



November 26, 2014

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Attn: Docket ID No. EPA-HQ-OAR-2013-0602-0001

RE: Carbon Pollution Emission Guidelines for Existing Stationary Sources:  
Electric Generating Units, 79 Fed. Reg. 34,380 (June 18, 2014).

Re: **East Kentucky Power Cooperative Clean Power Plan Comments**

Dear Sir or Madam:

East Kentucky Power Cooperative respectfully submits the enclosed comments on the U.S. Environmental Protection Agency's Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34, 830 (June 18, 2014).

Sincerely,

A handwritten signature in blue ink that reads 'Jerry Purvis'.

Jerry Purvis,  
Director, Environmental Affairs

Enclosure

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## **I. Introduction**

East Kentucky Power Cooperative's (EKPC's) respectfully submits comments to the Environmental Protection Agency's (EPA's) pursuant to the Clean Power Plan under Section 111(d) of the Clean Air Act in regards to the proposed performance standards (ESPS) for existing electric utility generating units (EGUs). EKPC is a not-for-profit rural electric generation and transmission (G&T) cooperative based in Winchester, KY. Our mission and obligation under federal and state law is to provide safe, reliable, affordable electric power to the 16 Owner-Member electric distribution cooperatives. EKPC generates electricity at three base load power plants fueled by coal (8 units), one peaking plant fueled by natural gas (9 units), and six landfill gas units under the regulations by the Kentucky Public Service Commission. In addition to our portfolio of owned assets, EKPC purchases power from the Southeastern Power Administrator, (SEPA) who provides long term hydroelectric power. More than 80 percent of the power we generate is fueled by coal. EKPC is almost 700 employee's strong with total generating capacity near 3,000 megawatts, and that powers a 2,800 mile network of high-voltage transmission lines. EKPC is a member of the National Rural Electric Cooperatives Association (NRECA). EKPC is a leader in Kentucky providing renewable energy through the implementation of landfill gas electrical power generation.

More than 1 million Kentucky residents and businesses in 87 counties depend on the power we generate. Our 16 Owner-Member cooperatives serve mainly rural areas in the Eastern and Central two-thirds of Kentucky. EKPC and its Owner-Member cooperatives exist only to serve their member ratepayers. Our electric cooperatives serve some of the most remote parts of Kentucky. The terrain in this region varies from rolling farmland in Central Kentucky to mountains in the eastern portion. On average, our cooperatives have about 9 consumers per mile of power line, while investor-owned utilities average 37 consumers per mile and municipal

utilities average 48 consumers. We also serve some of the neediest Kentuckians. The household income of Kentucky cooperative members is 7.4 percent below the state average, and 22 percent below the national average. Twenty of the eighty-two counties we serve are characterized by “persistent poverty” by USDA. An area is characterized by “persistent poverty” when, based on census data, over the past 30 years, 20 percent or more of the population lived in poverty.<sup>1</sup> Areas in which residents are impoverished year after year will typically fare worse than an area in which poverty does not endure.<sup>2</sup>

Nationwide, not for profit electric cooperatives serve 42 million people in 47 states. While about 12 percent of the nation’s meters are members of a rural electric cooperative, those co-ops own and maintain 42 percent of the nation’s electric distribution lines, covering three quarters of the nation’s landmass. Electric cooperatives employ about 70,000 people nationwide.

EPA released the proposed Clean Power Plan (CPP) for existing EGUs on June 2, 2014, consistent with the President’s Climate Action Plan. The proposal ultimately sets out CO<sub>2</sub> emissions rate goals (lbs/netMWhr) that each state must meet. These goals begin with an interim state lbs/netMWhr rate for EGUs that must be met over a ten year averaging period (glide path) from 2020-2029 and a final rate beginning 2030. EKPC notes that EPA is diverging from its practice in other air regulations (e.g., MATS<sup>3</sup>) of using gross not net generation for the calculation of emissions rates. The net CO<sub>2</sub> emissions rate goals are not only more difficult to meet, but also punitive for stations like the Spurlock station which has 154 MWs of auxiliary power, 45 percent of which is used for pollution controls.

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<sup>1</sup> See USDA, Economic Research Service, Geography of Poverty, *available at* <http://www.ers.usda.gov/topics/rural-economy-population/rural-poverty-well-being/geography-of-poverty.aspx>.

<sup>2</sup> *Id.*

<sup>3</sup> Mercury Air Toxics Standards

EPA recognizes in the proposal that there is no technological option to reduce CO<sub>2</sub> emissions from power plants. Instead, EPA determines that the best system of emissions reduction (BSER) for CO<sub>2</sub> emissions from EGUs consists of two basic approaches that are made up of four “Building Blocks.” The basic approaches are (1) reducing carbon intensity from individual fuel burning electric generating units and (2) reducing state CO<sub>2</sub> emissions rates by reducing utilization levels of coal, and forcing increased use of natural gas, nuclear and renewable sources through a series of unprecedented requirements clearly outside of EPA’s authority under the Clean Air Act (CAA) or otherwise. Shifting generation away from coal, in the way that the CPP proposes, falls under the jurisdiction of the Federal Energy Regulatory Commission (FERC), the North American Electric Reliability Corporation (NERC), state legislatures, state public utility commissions and state environmental agencies, not EPA. The four Building Blocks are:

- Improving boiler efficiency by six percent (Building Block 1);
- Shifting electricity generation from existing baseload coal to existing natural gas combined cycle (NGCC) with a target of 70 percent capacity factor from existing NGCC (Building Block 2);
- Shifting generation to low-or zero-carbon generation by completing all nuclear generation currently under construction and somehow preventing the planned retirement of existing nuclear generation and increasing renewable energy (RE) generation (Building Block 3); and
- Increasing demand-side energy efficiency (EE) measures with a target of 1.5 percent in annual energy savings (Building Block 4).

EPA applies these four factors to 2012 state-level data to calculate the interim and final lbs/netMWhr CO<sub>2</sub> emissions rate goals. Almost all of the CO<sub>2</sub> emissions rate goal reductions are calculated by assuming that the CPP will shift generation from existing coal plants to existing natural gas combined-cycle units, new RE generation and through aggressive demand-side EE projects. For Kentucky these calculations yielded:

**Interim Goal (2020-2029)**  
**1,844 lbs/netMWh**

**Final Goal (2030)**  
**1,763 lbs/netMWh**

Congress never intended for the CAA to regulate greenhouse gas emissions (GHG) from power plants. The proposed CPP is an unprecedented attempt to regulate every aspect of the generation and use of electricity in this country. The only authority that EPA has under Section 111(d) is to set guidelines for states to use to develop standards of performance for existing fossil-fuel generators. Furthermore, EPA's proposed CPP violates the Rural Electrification Act's (RE Act's) federal mandate that rural America receive reliable, low cost electric services because it will result in the significant reduction in the operation of or retirement of nearly all coal-fired generation.

Because EPA recognizes in the proposal that there is no technological option to reduce CO<sub>2</sub> emissions from EGUs, the CPP's BSER relies almost exclusively on reducing or eliminating coal generation to reduce CO<sub>2</sub> emissions. Across the country MATS and the Cross-State Air Pollution Rule (CSAPR) are forcing the retirement of approximately 47 – 75 GWs of coal units.<sup>4</sup> The CPP is estimated to force the retirement of an additional approximately 40 – 48 GWs of coal capacity.<sup>5</sup> Without this coal generation, the reliability of this country's electric grid is severely threatened. Specific reliability concerns are (1) the direct impacts on reliability from resource adequacy and the power grid's infrastructure, and (2) impacts on reliability due to the changing resource mix.<sup>6</sup> Coal generation is essential to serving this county's electric load, ensuring that the owners and operators of coal generation remain viable and preventing dramatic

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<sup>4</sup> Institute for Energy Research, Impact of EPA's Regulatory Assault on Power Plants: New Regulations to Take More than 72 GW of Electricity Generation Offline and the Plant Closing Announcements Keep Coming, Frequently Asked Questions, available at <http://instituteforenergyresearch.org/topics/policy/power-plant-closures/>

<sup>5</sup> See Potential Reliability Impacts of EPA's Proposed Clean Power Plan, Initial Reliability Review, North American Electric Reliability Corporation (Nov. 2014), at p. 19.

<sup>6</sup> See Potential Reliability Impacts of EPA's Proposed Clean Power Plan, Initial Reliability Review, North American Electric Reliability Corporation (Nov. 2014) at p. 17.

increases in electricity rates. Rural electric cooperatives are particularly vulnerable to the impacts of reduced coal generation. These impacts will fall on the poorest electric consumers in the country. This is simply unacceptable. Because of the CPP, the CAA and the RE Act (and its progeny) can no longer be read and applied harmoniously. The CPP and EPA's promulgation of the CPP is, therefore, illegal and must be withdrawn.

Should the EPA continue this regulatory fiat, states need to be able to craft state implementation plans (SIPs) that include both rate and mass based regulations. States need the ability to develop hybrid compliance plans. All utilities are not similarly situated with regard to the assets within their fleet and have differing abilities to comply with rate or mass based SIPs. EKPC and some other utilities within Kentucky may be able to comply with a rate based plan if substitution of new NGCC for retired coal plants is allowed. Other utilities have little, if any, opportunity to achieve compliance with a rate based SIP and will require a mass based plan to achieve compliance. States should not be placed in a position to create winners and losers among utilities within its borders. The EPA must provide the states with true flexibility and allow states to style SIPs that do not drive utilities out of business and leave retail customers with excessive rates.

For EKPC, it is imperative that the emissions rate approach be an option for demonstrating compliance and that states have the flexibility to structure compliance with emission rate goals. EKPC's ability to comply with the CPP is wholly dependent on EPA allowing compliance with rate-based goals. EKPC must be permitted to substitute new NGCC units in place of retired coal units in its emissions rate compliance calculations. EKPC must also have the flexibility to include existing peaking gas units in its emission rate calculations as a

compliance measure. Such flexibility is essential if the CPP is going to have a chance of being achievable and if natural gas is going to be the primary fuel for electricity generation.

