with no incentive. Therefore, The amount of RE generation EPA should have targeted in its calculation to incentivize is the amount equal to its estimated amount of new NGCC generation in 2030 associated with leakage, or 71,604,394 MWh. By targeting only this amount of RE generation for incentive, the appropriate size of the RE set-aside would be in the 1 percent range. Under EPA's methodology, the size of the RE set-aside is greatly influenced by RE generation that already has been constructed and

that would be constructed absent any CPP rule. At a minimum, what EPA should do is determine only that amount of RE generation that would occur in response to the CPP by modeling a no CPP scenario and using the difference in estimated RE generation between that scenario and 259,150,655 MWh to calculate the size of the RE set-aside. EPA states in the Proposal that it arrived at the proposed 5 percent Re set-aside "based upon determining an appropriate volume of set-aside resources that, at a range of possible allowance prices, are projected to incent the development of *additional* RE projects. (*emphasis added*). Yet the methodology EPA used to arrive at the 5 percent RE set-aside incents more than just additional RE projects. It's not at all clear how allocating allowances to existing RE units will in any way address the leakage issue.

Regardless of the size of any RE set-aside that may be incorporated into a final federal plan and model trading rule, Duke Energy supports EPA's proposal that any remaining allowances in the set-aside, such as set-aside allowances designated for projects that no longer exist, would be redistributed to affected EGUs in the state in a pro rata fashion on the same distribution basis as their initial allocations were made. *Id*. at 65,024.

IV. Comments on the Proposed Federal Plan and Model Trading Rule Rate-based Implementation Approach

A. The Eligible Measures Available to Generate ERCs under a Rate-Based Federal Plan Should be the Same As The Eligible Measures Under a Rate-Based Model Rule

EPA has proposed to limit the issuance of ERCs under a federal plan to 1) affected units with emissions rates below the applicable standards; 2) affected NGCC units that achieve certain capacity factors; 3) new nuclear units and capacity uprates at existing nuclear units; and 4) eligible, verified utility-scale RE resources that include wind, solar, geothermal, and hydropower. *Id*. at 64,990. EPA has proposed, however, that states filing compliance plans have

the ability to issue ERCs to certain non-BSER compliance measures, including end-use efficiency, biomass, distributed generation, combined heat and power and waste heat and power. EPA states that these measures legally need not be included as compliance options because they were not included in BSER and raise concerns about EPA's ability to administer the evaluation, monitoring and verification (EM&V) required to issue ERCs to these projects. EPA requests comment on whether the federal plan ERC options should be limited as proposed or expanded to include other zero-emitting reduction measures. *Id*.

Duke Energy supports the issuance of ERCs under a rate-based federal plan to the same universe of measures that are eligible to earn ERCs under the final EGs and final rate-based model rule. Given the volume of ERCs that would be required in order for affected EGUs to comply with the subcategorized emission rate standards, limiting the availability of ERCs could have a significant impact on compliance costs. While trading may be able to help address compliance cost concerns to some extent, trading will not serve this purpose if there is an insufficient supply of ERCs in the market.[20] Regarding the Agency's stated concerns about its ability to administer the evaluation, monitoring and verification (EM&V) required to issue ERCs to these projects, the number of states that might be subjected to a rate-based federal plan will probably be very small. If this turns out to be the case, the added administrative burden resulting from broadening the universe of source types eligible to generate ERCs would not seem to be overwhelming. EPA's general concerns about EM&V or streamlined processes should not

[20] It could be the case that a very limited number of states will become subject to a rate-based federal plan, and not knowing how many states might pursue a rate-based plan on their own, it's uncertain how robust an ERC trading program might be. Therefore, limiting the types of sources eligible to generate ERCs under a federal plan could have significant adverse implications for affected sources that might be subject to a rate-based federal plan.

trump the importance of creating a sufficient supply of ERCs. This is particularly true given that EPA has already provided a mechanism to ensure that only valid ERCs are used for compliance.

With regard to end-use efficiency measures, it would be perverse for EPA to bar its ability to generate ERCs, given that EPA has stated that efficiency is likely to be a cost-effective option to significantly reduce emissions that also can serve to reduce customer's electric bills. Excluding end-use efficiency measures as potential ERC-generators would likely increase compliance costs for affected EGUs and electricity customers.

EPA's argument that any measures not explicitly included in EPA's consideration of BSER need not be eligible to generate ERCs in a federal plan is not persuasive. The fact that EPA allows states to issue ERCs to measures not explicitly included in its BSER determination, but would exclude them from a federal plan makes no sense, and would be inconsistent with EPA statements in the final EGs. In the final guidelines, EPA states that

> [t]his final rule does not limit the measures that affected EGUs may use for achieving standards of performance to measures that are included in BSER; thus, the existence of these non-BSER measures provides flexibility allowing individual affected EGUs and the source category to achieve emission reductions consistent with application of the BSER at the levels of stringency reflected in this final rule even if one or more of the building blocks is not implemented to the degree that EPA has determined to be reasonable… 80 Fed. Reg. at 64,755.

Other than an unsubstantiated concern about administrative complexity, EPA has not provided any persuasive reasons for excluding any measures from those potentially eligible to generate ERCs from a federal rate-based plan. Accordingly, a federal rate-based plan should allow all projects identified in the final emission guidelines as eligible to generate ERCs for compliance.

B. Affected EGUs Cannot be Held Responsible for Ensuring the Ultimate Validity of ERCs Issued by States or By EPA

EPA plans to make affected EGUs responsible for the validity of ERCs they use for compliance under both a rate-based federal plan and a model rule, and requests comment on ways that EPA could safeguard the validity of an ERC. *Id*. at 64,991. Affected EGUs are in no position to ensure the validity of ERCs given that they will have no role in the evaluation, review, approval, and issuance of ERCs. It would therefore be impossible for an affected EGU to ascertain the validity of ERCs. The purpose of a rigorous EM&V process is to ensure the quality of issued ERCs so their validity isn't in question. Therefore, the presumption should be that all issued ERCs are valid, and there should be no jeopardy associated with their use. EPA has provided no reason to place this burden on affected EGUs.

If after issuance of ERCs, an issue arises and as a result of the administrative appeals process (either under a federal rate-based plan or a similar process adopted by a state as part of a state rate-based plan) that results in some number of previously issued ERCs being invalidated for whatever reason, a possible remedy could be to subtract the number of invalidated ERCs from the number of ERCs that would otherwise be issued in the future to the specific measure or measures to which the invalidated ERCs were initially issued. Doing so would not place an inappropriate responsibility on affected EGUs. It would also maintain the environmental integrity of the program because the total number of ERCs issued over time will be properly adjusted so there are not "excess" ERCs issued.

C. Issues Related to EPA's Proposed Methodology for Calculating GS-ERCs

1. EPA Should Calculate IGFs at a National Level, as Proposed, or Calculate IGFs on a Unit-specific Basis – Whichever is Higher

EPA has proposed that "the IGF used for each compliance period be based on which region, on average, produces GS-ERCs at the highest rate (i.e., GS-ERCs generated per MWh)." Gas Shift Emission Rate Credit (GS-ERC) Technical Support Document (TSD) at 2. ("GS-ERC TSD"). EPA also proposed to calculate the IGF "by taking the number of MWh beyond the 2012 baseline needed for the corresponding region to reach the BSER level of NGCC generation capacity and dividing it by the NGCC BSER regional capacity for that compliance period, which produces the factor." GS-ERC TSD at 2. The expression is summarized as:

$$\text{Incremental Generation Factor} = 1 - \frac{\text{Regional 2012 NGCC Baseline}}{\text{NGCC BSER Regional Capacity}}$$

Id. at 3. Under this approach, EPA uses "the least stringent regional factor to calculate GS-ERCs for all affected NGCC units subject to the federal plan and model rule on a national level." 80 Fed. Reg. at 64,993. Duke Energy supports EPA's use of the least-stringent factor on a national basis in the calculation of GS-ERC generation. However, Duke Energy also believes that individual affected EGUs should be able to make a showing to EPA that a unit-specific IGF is appropriate if the national IGF fails to capture the unit-specific incremental NGCC generation that could be achieved at that unit. In other words, if the IGF for a particular unit, calculated on an individual basis using that unit's baseline and its corresponding projected or actual capacity, would be higher than the nationally applicable IGF, then the unit should be able to submit data that supports its calculations and be assigned the higher unit-specific IGF for use in calculating the individual unit's GS-ERC generation. This would increase flexibility, properly credit

affected EGUs for the actual shift to NGCC, and avoid inequitable treatment of affected EGUs which make substantial shifts to NGCC generation.