## **II. Under the Proposed CPP EKPC cannot Provide Reliable Service**

The proposed CPP will result in significant reduction of or elimination of nearly all coal generation. The CPP's Building Blocks 1, 2, 3 and 4 for BSEER are characterized by EPA as "shifting" power generation away from coal-fired units.<sup>7</sup> However, through the Building Blocks EPA is actually forcing the retirement of numerous EGUs because of an extreme position EPA takes in each of these Building Blocks. The majority of G&Ts rely primarily (and in some instances almost exclusively) on coal generation. Curtailing coal generation, as proposed in the CPP, will threaten reliable service because of G&Ts' significant reliance on coal generation<sup>8</sup> to provide electricity to their members.

### **A. The CPP Requires Coal-Fired Units Retirement or Restricts Operation**

EKPC relies almost exclusively on state of the art coal-fired generation to serve its Owner-Members. The CPP violates the RE Act and over sixteen additional statutes establishing the federal mandate that rural electric cooperatives reliably serve rural America and will potentially force G&Ts like EKPC to violate the RE Act mandate, as well as FERC requirements and state laws requiring reliable service. The FERC, NERC, Regional Transmission Organizations (RTOs), Independent System Operators (ISOs) and state reliability analyses have all identified significant reliability concerns with the CPP.

Numerous studies and analyses have been conducted by (and on behalf of) rural electric cooperatives. These studies conclude that the CPP, as proposed, will significantly impact the

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<sup>7</sup> See, e.g., 79 Fed. Reg. at 34,836.

<sup>8</sup> In 2012 70 percent of cooperative electricity and 57 percent of all electricity was generated by coal units.

reliability of the rural electric power supply. EKPC is a member of the PJM<sup>9</sup> RTO and as EKPC drafted its comments, there have not been any public PJM reliability comments to reference. Conversations with PJM indicate that they plan to perform reliability analysis when the state SIPs are available. PJM has performed studies that conclude regional compliance yield less cost than state by state compliance. As discussed later, PJM likely recognizes that states will find it difficult to successfully satisfy the stakeholder within their footprints in the time allotted for SIPs. Diverse SIPs will no doubt introduce many unanticipated complications in PJM's operations and economic models.

The Southwest Power Pool (SPP) has made public statements related to reliability and has concluded that if EGU retirements occur as projected by EPA, without the requisite transmission and generation infrastructure improvements, the power grid will suffer extreme reactive power deficiencies that would expose it to widespread reliability risks resulting in significant loss of load and violations of NERC reliability standards.<sup>10</sup> SPP determined that even if generation capacity is added to replace the projected EGU retirements, additional transmission infrastructure would still need to be added to maintain reliable operation of the grid. The reserve margin, the amount of generation capacity an entity maintains in excess of its peak load-serving obligation, cannot be maintained. SPP's minimum required reserve margin is 13.6 percent per load-serving entity. However, SPP's evaluation of the projected EGU retirements indicates that by 2020 SPP's reserve margin will fall to 4.7 percent. SPP projected that by 2024, SPP's anticipated reserve margin would be -4.0 percent, representing a capacity margin deficiency of

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<sup>9</sup> PJM Interconnection LLC is an RTO serving all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia.

<sup>10</sup> See Comments from Southwest Power Pool on Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Generating Units (Oct. 9, 2014), at p. 4.

approximately 10,100 MW. Out of 14 load serving members assessed, 9 would be deficient by 2020 and 10 by 2024. Without an adequate reserve margin the SPP and its members cannot provide reliable electricity, particularly during extreme events when health and safety of the American public requires the full availability of that reserve margin.

The Southern States Energy Board also raised reliability concerns because of the impact from coal unit retirements required by the CPP, in addition to retirements that are already planned. The retirements required by the proposed CPP, in addition to the 71 GW of coal-fueled generation that has been retired or is already planned to be retired between 2010 and 2020, will result in a “total loss of generation to power 60 million homes due to other recent regulations and factors.”<sup>11</sup>

Venita McCellon-Allen, President of Southwestern Electric Power Company (SWEPCO), in remarks to the Public Utility Commission of Texas (PUCT) on August 15, 2014, also raised concerns about being able to provide reliable electricity under the proposed CPP. She stated that EPA’s proposed CPP anticipates that SWEPCO will retire Welsh Units 1 and 3 and the Pirkey Plant by 2020. This retirement reduces the power generation by almost 1,700 MWs which is 30% of SWEPCOs total installed capacity and 100% of the base load generation in the Southwest Power Pool’s East Texas pocket. The proposal does not recognize RTO seams, and makes no accommodation for the strength – or lack of strength – of SPP’s current transmission system.<sup>12</sup> The existing SPP system is primarily a lower-voltage system that relies on local generation.<sup>13</sup> The CPP anticipates that these units will be retired within five years of the plan

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<sup>11</sup> Resolution of Southern States Energy Board, 4.2014 – Resolution Concerning U.S. EPA’s Proposed Greenhouse Gas Emission Guidelines for Existing Fossil-Fueled Power Plants (Sept. 29, 2014).

<sup>12</sup> See SWEPCO Presentation to PUCT, August 15, 2014, at p. 9.

<sup>13</sup> *Id.* at p. 9-10.

becoming effective and this timeline “gives no recognition to the planning, approval, permitting and siting time needed to approve and install new generation and transmission.”<sup>14</sup>

The Electric Power Research Institute (EPRI) explained in its comments on the CPP that if the levels of RE, nuclear credits, and EE (Building Blocks 3 & 4) contemplated by the proposed CPP are not achieved, power generators may be forced to choose between compliance and reliability because cutting fossil fuel generation to the levels necessary to comply with the CO<sub>2</sub> emissions goals may result in a shortfall of available electricity. “States that cut electricity exports (or ramp up imports) transfer the problem to neighboring states, forcing them to seek the power elsewhere; however, the BSER design cuts the short term response capability of the existing fleet to a minimum across all the states.”<sup>15</sup> EPRI projects that if the CPP is not properly implemented, there will be a shortage of electricity.

Comparable findings were made by NERC in a reliability study conducted by the organization. NERC concluded that the projected EE goals will lead to reliability issues. Specifically, NERC found that EPA has overestimated the amount of EE expected to reduce electricity demand and this overestimation has implications on electric transmission and generation infrastructure needs.<sup>16</sup>

In the proposed CPP, EPA is taking an unprecedented approach to environmental regulation. EPA typically regulates pollutants by establishing best practice work practices and/or establishing emission limits (or guidelines for setting emission limits) for a unit or source. Instead, in the proposed CPP, EPA is attempting to regulate what type of energy source a utility

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<sup>14</sup> *Id.* at p. 10.

<sup>15</sup> Comments of the Electric Power Research Institute on Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (Oct. 20, 2014), at p. 29.

<sup>16</sup> *See* Potential Reliability Impacts of EPA’s Proposed Clean Power Plan, Initial Reliability Review, North American Electric Reliability Corporation (Nov. 2014) at p. 16.

can use to serve its members. Rather than allow a utility to determine how best to provide reliable and affordable power to its customers and regulating the emissions produced from that generation, in an unprecedented measure, EPA is directing the utilities how to generate electricity. Because the proposed CPP places severe restrictions on utility operation, and because it impacts nearly all power generation in a relatively short time frame, impact on grid reliability will be greater from the CPP when compared with prior environmental regulation programs.<sup>17</sup> While each of the Building Blocks captures, in part, events that individually occur and impact power generation, the application of all four Building Blocks to the electricity market is unprecedented.

The CPP's EE goals far exceed recent trends and projections included reports and analysis conducted by NERC, the Energy Information Administration (EIA), EPRI and various utilities.<sup>18</sup> The CPP EE goals also appear to underestimate costs and the capital investments necessary to sustain EE performance through 2030. Finally, if a state cannot meet the EE goal, offsets in the form of coal retirements may be required, introducing potential reliability concerns into the system. Separate pending EPA regulations could also require some coal units to be retired, which would cause additional strain on the system, and could negatively impact reserve margins and reliability.<sup>19</sup>

EKPC believes that the CPP will, in time, have serious, damaging impacts on the reliable operation of the bulk electric system, RTO markets, and will have significant and detrimental impacts on human health, public safety, and economic activity.

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<sup>17</sup> See 2014 Long-Term Reliability Assessment, North American Electric Reliability Corporation (Nov. 2014), at p. 12.

<sup>18</sup> *Id.* at 16.

<sup>19</sup> *Id.* at 21.

**B. Existing Natural Gas Sources Are Insufficient to Provide Reliable Electricity in Light of the Restricted Coal Unit Operation**

The CPP proposes shifting a substantial percentage of electricity generation to existing NGCC units. However, there is not enough existing NGCC in this country, and none in Kentucky, to make up for the forced reductions in coal generation. Gas supply and infrastructure in this country are not available or reliable enough to serve all the gas generation that will be needed. This leaves a significant gap between the energy that can be generated and remain in compliance with the CO<sub>2</sub> goals and the energy that must be generated to continue to supply reliable electricity to the population.

EPA recognizes this fact in the Notice of Data Availability (NODA) that was issued in this docket when it proposes that a potential means of addressing the wide disparity in CO<sub>2</sub> emissions rate goals in states with existing NGCC compared to states without existing NGCC is to artificially assign a minimum re-dispatch to NGCC percentage to states with little or no existing NGCC. This would force these states to build new NGCC to meet these targets because it will lower the CO<sub>2</sub> emissions rate goals in these states while raising the goals in states with existing NGCC.

EKPC is a member of PJM and fully participates in PJM's market. EKPC sells all its generation into the PJM market and purchases all of its energy requirements from the PJM market. EKPC uses its generation fleet to hedge energy purchased in the market. EKPC, like most G&Ts, does not own any base load natural gas generation to hedge its load. Despite EPA's claims, the CPP does not provide much flexibility. EKPC has little chance of compliance with the CPP if EKPC is not able to substitute new NGCC and existing peaking gas units for retired coal generation. EKPC will be forced into the PJM spot energy market. Depending on the

particular day and the availability of generation, the PJM spot market can be punitive to load serving entities and ultimately the retail customers of the EKPC Owner-Members.