2. The IGF Should Be Based on the Least Stringent IGF Across a Single Compliance Period

EPA should base the IGF on the highest factor—rather than the average—of the least stringent region across a *single* compliance period. This approach would provide more flexibility and cost mitigation than EPA's current proposed approach. For example, EPA proposes that the IGF for the 2028-2029 compliance period should be 0.28. GS-ERC TSD Spreadsheet at Cell AG27. During that time period, the Eastern Interconnection has an IGF of 0.26 for both of the years 2028 and 2029. *Id.* at Cells Y26; Y16. The Western Interconnection has an IGF of 0.30 for the year 2028 and 0.26 for the year 2029. *Id.* at Cells Y27; Y17. ERCOT has an IGF of 0.22 for 2028 and 0.17 for 2029. *Id.* at Y28; Y17. EPA proposes to choose the Western Interconnection as the least stringent region, average the Western Interconnection's factors to reach 0.28, and apply that number nationally. Rather than average the two factors of the least stringent region, EPA would select the least stringent of the two. For the 2028-2029 period, applying the above approach would equate to an IGF of 0.30. *See* Cell Y27.

3. For Purposes of Calculating the Quantity of GS-ERS an Individual NGCC Earns, EPA Should Calculate the GS-ERC Emission Factor Based on the Highest Measure of That Factor

EPA has proposed that the GS-ERC Emission Factor used in the calculation of the number of GS-ERCs an existing NGCC unit would earn be calculated on a unit by unit basis. GS-ERC TSD at 2. The agency requests comment on its proposal, or alternatively, on whether the GS-ERC Emission Factor should be calculated based on the least stringent region's baseline 2012 average emission rate. 80 Fed. Reg. at 64,993.

In order to increase flexibility and provide further incentive for affected EGUs to shift to greater NGCC generation, EPA should use *either* the unit-level GS-ERC emission factor *or* the anticipated average GS-ERC emission factor for the given year of generation for that affected unit's interconnection (column X of the spreadsheet), *whichever is higher* to calculate compliance. For example, if an affected EGU were situated in the Eastern Interconnection during the year 2022, and had a unit level GS-ERC Emission Factor of 0.47, EPA should use the Eastern Interconnection's anticipated average GS-ERC Emission Factor of 0.49 in order to calculate compliance. On the other hand, if the same affected EGU had a unit level GS-ERC Emission Factor of 0.51, then EPA should use the higher unit-level GS-ERC Emission Factor to calculate compliance. The higher GS-ERC Emission Factor will facilitate compliance efforts by providing further incentive for greater shifts to NGCC generation.

V. Limited Changes to the Clean Energy Incentive Program Would Make it More Useful in Incentivizing Early Reductions from Renewable Energy and Low-Income End-Use Efficiency

In the final emission guidelines, EPA introduced a proposed Clean Energy Incentive Program (CEIP) designed to incentivize emission reductions from certain RE and low-income EE projects before the start of the mandatory reductions period in 2022. To encourage this early action, EPA proposes to create 300 million federal credits that would be awarded to certain projects that begin operation after the submission of a final state plan (or September 6, 2018, for states which become subject to a federal plan) and generate zero-emissions MWh or reduce end-use energy demand. While participation in the CEIP is optional for states, states that choose to participate must set aside some allowances from their total emissions budget for eligible projects which are then matched by the federal government. In a rate-based plan, states would be

required to assign ERCs to the CEIP. These allowances and ERCs would be awarded to project developers for reductions achieved or generation avoided in 2020 or 2021.

The state credits/allowances would be matched by the federal credits at different ratios. In the case of renewable generation, for every two MWh, the state will issue one early action ERC (or allowance) to the project, and EPA will issue a matching one ERC (or allowance) to the state to give to the project. In the case of EE, for every two MWh, the state will issue two ERCs (or allowances) to the project and EPA will issue a matching two ERCs (or allowances) to the state to give to the project.

The structure of the CEIP is open for comment in the context of the proposed federal plan; EPA is seeking comment regarding how to implement the CEIP, particularly in the context of a federal plan. Limited changes to the implementation of the CEIP in the context of state and federal plans would ensure that the objectives of the incentive program are achieved.