Shifting energy sources from coal-fired generation to existing NGCC and RE will create a financial hardship on end users of electricity. NERA estimates that under the CPP, “[d]elivered electricity prices would increase by about 12 percent on average over 2017 and 2031” before considering the cost of needed transmission and natural gas infrastructure.<sup>20</sup> This hardship will be borne by those who already face significant economic difficulties.

In addition to the financial obstacles created by over-reliance on existing NGCC, there is not enough existing NGCC in this country generally, and in Kentucky particularly, to make up for the forced reductions in coal generation. These NGCC units were not designed to operate at capacity factors close to EPA’s 70 percent re-dispatch goal and the system cannot support that level of operation even if the units could run that much. The only way in which the re-dispatch can work is for there to be significant improvements in natural gas and transmission infrastructure across the country generally, and particularly in Kentucky, and for new NGCC and existing peaking gas units to count for compliance. There are numerous regulatory, engineering and cost hurdles to establishing a sufficient infrastructure for increased reliance on the installation of new NGCC sources and EPA neglected to account for these barriers in its proposal.<sup>21</sup> Developing the necessary infrastructure requires, at a minimum, new transmission, new and expanded natural gas pipelines, firm gas transportation and supply, and heat rate improvements will be necessary for compliance with the CPP’s CO<sub>2</sub> emissions rate goals.

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<sup>20</sup> See Potential Impacts of the EPA Proposed Clean Power Plan, NERA Economic Consultants (Oct. 2014), at p. S-6.

<sup>21</sup> See Potential Impacts of the EPA Proposed Clean Power Plan, NERA Economic Consultants (Oct. 2014), at p. 4.

Wholly separate from the proposed CPP, demand for natural gas is expanding. Additional reliance on NGCC sources may not be feasible considering the natural gas market and infrastructure is already at its edge. Without considering the NGCC expansion proposed in the CPP, the Interstate Natural Gas Association of America (INGAA) estimated that the U.S. and Canada will need 28,900 to 61,600 miles of additional natural gas pipelines through 2030.<sup>22</sup> Subsequent to making that estimate, the INGAA predicted that just to meet existing and forecasted demand over the next twenty years, the U.S. and Canada need about 850 miles per year of new gas transmission mainline and over 800 miles per year in new laterals to and from power plants and processing facilities.<sup>23</sup> Annual costs for completing the necessary natural gas expansion are estimated at \$10 billion per year.<sup>24</sup> Given the high cost, in addition to the complicated siting and permitting processes for natural gas pipeline, and storage and other necessary infrastructure, the timeline proposed in the CPP for increasing reliance on NGCC units is unrealistic and simply too short. At a minimum, EPA needs to re-think this timeline and extend the long term goal to 2040.

In its reliability study, NERC also identified reliability concerns with increased reliance on natural-gas-fired generation.<sup>25</sup> Historically, NGCC units have been used for load following, and they are better suited for this purpose.<sup>26</sup> Extreme weather (as experienced in early 2014's polar vortex) impacts fuel availability for NGCC units, and can result in forced outages.<sup>27</sup> Over-reliance on NGCC sources will undermine the resiliency and fuel diversification that is built into the

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<sup>22</sup> INGAA 2009

<sup>23</sup> INGAA, North American Midstream Infrastructure through 2035: Capitalizing on Our Energy Abundance, March 18, 2014 at <http://www.ingaa.org/Foundation/Foundation-Reports/2035Report.aspx>.

<sup>24</sup> INGAA 2014; EISPC Study on Long-Term Natural Gas and Electric Infrastructure, September 4, 2014 by ICF, webinar.

<sup>25</sup> See Potential Reliability Impacts of EPA's Proposed Clean Power Plan, Initial Reliability Review, North American Electric Reliability Corporation (Nov. 2014) p. 9.

<sup>26</sup> *Id.*

<sup>27</sup> *Id.*

existing system.<sup>28</sup> Increased reliance on NGCC units will, naturally, increase demand for natural gas and additional infrastructure will have to be constructed to supply natural gas to new generation.<sup>29</sup> The implementation timeline presented in the CPP does not adequately account for the time necessary to create the required infrastructure.<sup>30</sup>

NERC's studies show that as variable sources of energy generation increase, maintaining voltage stability becomes challenging. Although additional studies are necessary to evaluate this CPP impact further, NERC points out that voltage stability is essential to a reliable electricity grid.<sup>31</sup> Existing generation methods serve as a foundation for reliable electricity for ratepayers and cooperative members served. Coal-fired generators are able to respond automatically to frequency changes, provide operating reserves and have ramping capability and disturbance performance.<sup>32</sup> RE sources are not similarly capable of maintaining a sufficient amount of reactive support and ramping capabilities which will likely lead to increased maintenance hours or higher forced outage rates.<sup>33</sup> NERC concluded that the RE goals established in the CPP may overestimate the reasonably achievable expansion levels for RE sources and do not fully reflect the reliability consequences of RE sources.<sup>34</sup>

FERC is also concerned that the CPP will hamper the reliability of the energy grid. In testimony before Congress, FERC Commissioner Philip D. Moeller stated, “[j]ust as [FERC] does not have expertise in regulating air emissions, I would not expect EPA to have expertise on the intricacies of electric markets and the reliability implications of transforming the electric

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<sup>28</sup> *Id.*

<sup>29</sup> *Id.* at 10.

<sup>30</sup> *Id.* at 13.

<sup>31</sup> See Potential Reliability Impacts of EPA's Proposed Clean Power Plan, Initial Reliability Review, North American Electric Reliability Corporation (Nov. 2014) at p. 25.

<sup>32</sup> *Id.* at 13.

<sup>33</sup> *Id.*

<sup>34</sup> *Id.*

generation sector.”<sup>35</sup> Commissioner Moeller accompanied this point with a call for a transparent forum where EPA and FERC (and other stakeholders) could discuss the reliability concerns raised by the proposed CPP. FERC Commissioner Tony Clark put it more starkly: “reliability faces a[]... challenge in the form of several new and proposed environmental regulations.”<sup>36</sup> The FERC Commissioners’ testimony makes clear that the agency is gravely concerned about the impacts that the proposed CPP will have on grid reliability and that FERC is eager to work collaboratively with EPA to ensure reliable electricity remains available to all.

Studies and analyses undertaken by, and on behalf of, numerous rural electric cooperatives all reached the same conclusion: the reliability of the power supply grid will be significantly harmed by the CPP’s proposal to retire numerous EGUs. Moreover, the CPP does not provide adequate mechanisms to successfully replace these lost power sources with NGCC, RE or through reduced demand in the form of EE.

### **III. Proposed CPP will Impose Extraordinary Costs on G&Ts and EKPC**

EKPC relies on rate revenue from the high capacity factor operation of its 1,400 megawatt Spurlock Generating Station to service its substantial RUS debt, maintain infrastructure, pay for increasing maintenance expenses, expand its natural gas generation while struggling to maintain low rates. EKPC has invested well over a billion dollars to install state of the art emissions controls to comply with numerous other regulations issued by EPA under the CAA: its New Source Review (NSR) Consent Decree, Title IV,<sup>37</sup> NAAQS,<sup>38</sup> CAIR,<sup>39</sup> CSAPR, NSR, MATS, the Clean Water Act, and various solid waste regulations. EKPC’s coal-fired units

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<sup>35</sup> Written Testimony of FERC Commissioner Philip D. Moeller Before the Committee on Energy and Commerce Subcommittee on Energy and Power United States House of Representatives (July 29, 2014), at p. 7.

<sup>36</sup> Written Testimony of FERC Commissioner Tony Clark Before the Committee on Energy and Commerce Subcommittee on Energy and Power United States House of Representatives (July 29, 2014), at p. 4.

<sup>37</sup> Title IV of the Clean Air Act: Acid Deposition Control

<sup>38</sup> National Ambient Air Quality Standards

<sup>39</sup> Clean Air Interstate Rule

are among the lowest emitting units in the country. Now EPA is proposing to restrict the ability of these well-controlled units from operating and will leave these investments as stranded assets and result in dramatic, unprecedented and dangerous increases in electricity rates. Spurlock's potential stranded cost is nearly \$1.4 Billion.<sup>40</sup> This amount will potentially be even higher as EKPC continues to invest in projects to meet additional non-CPP environmental regulations and other operating enhancements.

As discussed, across the country MATS is forcing the retirement of approximately 47-75 GWs of coal units.<sup>41</sup> The CPP is estimated to force the retirement of an additional approximately 40-48 GWs of coal capacity.<sup>42</sup> These extensive retirements are expected to exacerbate resource adequacy concerns unless additional replacement capacity can be built in a timely fashion.<sup>43</sup>

#### **A. The CPP Will Increase EKPC's Operating Costs**

Reduced coal-generation capability will likely impact EKPC's revenue. The combination of this reduction in rate revenue and the cost of filling the generation gap with market power will have an immediate and dramatic financial impact on EKPC's Owner-Members. This impact is compounded by (1) unrealistic heat rate improvement goals laid out in the proposal; (2) the additional cost of environmental dispatch of coal and gas operation under Building Block 2 without regard to economics or reliability; (3) the cost of RE and the market gap between the

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<sup>40</sup> If EPA allows substitution of NGCC for retired coal units in the final rule, EKPC's stranded cost may not be as substantial.

<sup>41</sup> Institute for Energy Research, Impact of EPA's Regulatory Assault on Power Plants: New Regulations to Take More than 72 GW of Electricity Generation Offline and the Plant Closing Announcements Keep Coming, Frequently Asked Questions, available at <http://instituteforenergyresearch.org/topics/policy/power-plant-closures/> Reference EPA's 9.5 GW retirement estimate.

<sup>42</sup> See Potential Reliability Impacts of EPA's Proposed Clean Power Plan, Initial Reliability Review, North American Electric Reliability Corporation (Nov. 2014) at p. 19.

<sup>43</sup> See Potential Reliability Impacts of EPA's Proposed Clean Power Plan, Initial Reliability Review, North American Electric Reliability Corporation (Nov. 2014) at p. 21.

installation cost and market value of RE capacity and energy; and (4) the cost of EE that EKPC's distribution member cooperatives will incur to try and meet savings targets from rural service territories.