A. Under a Mass-Based Plan, Requiring States to Match the Federal CEIP Allowances Limits State Flexibility in Allocating Allowances and Could Unfairly Increase Direct Costs for Affected Units

Under a mass-based plan, states would implement the CEIP by setting aside a portion of its allowances for eligible projects that generated zero-emissions MWh or MWh savings in 2020-2021. Similarly, EPA would set aside these allowances if implementing a federal mass-based plan for any states. States subject to a federal plan that later choose to submit their own re-allocation of allowances must participate in the CEIP and must set aside allowances for the program.[21] Under a mass-based plan, therefore, there are two types of early action allowances: those EPA requires that the state issue and those that EPA will issue. Participation in the CEIP is

[21] EPA notes that states can choose the size of their CEIP set-aside and need not match the number of allowances EPA proposes to set aside for each state. *See* 80 *Fed. Reg*. at 65,026.

optional, but no federal credits will be awarded unless a state agrees to set-aside a certain portion of its allowances for early action.

The CEIP recognizes the value, both from an emission reduction perspective and from a compliance cost perspective, of early reductions. However, requiring states to set aside allowances for the CEIP limits state flexibility in the allocation of allowances and may serve to needlessly increase the direct cost of the programs for affected units (the number of allowances an affected unit would be granted versus purchase). In recognition of the importance of early reductions and the importance of maintaining state flexibility to allocate allowances to address state-specific concerns and to fairly distribute the value of allowances to electricity customers under supervision of the state PUC, EPA should not require that states set aside allowances for the CEIP in order to participate in the CEIP.

In the context of a federal mass-based plan, EPA would set aside 100 million early action allowances from each of the three years in the first interim step period. This reduces the pool of allowances that each state has to allocate to affected units, or for other purposes, in that first period. This limits state discretion under section 111(d) as recognized by EPA. Further, because these allowances are freely transferable, this forced set aside has the potential to needlessly increase the direct cost of the reductions goals with which the affected units have to comply. Especially in a traditional regulated cost of service state, any RE project developer receiving CEIP allowances could sell them to anyone in the market in any state, very likely increasing the direct costs on electricity customers in the state losing the allowance because of the loss of allocated allowances that could otherwise go to affected EGUs, the value of which would flow

directly to consumers.[22] [23] Under the federal mass-based plan, EPA proposes to allocate the bulk of the allowances to affected units. The CEIP set-aside will serve to reduce the number of allowances initially allocated to these units for compliance. Moreover, because CEIP allowances could be freely transferred out of state—or not sold at all during certain compliance periods if recipients choose to bank allowances or otherwise withhold them from the market—this functionally increases the direct cost[24] of EPA's BSER for affected units in states that implement the CEIP. This would increase direct compliance costs and costs to electricity customers. The CEIP should not be implemented in such a way that increases direct compliance costs. This is inconsistent with the overarching goals of the early action program. States, therefore, should not be required to set aside allowances in order for eligible projects to earn the federal matching credit.

[22] Because EPA proposes to allocate CEIP federal matching allowances such that states with the greater reductions obligations will be eligible for a larger portion of the federal pool of CEIP allowances, *see* 80 *Fed. Reg*. at 65,025, the matching state set-aside has the potential to take a larger number of allowances away from affected EGUs that need them the most.

[23] It is important to note this does not mean that trade of allowances by EGUs outside the state is to the detriment of electricity customers. Such trade by utilities, regulated as they are by State PUCs, must be to the benefit of customers, i.e., result in the least cost supply of electricity.

[24] As distinguished from Opportunity Costs, which drive operating and investment decisions, and are unaffected by allocation decisions. Changes in direct costs do however flow through directly to ratepayers of regulated utilities and it is in their interests that direct costs be mitigated as much as possible.

B. The Crediting Period Should Be Extended to Ensure that All 300 Million Early Action Credits Can Be Realized

The proposed 300 million federal early action incentive credits/allowances could be an important tool to promote the deployment of RE and low-income EE projects before the start of the compliance period in 2022. However, it is not clear that all 300 million credits/allowances could be earned in the two-year period provided in the final emission guidelines. EPA notes that the pool was determined by assessing the historical maximum RE project deployment and assuming a 30 percent capacity. EPA applies this 30 percent capacity factor to all RE deployment in the historical maximum period, including distributed resources, despite the fact that many RE projects do not achieve such high capacity factors. EPA did not assess the reductions that could be achieved by deploying EE projects in low-income communities. It is likely that EPA has overestimated how many MWh could be generated by RE and displaced by EE in the two-year creditable period from 2020-2021.

If EPA's goal is to incentivize the early deployment of eligible projects, the Agency should consider allowing these projects to earn credits as soon as they come on line and not just in the period 2020-2021. This will further incentivize early deployment, as projects would start earning credits sooner, but also would ensure that the entire federal matching pool is utilized.

C. Projects Should Be Eligible to Earn CEIP Credits/Allowances if They Commence Construction or Operations after a State Submits its Initial Plan in 2016

In general, EPA ties the eligibility of an RE or EE projects to earn CEIP credits/allowances to the date that a state submits a final compliance plan or September 6, 2018 for states that become subject to a federal plan. This is intended to create an incentive for states to file final plans in 2016, so as to make projects eligible as soon as possible. However, this approach is not consistent with how EPA calculated the pool of federal credits, which assumes

maximum RE deployment starting in 2017, and is likely to leave RE and EE reductions unrealized as many states face barriers unrelated to a desire to implement the CEIP in submitting final plans by 2016. This approach to eligibility also is inconsistent with the fact that CEIP ERCs and allowances are fully transferrable. Accordingly, these early action awards could be used for compliance by any EGU, regardless of when the state in which they are located submitted a final compliance plan. For these reasons, EPA should tie eligibility to earn early action credits/allowances to the deadline for a state's initial plan submission, September 6, 2016,[25] assuming the state opts to participate in the CEIP.

As a preliminary matter, the four years between 2016 and 2020, the start of the CEIP crediting period, may not be sufficient to bring on the RE resources and implement the EE projects necessary to earn the full pool of federal matching credits. For example, it is not clear that EPA considered the amount of time it takes to build the transmission lines needed to bring new renewables to load centers. EPA notes that wind and solar projects "often require lead times of shorter duration, which would allow them to generate MWh beginning in 2020," but does not provide any analysis in support of this conclusion. It also is not clear that EPA factored in the time it takes to pass the new state legislation that may be needed to implement new low-income EE projects and the time needed to actually begin achieving reductions under these new programs. If states are not able to submit final plans until 2018, this will make tight timetables even tighter.

Finally, EPA's calculation of the size of the federal pool of credits assumes deployment starting in 2017. In order to be able to fully realize the potential of the early action program,

[25] This should be the date used to determine eligibility for states that either do not submit an initial plan or later become subject to a federal plan because a state plan has been disapproved.

EPA should ensure that projects in all states that commence construction after September 2016 are eligible. Even if EPA moves this eligibility date uniformly forward, it will still be challenging to earn all of the possible CEIP early action credits/allowances. Accordingly, the eligibility date for any project to earn CEIP credits/allowances should be September 6, 2016.

Consistent with a uniform eligibility date, EPA should provide a uniform definition for "commence construction" as RE projects have to "commence construction" after the eligibility date in order to be able to be awarded allowances and credits. The definition for commence construction, for purposes of the CEIP, should be that the owner or operator has all necessary preconstruction approvals or permits and has begun, or caused to begun, a continuous program of actual on-site construction of the source, to be completed within a reasonable time.

D. To Maximize the Number of Early Action Credits/Allowances that Could Be Earned, EPA Should Allow for Re-Allocation Between States and Project Types

In the final guidelines, EPA proposes to implement the CEIP in ways that could limit the ultimate utility of the program in incentivizing early reductions from affected EGUs through the deployment of RE and low-income EE projects before the start of the mandatory compliance period in 2022. EPA should ensure that the maximum number of CEIP credits/allowances can be earned and used by affected EGUs for compliance.

EPA proposes to redistribute any unallocated matching credits/allowances among states that opted to participate in the CEIP. This is a sound idea only if limited to the federal matching allowances reserved for RE resources as these are not uniformly distributed across the states. EPA should ensure that unused federal matching RE credits/allowances designated for a particular state can be redirected to incent more RE in states with a greater endowment of RE resources. Allowing projects in other states with greater endowments of economically viable RE

resources to be awarded unused CEIP RE credits/allowances will increase the overall amount of emissions reductions from renewable energy deployed, meeting the broader objective of the CEIP. This benefits all states, not just the ones in which eligible RE projects are located. One way to achieve the maximum amount of early action under the CEIP is to put all unused RE credits/allowances back into a federal pool and then distribute them to RE projects on a first-come, first served basis, as suggested in the proposed federal plan. Ensuring all CEIP RE allowances are ultimately used, regardless of the location of the eligible projects, is most consistent with the goals of the final guidelines and the CEIP. It would NOT be appropriate for EPA to change the amount of allowances a MWh of RE may earn from that defined in the proposal.