Running coal units less, which is what the proposed CPP effectively requires, will have a significant impact on the Owner-Members of rural electric cooperatives. These extraordinary costs will challenge G&Ts ability to service debt (over \$47 billion dollars of which is RUS debt). EKPC's at risk debt is \$2.7 Billion, or about 85% of its balance sheet. \$2.4 Billion of EKPC's at risk debt is owed to or guaranteed by the Federal government. Because of the *pari passu* nature of the debt, the CPP also puts at risk other secured lenders to EKPC and the industry. G&Ts, as not-for-profits, have limited equity available to them and by contrast are heavily leveraged as compared to IOUs and public power. All of these extraordinary costs must be passed on to EKPC's Owner-Members. EKPC does not have shareholders; all costs are borne by Owner-Members. The significant rate increases that will result from the CPP will have a major impact on the rural communities served by EKPC. EKPC's CPP cost analysis determined that electricity rates will increase up to 35 percent by 2020.

NERA evaluated the increase on coal unit retirement in different regions as a result of the proposals in the CPP. Using all four Building Blocks, NERA projects that there will be an 18 percent increase in coal unit retirement (as compared to 2014 retirement numbers) and using only Building Blocks 1 and 2, NERA estimates that there will be a 68 percent increase in coal unit retirements through 2031 (as compared to 2014). NERA estimates that the central region and southeast region will experience the greatest impact from these retirements. With these significant retirements, it will be necessary for these regions to supplement the energy production

through alternative sources (NGCC or RE) to ensure that electricity continues to be delivered reliably.<sup>44</sup>

**B. EKPC's Customers will Bear the Burden of Increased Generation Costs**

EPA's cost/benefit calculations take credit for phantom benefits and overstate cost savings from EE to reach the conclusion that electricity bills will be reduced eight percent by the CPP. Actually, EKPC's rates and electricity bills could increase much more substantially. Energy Ventures Analysis estimates that in 2020, annual household electricity bills in Kentucky will increase 35% over the 2012 rate, an increase of almost \$450 in real dollars.<sup>45</sup> These rate increases will have tangible impacts on reliable service and consumer health in rural service territories. History tells us that in rural service territories, increases in rates result in service disconnection, voluntary under-service and use of alternative heating and other energy options like woodstoves and lump coal. These all have real, immediate impacts on human health as compared to CO<sub>2</sub> reductions which have a potential future impact on human health.

EKPC expects that the costs to comply with the CPP will be significantly higher than anticipated by EPA.<sup>46</sup> As an example, the sustained cold weather in the eastern half of the United States in early 2014 resulted in peak market prices (in PJM) in excess of \$2,000/MWH and sustained prices of \$70/MWH, well above the "round the clock" average price of \$32/MWH experienced in 2013. And this occurred prior to the retirement of capacity due to MATS and the CPP. Cost spikes and sustained high costs will be borne by the Owner-Member ratepayers.

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<sup>44</sup> Potential Energy Impacts of the EPA Proposed Clean Power Plan, NERA Economic Consulting (Oct. 2014), at p 22.

<sup>45</sup> Energy Market Impacts of Recent Federal Regulations on the Electric Power Sector, Energy Ventures Analysis (Nov. 2014), at p. 30.

<sup>46</sup> EPA projects that the annual compliance cost of the proposed rule's Option 1 ranges from \$5.4 to \$7.4 billion in 2020 and from \$7.3 to \$8.8 billion in 2030. The projected annual incremental compliance cost of the proposed rule's Option 2 ranges from \$4.2 to \$5.4 billion in 2020 and from \$4.5 to \$5.5 billion in 2025. Regulatory Impact Analysis for the Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants (June 2014), at p. 3-22.

Because they occur at high usage times, those Owner-Member ratepayers bear the combination of extremely high prices at the very time their usage is peaking, resulting in bills which are simply unaffordable.

A report by U.S. Senators Lisa Murkowski and Tim Scott, “Indicators of American Energy Insecurity,” explained that even before power systems implement the retirements mandated by the proposed CPP, many citizens already suffer from “energy insecurity” due to the cost of energy to heat or cool homes.<sup>47</sup> And a study conducted by NERA Economic Consulting of the proposed CPP on the U.S. Energy System looked at the economic impact of the CPP and found that it will drive up electricity prices which will have the most significant impact on those who already struggle to make ends meet.

In its study, NERA concluded that for the period 2017-2031, assuming that all four “Building Blocks” are used, to achieve an average of 22 percent reduction in CO<sub>2</sub> emissions, 45 GW of coal units will be retired, resulting in a 29 percent decline in coal-fired generation. Natural gas generation will only increase about five percent on average and the price of natural gas would increase by about two percent on average. If the energy sector only employs building blocks 1 and 2, 169 GW of coal units would be retired, natural gas prices would increase by 29 percent, on average, and NERA projects the cost of delivered electricity would increase by 17 percent.<sup>48</sup>

If coal-fired generation plants close, the immediate surrounding communities in Kentucky will suffer. Manufacturing jobs and other local jobs, commerce and tax revenue bases

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<sup>47</sup> See Plenty at Stake: Indicators of American Energy Insecurity, U.S. Senators Lisa Murkowski and Tim Scott (Sept. 2014).

<sup>48</sup> Potential Energy Impacts of the EPA Proposed Clean Power Plan, NERA Economic Consulting (Oct. 2014), at p.S-6.

will all be depleted.<sup>49</sup> Local communities depend on revenue and the economic benefits of having a prosperous plant.<sup>50</sup> Not only will the CPP's impact be felt by the increased electricity costs, but communities supported by power plants will also be hit hard.

#### **IV. Alternative Goals**

EPA is also soliciting comments on state goals that are higher CO<sub>2</sub> emissions rates but the interim goals will have to be met from 2020-2024 and the final goals in 2025. For Kentucky, the alternate limits are 1,951 lbs/netMWh interim and 1,918 lbs/netMWh final. This alternative approach identifies the "system of emission reduction" as including, in addition to Building Block 1, the reduction of fossil fuel-fired EGUs' mass emissions achievable through reductions in generation of specified amounts from those EGUs. Under this approach, the measures in Building Blocks 2, 3 and 4 would not be components of the system of emissions reductions, but instead would serve as bases for quantifying the reduction in emissions resulting from the reduction in generation at affected EGUs. This alternative approach contains a more aggressive compliance timeline than the primary CPP option and the lack of projected RE and EE in the compliance calculation for a portfolio approach will result in a significant increase in cost and forced retirements.

Like the primary proposal, EPA's alternative goals do not create a workable framework. The proposed alternative does not provide EKPC with relief from the devastating financial impacts that are detailed above. Basing the calculations on net versus gross emission, the alternative goals include the same unrealistic concept that all facilities (or any EGU) can get a six percent heat rate reduction in addition to the projects that have already been completed. Coal-

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<sup>49</sup> "A Power Plant in California Goes Quiet, but the Stacks Still Tower," The New York Times (Nov. 24, 2014), at page A12.

<sup>50</sup> *Id.*

fired plants are still left having to make the same kind of reductions in capacity factor to achieve these rates. The goal calculation is fatally flawed no matter which Building Blocks are or are not included.

#### **V. Notice of Data Availability**

On October 30, 2014, EPA published a NODA in the CPP docket that seeks additional comment on a number of potential revisions to the CPP. These potential revisions include:

- Flexibility on interim goal compliance dates;
- Potentially allowing 2010 and 2011 to be considered part of the baseline;
- Addressing the discrepancies between the state emissions rate goals by forcing states with fewer existing NGCC units to meet a minimum level of re-dispatch to NGCC through the development of new NGCC thereby reducing the emissions rate goals in these states and increasing the emissions rate goals in states with more existing NGCC;
- A potential way to give credit for out of state RE projects; and
- Downward adjustments to the emissions rate goals for RE and EE projects.

EKPC supports the elimination of the interim goals because they force an overly-aggressive compliance schedule. Even assuming that state compliance plans can be submitted and approved in 2016 (which is impossible) utilities and cooperatives would have only three years to come into compliance otherwise it is not possible to meet the interim goals. State compliance plans are much more likely to be approved in 2018 and beyond which will force immediate compliance. Compliance, of course, becomes even more difficult in states with lower emissions rate goals.

EPA's suggestion that the interim goals could become more flexible based on infrastructure expansion requirements or book life of affected EGUs does not acknowledge that 2030 is the earliest that a compliance obligation can go into effect. Flexibility in the compliance schedule for interim goals does not change this fact.

EKPC believes that an appropriate baseline year is 2005 and that any emissions limitation set by the states should be based on this new baseline. But because EPA seeks comment on whether 2010, 2011 or 2012 should serve as baseline years, EKPC recommends that the highest of these three years be used as the baseline and that the time to come into compliance be extended such that the final goal is effective circa 2040.

EPA's attempt to force re-dispatch in states with little or no existing NGCC illustrates clearly that Building Block 2 arbitrarily creates winners and losers by punishing states that burn more natural gas for electricity generation and rewarding states that burn less. EPA now seeks to fix this serious error by forcing re-dispatch to NGCC units that do not exist. This type of requirement is even more arbitrary and unreasonable than the existing Building Block 2. The only reasonable solution to Building Block 2 is to remove it (along with the other three Building Blocks) and start again with a rule that complies with the CAA.

It is essential that the entities that own out of state Renewable Energy Certificates (RECs) get credit for those RECs in the states in which they are headquartered. Any other treatment of out of state RECs, results in the loss of the investments in these RE assets. While EKPC appreciates the fact that EPA has recognized the importance of this issue, the multi-state approach that the NODA suggests would allocate the RECs among the states and would not ensure that the entity that invested in the RE asset received the value of that asset in the emissions rate goal compliance equation. EPA continues to suggest that a multi-state approach

is the only sure way for out of state RECs to receive full value in another state. EKPC believes that multi-state compliance arrangements will be difficult to form and administer and are not a real option for states like Kentucky.

Any further downward adjustment in the emissions rate goals will intensify the reliability and excessive cost impacts of the CPP. EPA cannot legally lower emissions rate goals any further.

In the recently released technical support document in which EPA calculated potential total mass CO<sub>2</sub> emissions for each state, EPA also calculated total mass CO<sub>2</sub> emissions for each state assuming that new NGCC can be counted for mass emissions approach compliance. It is essential that states have the flexibility to employ emissions rate goals in lieu of mass based goals and EKPC must be permitted to substitute new NGCC units in place of retired coal units in its emissions rate calculations. The CPP will only have potential of being achievable if states are provided with this flexibility in developing their plans.

## **VI. The Proposed Rule is Unlawful and Cannot Withstand Judicial Review**

The CPP is illegal. If it is not withdrawn, it will be struck by reviewing courts because (1) the CPP violates the Rural Electrification Act and 80 years of federal mandate for cooperatives to provide reliable, low-cost electricity to rural America; (2) EPA does not have the authority to promulgate the CPP; (3) the CPP violates CAA Section 111; (4) the CPP will result in a regulatory taking for coal units; and (5) EPA's proposal of new mass base limits on November 13, 2014 violates the Administrative Procedures Act.

## **A. CPP Violates the Rural Electrification Act Federal Mandate**

CPP violates the RE Act's federal mandate<sup>51</sup> that rural America receive reliable, low cost electric services because it will result in the significant reduction in operation of or retirement of nearly all coal-fired generation. EPA recognizes in the proposal that there is no technological option to reduce CO<sub>2</sub> emissions from power plants. Instead, EPA determines that the BSER for CO<sub>2</sub> emissions from EGUs is primarily the reduction or elimination of coal generation. Without this coal generation, the reliability of the country's electric grid is severely threatened. Coal generation is essential to serving this county's electric load, ensuring that the owners and operators of coal generation remain viable and preventing dramatic increases in electricity rates. Rural electric cooperatives are particularly vulnerable to the impacts of reduced coal generation. These impacts will fall on the poorest electric consumers in the country. This is unacceptable. Because of the CPP, the CAA and the RE Act (and its progeny) can no longer be read and applied harmoniously. The CPP and EPA's promulgation of the CPP is, therefore, illegal and must be withdrawn. The Notice of Data Availability published on October 30, 2014 in this docket seeks additional comments on CPP options that either will worsen or not address the rule's impacts on reliability and excessive costs.

## **B. EPA Does Not Have Authority to Promulgate CPP**

### **1. CAA Section 111(d) Prohibits CPP**

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<sup>51</sup> In 1935, President Franklin D. Roosevelt established the Rural Electrification Administration ("REA") by executive order and tasked it with bringing affordable electricity to rural communities across the country. While acknowledging the difficulty and expense of extending service to less densely populated areas of the country, President Roosevelt also recognized the vital importance of rural communities and considered the REA's mission to bring modern electric service to rural families as "one of the most important projects" of the nation. By passing the Rural Electrification Act of 1936, Congress formally established the REA as a federal agency and made its mission to power America's rural communities and to improve access to electricity a matter of statutory mandate. The REA became a part of the Department of Agriculture in 1939. Since 1939, Congress has consistently acted to ensure that the REA, and its successor the RUS, successfully provided electric service to the entire country.

Section 111(d)(1)(a) requires EPA to issue procedural regulations requiring states to submit a plan that

- (A) Establishes standards of performance for any existing source for any air pollutant
  - i. for which air quality criteria have not been issued or which is not included on a list published under section 7408(a) [the national ambient air quality program] of this title or *emitted from a source category which is regulated under section 7412 of this title* [the hazardous air pollutants program] but
  - ii. to which a standard of performance under this section would apply if such existing source were a new source.<sup>52</sup>

Despite this language which clearly prohibits the issuance of the CPP because EGUs are a source category regulated under Section 7412, EPA argues that a clerical mistake during the final reconciliation of the House and Senate bills for the 1990 CAA Amendments creates an ambiguity that allows the text of the statute to be ignored. EPA further argues that this interpretation qualifies for *Chevron* deference.<sup>53</sup> Both of these arguments are wrong and will not survive judicial review.

## **2. A Plain Reading of Statutory Amendments Shows that Only the Codified Version of Section 111(d) is Substantive**

Prior to the adoption of the 1990 CAA Amendments, Section 111(d) prohibited the regulation of “any air pollutant . . . included on a list published under [§] 112(b)(1)(A).”<sup>54</sup> As part of the 1990 Amendments, both the House and Senate passed bills altering this language. The House bill replaced the previous cross reference with the language currently in the U.S. Code and emphasized above that excludes EGUs from regulation under Section 111(d).<sup>55</sup> At the same time, the Senate bill replaced the same language with “112(b)” which restricts EPA from

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<sup>52</sup> 42 U.S.C. § 7411(d)(1) (emphasis added).

<sup>53</sup> EPA, Legal Memorandum for Proposed Carbon Pollution Emission Guidelines for Existing Electric Utility Generating Units 50 (2014) *available at* <http://www2.epa.gov/sites/production/files/2014-06/documents/20140602-legal-memorandum.pdf> [hereinafter Legal Memorandum].

<sup>54</sup> 42 U.S.C. § 7411(d) (1987).

<sup>55</sup> Pub. L. No. 101-549, § 108, 104 Stat. 2399 (1990).

regulating air pollutants that are regulated under Section 112.<sup>56</sup> The House-Senate conference committee failed to reconcile these two provisions and both were included in the enacted version of the 1990 Amendments.

An examination of the two amendments shows that, while the House amendment makes a substantive change to the power of the EPA to regulate under Section 111(d), the Senate amendment is a purely clerical change. The placement of the two amendments in the final bill shows the difference in how Congress viewed each of them. The House amendment was placed with other substantive amendments. Furthermore, it prohibits regulation of sources that was previously allowed. In contrast, the Senate amendment is in a section of the bill titled “Conforming Amendments” and merely updates the existing cross reference to agree with changes made elsewhere in the Senate bill.<sup>57</sup> The placement of the Senate amendment shows that it was merely a clerical revision and not intended to affect the substance of Section 111(d).

Since the Senate amendment merely updates the cross reference to conform to the other changes in the 1990 Amendments, it should not be given effect. Courts are hesitant to make sweeping changes in the law based on errors relating to conforming amendments unless Congress directly addressed the issue.<sup>58</sup> Even when discussing its current interpretation, EPA has acknowledged this view of the conflicting amendments and stated that the Senate amendment was “a drafting error and therefore should not be considered.”<sup>59</sup>

Thus, the Senate amendment should not be given effect thereby leaving the language of the House amendment, currently codified in the U.S. Code, to bar the current rule. The Supreme

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<sup>56</sup> *Id.* at § 302(a).

<sup>57</sup> *Id.*

<sup>58</sup> *See, e.g., Dir. of Revenue of Mo. v. CoBank ACB*, 531 U.S. 316, 323 (2001) (disagreeing with petitioner’s claim that a “Technical and Conforming Amendment” removed the ability of states to tax certain banks for cooperatives) (“It would be surprising, indeed, if Congress had eliminated this important fact *sub silentio*.”).

<sup>59</sup> Despite this frank acknowledgement, the EPA then went on to apply a similar twisted logic to what it uses here in an attempt to give effect to both amendments. 70 Fed. Reg. 15,994, 16,031-32 (Mar. 29, 2005).

Court has noted this interpretation, and in a case discussing other aspects of Section 111, stated “EPA may not employ § 7411(d) if existing stationary sources of the pollutant in question are regulated under . . . the ‘hazardous air pollutants’ program § 7412.”<sup>60</sup>

In *New Jersey v. EPA*, the D.C. Circuit found that the Clean Air Mercury Rule (CAMR) was invalid because mercury emissions from EGUs were already regulated by rules issued pursuant to CAA §112.<sup>61</sup> Because the court determined that EPA was already regulating emissions from EGUs under CAA §112, the court also found that CAMR was invalid. This ruling was based on the fact that mercury is a Hazardous Air Pollutant (HAP) listed under CAA §112 and EGUs were already a source category under Section 112, therefore HAPs (specifically, mercury) from EGUs could not be separately regulated under CAA §111.<sup>62</sup> As the D.C. Circuit found, emissions from EGUs are already regulated under CAA §112. Even if EPA’s view that the Senate amendment must be applied is correct, the result is not an ambiguity allowing for *Chevron*<sup>63</sup> deference to EPA’s view. *Chevron* deference is not applicable to the type of ambiguity EPA claims exists here. Just this past term, Chief Justice Roberts stated, “Direct conflict [between statutory provisions] is not ambiguity, and the resolution of such a conflict is not a statutory construction but legislative choice. *Chevron* is not a license for an agency to repair a statute that does not make sense.”<sup>64</sup> Instead, *Chevron* only applies when Congress delegates a particular matter to the agency for interpretation, and not to clerical errors like the

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<sup>60</sup> American Elec. Power Co. v. Connecticut, 131 S. Ct. 2527, 2537 n.7 (2011).

<sup>61</sup> 517 F.3d 574, 583 (D.C. Cir. 2008).

<sup>62</sup> See *New Jersey v. EPA*, 517 F.3d 574, 583 (D.C. Cir. 2008).

<sup>63</sup> See *Chevron U.S.A., Inc. v. NRDC*, 467 U.S. 837 (1984).

<sup>64</sup> *Scialabba v. Cuellar de Osorio*, 134 S. Ct. 2191, 2214 (2014) (Roberts, C.J., concurring).

one here.<sup>65</sup> Without *Chevron* deference, the EPA's strained interpretation will not withstand judicial review.

Furthermore, EPA's quest to give effect to both amendments does not lead to the ambiguity they are claiming. The two amendments can be reconciled with each other. The House amendment bars EPA from regulating, under Section 111(d), any air pollutants emitted from a source regulated under Section 112. The Senate amendment forbids regulation, under Section 111(d), of any air pollutants, whether or not they are emitted from a source category regulated under Section 112 that are not regulated under Section 112. EPA can give effect to both sections by reading the two amendments as prohibiting the regulation under Section 111(d) of any hazardous air pollutants regulated under Section 112 and any pollutants from a source regulated under Section 112. It is understandable that EPA does not favor this interpretation, however it is much more straightforward than the current EPA interpretation, which ignores the text of both of the provisions it is interpreting.