Any unused CEIP allowances and set aside by the State from the State's allowance allocation pool should simply revert back to the State to be included on a pro-rata basis as part of the State's allocation plan.

Similarly, EPA proposes to reserve some portion of CEIP credits/allowances for low-income EE projects. EPA did not assess the practical feasibility of low-income EE projects to materially benefit from the incentive created by the allowances. However, Duke Energy's experience managing low income EE programs, particularly home weatherization programs, has convinced us that while such programs provide an important service to a demographic that often suffers when energy prices increase, it is very difficult to make such programs cost effective (where the value of the energy saved covers the costs of the home retrofit). Therefore, two allowances for each MWh of energy savings created by programs targeted to low income communities may not be enough to significantly address the needs of these communities.

Duke Energy believes that despite these difficulties, support for EE programs targeted to low income communities is important. Therefore, if the share of federal matching allowances allocated to each state to support low income EE programs is unused at the end of the period, the allowances should NOT be retired as suggested by the EPA proposal. Rather, these allowances should be given to the State to be sold with the provision that the resulting revenue be used to directly subsidize existing or new low income EE programs. The expectation should be that a MWh of electricity savings from low income EE programs may require a larger incentive than the two allowances made available from the CEIP, but that the revenue from the sale of Federal matching allowances should still be available for low income EE deployment within the state.

EPA could also consider an alternative approach where unused federal matching allowances at the end of the period that had been targeted to low income EE could be distributed, to the states to supplement their RE set-aside.

E. EPA Should Consider Providing at Least 33 Percent of CEIP Credits for Low-Income EE Projects

As noted, EPA proposes to credit eligible RE and low-income EE projects differently, awarding EE projects double credits/allowances per MWh saved, but only awarding RE projects one credit/allowance per MWh generated. While not explicit, it appears that the larger credits for low-income EE, the savings from which are equal to the emissions benefits of reduced generation from affected units achieved by increased deployment of RE projects, are intended to address barriers to demand-side EE programs in low-income communities. Overcoming barriers to EE in low-income communities is an important goal, but it is not clear that the differential incentive between these projects and RE projects will achieve this goal. Duke Energy is concerned that absent a determination of a minimum amount of the CEIP allowance pool to be

targeted to low income EE, that most of the allowances will go to RE projects simply because such projects are easier to implement. Duke Energy suggests that a minimum amount (33%) be reserved for EE programs for low income communities.

F. States Are Best Positioned to Determine Eligibility for Early Action Credit/Allowances for Low Income EE Programs

EPA provides eligibility requirements for the projects that could qualify for the RE and low-income EE CEIP credits/allowances. These requirements limit eligibility to utility-scale wind and solar projects and low-income EE projects. For states that choose to submit their own plans, EPA should consider allowing them to determine which projects could receive early action awards.

As a preliminary matter, it is important that EPA recognized the benefits of utility-scale wind and solar projects, which provide more emission reductions at lesser cost than other RE projects.[26] Some states, with lesser wind and solar potential, may want to recognize and incentivize other types of RE generation that are available in state as part of their implementation of the CEIP.

Duke Energy believes EPA should use a definition of "low-income community" that already exists. State and city policymakers and project developers have familiarity with existing terms, for example, a geographic region's area median income or the percentage of families under the federal poverty line. Duke Energy believes the definition should allow those

[26] *See, e.g.*, Bruce Tsuchida *et al.*, *Comparative Generation Costs of Utility-Scale and Residential-Scale PV in Xcel Energy Colorado's Service Area*, Brattle Group (July 2015), http://brattle.com/system/publications/pdfs/000/005/188/original/Comparative_Generation_Costs_of_Utility-Scale_and_Residential Scale_PV_in_Xcel_Energy_Colorado%27s_Service_Area.pdf?1436797265.

households or communities where income is at 150% of the federal poverty level. At the same time, the company recognizes that there is a large variation in the cost of living throughout the country.