The 1990 CAA Amendments are 24 years old. The CAA itself is 20 years older than that. With this in mind, it is important to consider the warning the Supreme Court gave EPA about another sweeping interpretation of the CAA only 5 days after the issuance of the proposed rule. While striking down much of EPA's proposed regulation of greenhouse gases under the CAA Title V<sup>66</sup> and PSD<sup>67</sup> programs, the Court explained,

EPA's interpretation is also unreasonable because it would bring about an enormous and transformative expansion in EPA's regulatory authority without clear congressional authorization. When an agency claims to discover in a long-extant statute an unheralded power to regulate "a significant

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<sup>65</sup> See *Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1043-44 (D.C. Cir. 2001) ("Lest it obtain a license to rewrite the state, however, we do not give an agency alleging a scrivener's error the benefit of *Chevron* step two deference, by which the court credits any reasonable construction of an ambiguous statute.")

<sup>66</sup> Title V of the Clean Air Act governs operating permits

<sup>67</sup> Prevention of Significant Deterioration

portion of the American economy” we typically greet its announcement with a measure of skepticism. We expect Congress to speak clearly if it wishes to assign to an agency decisions of vast “economic and political significance.”<sup>68</sup>

The proposed rule seeks to regulate an expansive new stretch of the economy. Its basis rests on a series of questionable EPA statutory interpretations that not only grant the agency vast amounts of new power, but also directly contradict the apparent intent of Congress. It is, therefore, outside the scope of the power delegated to EPA in the CAA.

### **3. EPA cannot Regulate CO<sub>2</sub> under Section 111(d) without First Adopting a Valid Section 111(b) CO<sub>2</sub> NSPS**

Section 111(d)(1)(a)(iii) requires that EPA establish standards of performance for air pollutants emitted by any source “to which a standard of performance would apply if such source were a new source.”<sup>69</sup> Thus, EPA must issue standards of performance under Section 111(b) regulating the same types of pollutants from new sources within the same source category before it can issue a rule under Section 111(d). No valid Section 111(b) predicate rule regulating emissions of CO<sub>2</sub> from coal or gas-fired power plants exists. Therefore, the proposed rule exceeds EPA’s authority under Section 111(d).

EPA argues that two newly proposed rules will be finalized before the proposed rule and that each provides the requisite predicate rule. The first of these rules (the Proposed NSPS) establishes standards of performance for CO<sub>2</sub> emissions from new EGUs.<sup>70</sup> The second rule (the Proposed Modified and Reconstructed Source Rule) establishes standards of performance for

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<sup>68</sup> *Utility Air Regulatory Group v. E.P.A.*, 134 S. Ct. 2427, 2444 (2014) *quoting* *F.D.A. v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 159 (2000).

<sup>69</sup> 42 U.S.C. § 7411(d)(1)(A).

<sup>70</sup> Standards of Performance for Greenhouse Gas Emissions from new Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 1430 (Jan. 8, 2014).

CO<sub>2</sub> emissions from certain modified and reconstructed EGUs.<sup>71</sup> Even if finalized, neither of these rules can serve as the predicate rule for the proposed rule because each is illegal.

The Proposed NSPS relies on the utilization of unproven Carbon Capture and Storage (CCS) technology as its standard of performance. CAA Section 111(a)(1) requires that any “standard of performance” be based on technology that has been “adequately demonstrated.”<sup>72</sup> Adequately demonstrated requires that a standard of performance “has been *shown* to be reasonably reliable, reasonably efficient and . . . reasonably expected to serve the interests of pollution control without becoming exorbitantly costly in an economic or environmental way.”<sup>73</sup>

CCS is not currently in operation at any commercial EGU in the United States. Although a few small experimental sites exist, CCS certainly has not been “adequately demonstrated.” This, along with a number of other fatal flaws, makes the Proposed NSPS invalid and ripe for post-finalization challenge. Since an invalid rule cannot serve as the required Section 111(d) predicate rule, the proposed rule is likewise invalid.

The Proposed Modified and Reconstructed Source Rule also cannot serve as the Section 111(d) predicate rule. In the Proposed Modified and Reconstructed Source Rule EPA treats modified and reconstructed sources as both new and existing sources. It does this by requiring that sources subject to the rule are also subject to any applicable CPP requirements. As defined by the CAA, once a source is modified it becomes a new source subject to NSPS.<sup>74</sup> An existing source is “any stationary source *other than a new source*.”<sup>75</sup> A source cannot simultaneously be both. The CPP rule applies only to existing sources. Thus, if EPA decides to treat modified and

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<sup>71</sup> Carbon Pollution Standards for Modified and Reconstructed Stationary Sources: Electric Generating Units, 79 Fed. Reg. 34,960 (June 8, 2014).

<sup>72</sup> 42 U.S.C. § 7411(a)(1).

<sup>73</sup> *Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d 427, 433 (D.C. Cir. 1973) (emphasis added).

<sup>74</sup> 42 U.S.C. § 7411(a)(2).

<sup>75</sup> *Id.* § 7411(a)(6).

reconstructed sources as existing sources by making them subject to CPP requirements as well as NSPS, then EPA cannot simultaneously claim that the Proposed Modified and Reconstructed Source Rule applies to new sources and is the predicate rule for Section 111(d) purposes.

#### **4. The CPP Ignores Jurisdictional Limits**

EPA's proposed rule reaches far beyond all prior regulation under the CAA to effectively regulate the entire electric power sector. Not only is EPA acting outside of EPA's legal authority, the CPP directly conflicts with other programs authorized by Congress that are specifically authorized to regulate these areas.

The FPA gives the FERC exclusive jurisdiction over the interstate sale and transmission of electricity.<sup>76</sup> The authority delegated to FERC includes the ability to control the dispatch of power plants and electric utility systems. FERC acts through the imposition of rates and tariffs that are approved for ISOs and RTOs. These organizations organize and operate the markets and transmission grid in a certain area. FERC also relies on the NERC to ensure reliability of the bulk power system. Energy cannot be stored in large quantities, so plant operators have to enter into agreements covering what plants are operating and when. For the purposes of these comments, the important thing to know is that the terms and conditions in the agreements covering these arrangements are filed with, and approved by, FERC alone. Operators are bound by FERC approvals and must implement the rates, terms, and conditions of their FERC tariffs.

EPA's proposed rule imposes measures that act beyond the fence line of facilities to control how and when coal-fired EGUs are operated. The rule also contemplates state regulations that will govern the re-dispatch of EGUs to meet the emissions targets. States do not have the authority to do this. In the FPA, Congress made it clear that where FERC has lawfully

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<sup>76</sup> 16 U.S.C. § 824.

acted to ensure just and reasonable rates, states no longer have the power to act.<sup>77</sup> Thus, the environmental dispatching of EGUs required under the proposed rule cannot be implemented by the states because it is within FERC's exclusive authority and any attempt by states to impose requirements contrary to FERC rules violates the FPA and the Supremacy Clause of the Constitution.

#### **5. EPA's Endangerment Finding under Title II is not Adequate to Justify Regulating Emissions under Title I, Section 111**

EPA's Endangerment Finding cited in the proposed rule does not satisfy the requirements of Section 111(b)(1)(A) and therefore cannot serve as the basis for the proposed rule. Section 111(b)(1)(A) requires that EPA publish a list of categories of stationary sources and add a new source to the list if "in his judgment it causes, or contributes *significantly* to" air pollution.<sup>78</sup> This is a higher standard than the 2009 Endangerment Finding was subject to. The 2009 Endangerment Finding was issued under Section 202(a) which does not have the word "significantly" in it.<sup>79</sup> In issuing the 2009 Endangerment Finding, the EPA argued that the Section 202(a) standard did not require them to show that the sources in the finding were "the sole or even the major source of the problem" because "[u]nlike other CAA provisions, [Section 202(a)] does not require significant contribution."<sup>80</sup> EPA then listed Section 111(b) as one of the "other" provisions.<sup>81</sup>

Here, EPA argues that far from needing to show more to be able to apply Section 111(b), it does not need to show anything at all. In its Legal Memorandum, rather than cite any authority for this position, EPA simply states that it is currently saying the same thing in other proposed

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<sup>77</sup> See *Mississippi Power & Light Co. v. Mississippi*, 487 U.S. 354 (1988).

<sup>78</sup> *Id.* § 7411(b)(1)(A).

<sup>79</sup> *Id.* § 7521(a).

<sup>80</sup> Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496, 66,506 (Dec. 15, 2009).

<sup>81</sup> *Id.*

greenhouse gas rules and that it is not seeking comment on the issue in this rulemaking.<sup>82</sup> Yet, EPA recently announced that, due to a court order, it is beginning the process under CAA Title II of determining whether or not greenhouse gas emissions from aircraft “endanger public health or welfare.”<sup>83</sup> If the 2009 Endangerment Finding is broad enough to apply to the proposed rule, logic would expect that it is broad enough to apply to another Title II rulemaking. This is especially true in light of the fact that the aircraft endangerment finding does not require “significant” contributions. EPA’s failure to conduct an endangerment finding under Title I, and its failure to explain when and why endangerment findings are required, is arbitrary and capricious and will not survive judicial review.

**C. Even if the EPA has the authority to promulgate the proposed rule, the proposed rule is still invalid because it fails to conform to the requirements of the Clean Air Act**

Rules promulgated under Section 111 impose performance standards using BSER. When making a BSER determination, EPA must take into account the system’s cost, health and environmental impact, and energy requirements. The proposed rule fails to meet the requirements of BSER as defined in the CAA for four reasons. First, Building Blocks 2, 3, and 4 cannot be standards of performance for air pollutant emissions from existing sources achievable through the application of BSER. Second, under Section 111(d) EPA cannot directly impose standards of performance and the CO<sub>2</sub> emissions rate goals on states; EPA can only establish a procedure under which states develop standards of performance and state compliance plans. Third, the CPP is an impermissible attempt by EPA to reduce the economic viability of coal-fired EGUs in an attempt to regulate the emissions of other air pollutants. Finally, EPA ignores

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<sup>82</sup> Legal Memorandum at 28.

<sup>83</sup> EPA, U.S. Aircraft Greenhouse Gas Rulemaking Process (Sep. 15, 2014) *available at* <http://www.epa.gov/otaq/documents/aviation/us-ghg-endangerment-ip-9-3-14.pdf>.

Section 111(d)'s requirement that states may consider remaining useful life of the affected EGUs when developing standards of performance.

### **1. The Building Blocks are not Performance Standards**

Under Section 111 performance standards are “are emissions standards which reflect the degree of emissions limitation achievable through the application of the best system of emissions reduction (BSER) which the Administrator determines to be adequately demonstrated.” Thus, Section 111 only authorizes that regulation of air pollutants through achievable emissions limitations on affected sources (in this rule affected EGUs). The Building Blocks do not impose achievable emissions limitations on affected EGUs. Therefore, the Building Blocks cannot be standards of performance. EPA admits this fact in the CPP preamble and instead seeks to regulate unit efficiency and reshape the entire electricity market.

Section 111(d) allows EPA to “establish standards of performance for any *existing source*.”<sup>84</sup> Existing sources are defined as stationary sources, which are defined as “any building structure, facility, or installation.”<sup>85</sup> Thus, emissions controls under Section 111(d) must apply directly to “a single building, structure, facility or installation,” not to a “combination of such units.”<sup>86</sup> EPA has consistently administered programs under Section 111(d) to apply to single sources of emissions.<sup>87</sup> In fact, even when using Section 111(d) to regulate sources that are also covered under Section 129, which requires imposition of more stringent maximum achievable control technology, EPA still has not regulated outside the fence activities.<sup>88</sup> Building Blocks 2,

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<sup>84</sup> 42 U.S.C. § 7411(d)(1)(A).

<sup>85</sup> *Id.* at § 7411(a)(3), (6).

<sup>86</sup> *ASARCO, Inc. v. E.P.A.*, 578 F.2d 319, 326 (D.C. Cir. 1978).

<sup>87</sup> *See, e.g.*, Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Sewage Sludge Incineration Units, 76 Fed. Reg. 15372 (Mar. 21, 2011).

<sup>88</sup> *Id.*

3, and 4 only regulate activities occurring outside the fence of a single installation and are not BSER.

It is clear that by requiring the shifting of power generation from coal-fired EGUs to natural gas-fired EGUs, nuclear generating plants, and RE sources, the Building Blocks act to regulate activities outside of the traditional facility-based focus of Section 111. Rather than focus on measures to reduce emissions by acting at the source, the proposed rule seeks to shift generation from coal-fired EGUs to other types of generation. EPA's approach in the proposed rule is to establish a portfolio of emissions reduction measures, most of which operate outside the fence. This effectively regulates all electric power generating facilities as one. Thus, the proposed rule's emissions targets stray far from the source category of fossil-fuel-fired EGUs and apply to the electricity generation sector as a whole. Such a widespread approach is incompatible with the text of Section 111 and its focus on individual sources.

In addition, Section 111(d) does not authorize EPA to expand its jurisdiction to regulate the demand for a good, service, or product. By requiring increases in end-user efficiency and other efforts to reduce the demand for electricity, this is exactly what Building Block 4 seeks to do. If this authority is upheld, there is little that is beyond the scope of Section 111(d). Electricity is required for almost all economic activity and most of that electricity comes from existing units. The design of Block 4 is far beyond what Congress envisioned when it enacted the CAA. It acts to regulate countless small activities long before they impact the electricity grid. This is simply too much of an overreach to be legal under Section 111(d) or any other source of EPA's authority.

## **2. EPA cannot Directly Impose Standards of Performance on States**

Section 111(d) limits EPA to (1) establishing procedures for states to use while determining the standards of performance for each source and (2) determining an adequately-

demonstrated system of emission reduction for States to rely on in developing their own standards.<sup>89</sup> In the proposed rule, EPA goes beyond this authority to instead establish firm state CO<sub>2</sub> emissions rate goals leaving the role of the states to merely comply with the rates. This is a clear violation of the plain text of the statute and the principles of federalism embodied within the CAA. EPA has recognized this statutory structure and the fact that EPA is limited to establishing “guidelines” rather than the “limitations” that the states are to develop to make it clear that the guidelines were not binding requirements, but rather, “criteria for judging the adequacy of State plans.”<sup>90</sup>

Sections 111(d)’s implementing regulations state that EPA “will provide information for the development of state plans.”<sup>91</sup> The regulations describe the types of information EPA will provide as: information relating to the public health and welfare, descriptions of applicable systems of emission reduction, the time normally expected to be necessary for setting up new control systems, a sample emission guideline, and other information EPA feels will help the states develop their own plans.<sup>92</sup> Nowhere do the regulations state that EPA will do more than provide information to the states. The regulation clearly does not authorize EPA to issue binding state-wide emission rate goals.

### **3. The CPP is an impermissible regulation of emissions that are regulated elsewhere in the CAA**

Instead of setting standards of performance, EPA adopts the reduction or retirement of coal generation as the standard of performance for affected EGUs. While not setting CO<sub>2</sub> emissions limitation, EPA takes credit for reducing other emissions associated with coal-fired

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<sup>89</sup> 42 U.S.C. § 7411(d)(1).

<sup>90</sup> 40 Fed. Reg. at 53, 343 (Nov. 17, 1975).

<sup>91</sup> 40 C.F.R. § 60.22.

<sup>92</sup> *Id.*

EGUs such as mercury, SO<sub>x</sub>, NO<sub>x</sub>, and PM by reducing coal generation. These air pollutants are regulated elsewhere in the CAA and cannot justify the CPP. In fact, many of the coal-fired EGUs impacted by the proposed rule have recently installed new control technology to reduce these other air pollutants as required by EPA's other regulations. These new controls are significant capital investments that will be stranded as a result of the CPP.

#### **4. EPA Ignores Section 111(d)'s Requirement that States be Allowed to Consider the Remaining Useful life of Affected EGUs**

Section 111(d) requires that states be allowed to consider the remaining useful life of a covered source when creating a standard of performance. In the proposed rule, EPA opines that the remaining useful life of a facility should not affect the overall performance goals for states. EPA justifies this position by stating that states are free to adjust state compliance plans for any particular unit to account for remaining useful life considerations. While states are undoubtedly authorized by the CAA to make these types of determinations, without the ability for states to seek relief from EPA's CO<sub>2</sub> emissions rate goals, there is little likelihood that EGUs will get meaningful remaining useful life relief. A meaningful consideration of remaining useful life requires that EPA provide relief from the state performance goals. This relief will allow and encourage states to thoroughly consider remaining useful life when implementing standards of performance.

#### **D. CPP is a regulatory taking for many coal-fired units**

Without relief for remaining useful life, many older EGU's will be forced to significantly reduce operations or retire. By forcing significant reductions in operation and retirements, the CPP is a clear regulatory taking of these units requiring government compensation. The test for a regulatory taking is easily met. When determining if a regulatory taking has occurred, courts consider (1) the economic impact of the regulation on the property owner; (2) the extent to which

the regulation interferes with distinct investment-backed expectations; and (3) the character of the government's invasion of the property interest.<sup>93</sup>

#### **E. The Rate to Mass Technical Support Document Violates the Administrative Procedures Act**

On November 13, 2014, EPA issued a Technical Support Document regarding the translation of emission rate-based CO<sub>2</sub> goals to mass-based equivalents (TSD on Rate to Mass).<sup>94</sup> When EPA issued its TSD on Rate to Mass, it set new mass-based limits for each state. These new limits effectively revised the CPP. However EPA neglected to re-propose the rule after this substantial revision. EPA's issuance of the TSD on Rate to Mass without re-proposing the CPP violates the Administrative Procedures Act.

EPA is sidestepping the procedures that were established to ensure that the regulated community has adequate time to provide meaningful comments on proposed rules. Eighteen days is not sufficient time to provide in depth analysis and comment on this critical revision to the CPP. EPA must re-propose the CPP with the revised limitations from the TSD on Rate to Mass and allow adequate time for comment.

#### **VII. EKPC's Analysis of EPA's Goal and Compliance Calculations**

Throughout the CPP, EPA makes calculation errors that directly impact the proposed goals. For example, substantially more natural gas generation will be required to meet the CPP's goals than EPA estimates. EPA's calculations assume a 400 TWh/year shift to existing NGCC generation from coal (376 TWh/year) and older oil-gas steam (64 TWh/year). And EPA estimates that the NGCC market will increase from 29 percent of the country's energy in 2013 to 33-34 percent of the nation's energy from 2020-2030. However, for NGCC to be 35 percent of the

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<sup>93</sup> *Lingle v. Chevron U.S.A. Inc.*, 544 U.S. 528, 538 (2005) *citing* *Penn. Cent. Transp. Co. v. City of New York*, 438 U.S. 104 (1978).

<sup>94</sup> 79 Fed. Reg. 67,406 (Nov. 13, 2014)

country's total energy in 2020, 39 percent in 2030 and 49 percent 2040, an additional 400-450 TWh/year increase in NGCC generation will be required.<sup>95</sup> With these miscalculations underestimating the needed NGCC, EPA's CPP also underestimates the substantial investment in NGCC that will be necessary.

EPA's RE calculations are also unrealistic. In the CPP, EPA assumes that qualifying RE generation will increase from 213 TWh/year in 2012 to 281 TWh/year by 2020 and 523 TWh/year by 2030.<sup>96</sup> This substantial increase far exceeds the EIA's RE forecast for growth from 202 TWh/year in 2012 to 275 TWh/year in 2020 to 317 TWh/year in 2030,<sup>97</sup> and is also much greater than the projection of 356 TWh/year by 2030 included in EPA's own Regulatory Impacts Assessment.<sup>98</sup> As proposed, EPA's RE goals do not allow the inclusion of new biomass, new landfill gas, new coal-bed methane and new hydro as options in the portfolio approach. EPA's RE calculations are not an accurate representation of the existing RE options because these sources are not included. Existing Renewable Portfolio Standards (RPS) at the state level, on which EPA based its RE goals, include these options. EPA must include all these RE options in the portfolio approach as states employ more than just wind and solar in their RPSs. EKPC should also be allowed to count new and existing combustion turbines (CTs) in the portfolio compliance plans as well as its landfill gas to energy projects.