Duke Energy identifies a second aspect of the low-income community definition under the CEIP that should be changed – the prescribed extent in which low income communities are served. Some projects serve only low-income communities, for example residential energy efficiency improvements. Others, however, serve the broader community including low-income households. For example, energy efficiency projects at water treatment plants serve the broader community including low income households.

Duke Energy believes that applying a broad definition of how communities are served will maximize the environmental and economic benefits of the CEIP. It will do this by increasing the number of projects that are eligible – some of which may be larger and therefore lower cost to implement.

In the context of the federal plan, EPA could use the eligibility requirements provided in the final guidelines, but also could opt to allow states to submit partial plans that identify state-specific eligibility requirements. This would be consistent with EPA's proposal to allow states that are subject to a federal plan to submit partial plans to re-allocate allowances.

G. States Under a Rate-Based Plan, Stringency is Not Affected by the Number of CEIP ERCs Generated and Therefore Need Not Be Addressed by EPA or States

In the final emission guidelines, EPA finds that a state that chooses to implement the CEIP as part of its compliance plan must demonstrate in the plan that there is a mechanism in place to ensure that issuing early action CEIP credits would have no impact in the aggregate

emission performance of affected EGUs. Similarly, in a federal rate-based plan, EPA proposes to design a mechanism to issue early action ERCs and notes that it will "have no impact on the aggregate emission performance of sources required to meet rate-based emission performance standards during the compliance period." EPA is taking comment on this mechanism, which, the Agency notes, could include adjusting the stringency of the emission standards during the compliance periods to account for the issuance of early action ERCs or retiring a number of ERCs in an amount equivalent to the number of early action ERCs that were awarded in 2020-2021.

EPA has not explained why a mechanism is needed to ensure that the CEIP has no impact on the aggregate emission performance required of affected EGUs by the final emission guidelines. Under a rate-based plan, the stringency of the standards for any affected unit is a function of the carbon content of the fuel that the unit combusts to produce electricity and the number of MWh of electricity that are generated. Because there is no cap on the amount of generation that a unit could produce under a rate-based plan, the number of compliance instruments available—ERCs—does not affect the stringency of the standard that a unit has to achieve. The number of ERCs only influences the ease and cost of compliance, but has no impact on what a unit has to achieve in order to be compliant.

As EPA notes, the existence of the CEIP credits could improve liquidity in the early years of the program, which could be particularly important under a rate-based plan, because ERCs are awarded retrospectively. This may have the important effect of reducing price risks in the first step period when there will be the least information about the size of the ERC pool available to affected EGUs. However, these potential reductions in risk have no effect on the stringency of the standard applied to any particular affected EGU: the number of ERCs that a unit would need

to acquire for compliance would remain unchanged. Accordingly, neither states, nor EPA when implementing a federal plan, need to alter the stringency of the standards applied to units during the compliance periods or retire other ERCs that are earned during the compliance periods in order to ensure the environmental integrity of the emission guidelines in light of the CEIP. It also is not necessary to retire other ERCs equal to the number of CEIP ERCs issued.

In fact, if states or EPA do alter the standards applied to affected EGUs or retire ERCs to address perceived, but unsubstantiated concerns that the CEIP impacts the stringency of the emission guidelines, this functionally will change BSER for these units, in violation of what EPA has deemed achievable. In light of this, states that adopt rate-based plans may opt not to participate in the CEIP, which would be contrary to the goals of the early action program. The final model trading rules should make it clear that no showing is required that stringency of the emission guidelines is unaffected by participation in the CEIP because, by definition, it is.

VI. Duke Energy Comments on EPA's Proposed Evaluation, Measurement and Verification (EM&V) Guidance

EPA has requested comments from all interested stakeholders on several aspects of the draft EM&V guidance, expressing particular interest in feedback on several questions. Duke Energy provides responses to these questions below. Duke Energy notes a general concern that may be helpful to the Agency in thinking about EM&V guidance for EE programs that can be characterized as follows: even if EPA should base its EM&V guidance on the methods currently judged to be state of the art, or current best practices, EM&V is an evolving field. Today's best practices could be judged inadequate within a few years. If EPA does not build in some means to continually update EM&V, it risks locking in practices, processes and approaches that do not foresee how evolving technologies or understanding of energy efficiency could require new

methods and approaches. Final EM&V requirements should therefore include some collaborative mechanisms to ensure continuous updating and dissemination of knowledge.

Question 1: Does the guidance provide enough information to help EE providers determine what EM&V methods (i.e., project-based measurement and verification, comparison group methods, and deemed savings) to use for purposes of quantifying savings from specific EE programs, projects, and measures?

Response: This guidance is very high level. Individual programs will require a detailed M&V plan, the components of which are described in all of the documents referred to in the guidance document. Overall, this document will help to lay out the options and recommended procedures, but it is still only an overview of various methods.

Question 2: Does the guidance include sufficient information about the appropriate circumstances and safeguards for the use of deemed savings values? For project-based measurement and verification and comparison group methods?

Response: The document provides adequate and reasonable guidance but is not sufficient in describing all possible situations that could occur in preparing EM&V evaluations.

Question 3: Should the guidance specifically encourage greater use of comparison group approaches?

Response: No. Choice of method should be driven by the particular circumstances involved in evaluating a program. Comparison group approaches are not always the preferred method.

Question 3a: Under what circumstances is the application of such empirical methods practical and cost-effective?

Response: The choice of any M&V method, including comparison groups, should be tied to the significance of the program, e.g., a large program with significant impacts.

Question 3b: Would additional guidance be useful on "top-down" econometric EM&V methods, and the ways in which such methods can be used to verify savings at a high level of aggregation?

Response: Yes. This would be useful.

Question 4: Is the guidance in Section 3 on particular EE program types (consumer-funded EE programs, project-based EE, building energy codes, and appliance standards) helpful, clearly presented, and sufficient/complete? Can this guidance be reasonably implemented, considering data availability, cost effectiveness, accuracy of results, and other factors?

Response: While no guidance related to an ever evolving field like EM&V can be sufficiently complete, the current guidance is useful for an experienced professional. The guidance is useful for developing EM&V plans based on current state of the art in the field of EM&V, however, this document should not

be considered the only approved set of procedures for EM&V. As to reasonable implementation, every program is different and it is difficult to conclude that it will always be reasonable to implement these guidelines. One possible approach would be to require EM&V contractors to show either consistency with the guidelines or justify any deviations.

Question 5: Is the guidance on important technical topics (e.g., common practice baselines, accuracy and reliability, verification) helpful, clearly presented, and sufficient/complete? Can this guidance be reasonably implemented, considering data availability, cost effectiveness, accuracy of results, and other factors?

Response: Please see response to Question 4 above.

Question 6: How useful and usable is the guidance, overall? Does the relationship between the component parts (i.e., Sections 1-3 and Appendices A-C) clear and relatively easy to follow? Yes. Is each of these sections and appendices helpful, clearly presented, and sufficient/complete? What specific examples, graphics, or other visual elements would help illustrate concepts described in the guidance?

Response: The guidance provides a good high-level overview of the EM&V processes. The relationship between the component parts (i.e., Sections 1-3 and Appendices A-C) is clear and relatively easy to follow, providing a wide range of sample evaluations, including detailed calculations with comparative results across methodologies and a review and critique of the recommended method. As stated before, while no guidance related to an ever evolving field like EM&V can

ever be sufficiently complete, the current guidance is useful for an experienced professional. This highlights concerns expressed at the beginning of this section that care should be taken so as to avoid the problem of the guidance document locking in current best practices and inadvertently preventing future improvement.

Question 7: Does the guidance *not* cover any important EM&V topics relevant to fulfilling the EM&V related requirements of the emission guidelines? Is additional guidance needed to support the implementation of other eligible zero- and low-emitting measures that are directly metered?

Response: While the document provides reasonable guidance it is difficult to conclude that all possible important topics have been covered in an ever-evolving field such as EM&V. If eligible zero- and low-emitting measures are directly metered, then by definition, EM&V is not required to prove savings. Therefore, such guidance is not required in this document; however, a separate document containing information about these types of measures would be useful.

Question 8: How can the guidance most effectively anticipate the expected changes and evolution in quantification and verification approaches over time (given the time horizon for the emission guidelines)?

Response: The process to update this document must allow for flexibility to accept new approaches. Implementation of a formal review and approval process would be useful for new methods or approaches.