EPA's calculations of projected EE savings are similarly flawed.

## **VIII. The CPP's Four Building Blocks Are Flawed and Cannot form the Basis for BSER**

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<sup>95</sup> Potential Reliability Impacts of EPA's Proposed Clean Power Plan, Initial Reliability Review, North American Electric Reliability Corporation (Nov. 2014), at p. 24 (*citing* Energy Venture: FUELCAST – The Long-Term Outlook 2014 (Oct. 2014)).

<sup>96</sup> Potential Reliability Impacts of EPA's Proposed Clean Power Plan, Initial Reliability Review, North American Electric Reliability Corporation (Nov. 2014), at p. 11.

<sup>97</sup> *Id.* (*citing* Annual Energy Outlook 2013 (EIA April 2013)).

<sup>98</sup> *Id.* (*citing* Regulatory Impact Analysis for the Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants (EPA June 2014), at Table 3-11, p. 3-27).

## **A. Building Block 1 – Efficiency Improvement**

Generally speaking, coal-fired units provide their best heat rates and highest efficiency of energy conversion at full load. In an unconstrained economic dispatch, the lowest cost units dispatch in order from lowest cost best efficiency to highest cost lowest efficiency of conversion of coal fuel to electricity. Having said this, coal-fired units not running at full load or less than full load degrade in heat rate based on their unit specific heat rate conversion curves. For coal-fired units to achieve their best heat rates, the units must be dispatched at full load or near full load into the market.

Forcing gas-fired units into the bulk power market may push lower cost, higher heat rate coal-fired units out of their best efficiency points of operation to make room for natural gas-fired units to operate, negating heat rate improvements. Operating units at their highest megawatt rating is the most efficient point of operation. Forcing gas-fired units into the bulk electric market is perverse to economic dispatch and drives up heat rates and cost.

The highest net benefits of heat rate improvements are achieved near or at full load. The aggregate effect of heat rate improvements depends on where the unit operates on the energy conversion curve (or heat rate curve). If the unit operates at less than full load, for every megawatt created there is less of an effect of the heat rate improvement. Utilities investing in heat rate improvement projects need to operate close to full load in order to meet the capital investment expectations of improved performance.

The impact of heat rate projects degrades over time, even with best maintenance practices employed. Pulverized coal mill grinding zones, burners, boiler surface cleanliness, air heater performance, turbine valves, diaphragms, turbine packing and blading all degrade with normal use. Normally scheduled maintenance outages return equipment back to manufacturers design

and efficiency expectations. Simply put, a coal-fired utility cannot hold an average of six percent heat rate improvement by means of CO<sub>2</sub> emissions computation.

Heat rate improvement projects gains are generally swallowed up by the addition of more environmental control equipment. EPA's Title IV Acid Rain provisions, Clean Air Interstate Rule, CSAPR, MATS, and Best Available Retrofit Technology rules have added environmental control equipment over the past 20 years that increased net overall heat rates on coal fired units. Each time the industry is required to reduce emitted pollutants, any and all gains to boiler and turbine efficiency are erased by parasitic load. As parasitic load rises to serve the environmental control equipment, the overall efficiency of the boiler turbine degrades. With the addition of wet flue gas desulfurization equipment, the net effect of CO<sub>2</sub> production to the atmosphere rose. Scrubbing sulfur dioxide under the guise of EPA rules increased the emissions of CO<sub>2</sub>. During the scrubbing process, CO<sub>2</sub> is liberated. Installing additional environmental control equipment requires coal-fired units to burn more coal to serve the new equipment's energy requirements.

The combinations of several heat rate improvement projects by percentage are not additive in nature for coal fired units. The combination of several projects by percentage by the rules of mathematics cannot be distributive and additive. By way of example, a two percent heat rate improvement project cannot be added to another heat rate improvement project of three percent to result in a sum total of five percent for the unit. The net effect of both projects will likely be less than the sum total. Industry testing of unit performance has proved this many times and usually is guaranteed by the vender at one specified high load. This is not to say that heat rate improvement projects do not work. Rather, heat rate improvement projects' highest benefits are seen at full load or its highest efficiency point.

The six percent heat rate improvement EPA proposes as Building Block 1 is unachievable for existing fossil fuel-fired EGUs and EPA does not provide adequate technical justification for this proposal. There simply are no efficiency projects that EGUs can perform to achieve a six percent improvement in heat rate. If there were such projects, EGU owners would have completed them already. The cooperative business model compels and incentivizes heat rate improvement projects in a regulated environment. The fact that EPA found past heat rate improvements at existing EGUs does not demonstrate that future heat rate improvements can be performed to reduce CO<sub>2</sub> emissions. Past heat rate improvement projects only illustrate the fact that the utility industry has a strong incentive to perform heat rate improvements and these improvements have already been completed.

The remaining available plant efficiency improvement for our cooperative will only achieve about one percent efficiency improvement and the proposed CPP will force those improvements to be made.

EPA relies on a 2009 Sargent & Lundy (S&L) study to support its finding that best operating practices and equipment replacements can achieve a greater than six percent heat rate improvement (or even a six percent improvement). S&L never intended for the 2009 study to be used to predict the technical feasibility of a six percent heat rate improvement across the entire fleet of fossil fuel-fired EGUs. In a October 15, 2014 letter to Rae Cronmiller at NRECA (attached), S&L clarified that the “2009 Report does not conclude that any individual coal-fired EGU or any aggregation of coal-fired EGUs can achieve 6% [heat rate improvement] or any broad target, as estimated by the EPA.” S&L also notes that the only “technically appropriate method to properly evaluate potential [heat rate improvement] is to conduct a unit-by-unit evaluation.” Obviously, EPA’s reliance on the S&L study is misplaced and cannot form the

technical basis for Building Block 1. S&L also notes that “many of the options for [heat rate improvement] listed in our 2009 report have triggered New Source Review actions by EPA and others.” EPA provides no NSR relief in the proposal.

EPA’s unrealistic six percent heat rate improvement sought under Building Block 1 is based on an incomplete analysis that fails to look at the complete picture. EPA’s analysis does not adjust for the following factors that have a significant impact on efficiency: “(1) subcritical versus supercritical boiler designs; (2) fluidized bed combustion, integrated gasification combined-cycle (IGCC), and pulverized coal; (3) unit size and age; and (4) coal quality variations in moisture and ash.”<sup>99</sup> Almost all projects improving operating efficiency have already been completed because the power industry has an incentive to operate its units at peak efficiency, so analyses must be undertaken to determine if there are remaining opportunities for heat rate improvement projects.<sup>100</sup> Even though many facilities have applied basic efficiency improvements without being obligated to do so by the CPP, the EGUs do not get credit for the improvements made prior to 2012 and would still need to meet the six percent heat rate improvements to comply with the BSER for Building Block 1. EPA’s refusal to consider past projects is unreasonable and unjustified. The proposed CPP punishes EGUs like EKPC that have been proactive and worked diligently to ensure that the units operate efficiently.

Given the lack of heat rate improvement projects available, EPRI estimates that there may be opportunities to achieve heat rate improvements in the range of 0.5 to 5 percent; however this would not rise to the six percent average heat rate improvement sought by EPA in Building

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<sup>99</sup> See Potential Reliability Impacts of EPA’s Proposed Clean Power Plan, Initial Reliability Review, North American Electric Reliability Corporation (Nov. 2014) at p. 8.

<sup>100</sup> See Potential Reliability Impacts of EPA’s Proposed Clean Power Plan, Initial Reliability Review, North American Electric Reliability Corporation (Nov. 2014) at p. 8.

Block 1<sup>101</sup>. EPA's Building Block 1 proposal is further confused by the agency's proposal to use gross heat rate data when estimating heat rate improvement-related CO<sub>2</sub> mitigation because this calculation method is inconsistent with the net emission accounting method used in computing state goals.<sup>102</sup> Inconsistent calculations cause confusion and inaccuracies.

In addition to overestimating the amount of plant efficiency available, costs notwithstanding, the proposed rule contemplates adding more generation from non-coal sources. In order to meet the proposed emission rate targets this new, non-coal, generation displaces existing coal fired generation. Displacing existing coal generation will reduce overall coal plant capacity factors and diminish heat rate improvement effective gains. Coal plants were designed to achieve greatest efficiency when producing high output around the clock. The goal of improving plant efficiencies but at the same time shifting away from high capacity factors is perverse and contradictory.

#### **B. NSR Relief for Heat Rate Improvement Projects**

Heat rate improvement projects to increase efficiency of coal-fired units will likely trigger NSR under EPA regulations. Projects that increase unit efficiency produce liabilities for the industry and are counterintuitive to basic engineering principles. Projects that debottleneck, lift unit constraints from energy conversion, improved cleanliness of unit interior components, packing that directs more energy to the production of power, improved turbine blading to assist conversion of steam energy into electricity all fall into a libelous category within EPA enforcement under the rules of New Source Review. The industry has been penalized billions of dollars under NSR when companies sought and performed heat rate improvement projects.

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<sup>101</sup> Comments of the Electric Power Research Institute on Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (Oct. 20, 2014), at p. 3.

<sup>102</sup> Comments of the Electric Power Research Institute on Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (Oct. 20, 2014), at p. 3.

Under the CPP for this to be incentivized, EPA must earmark CO<sub>2</sub> reduction projects as excluded under NSR or companies will continue to choose not to perform heat rate improvement projects.

Over the past 15 plus years EPA and third-parties have undertaken an NSR enforcement effort targeted at boiler maintenance and projects that improved boiler efficiency. While the CPP assumes significant future efficiency projects, it provides no relief from potential NSR enforcement actions. EPA recognizes that triggering NSR could be a costly byproduct of projects undertaken to make the heat rate improvements required by Block 1.<sup>103</sup> EPA states that the flexibility of the rule will allow states to structure their plans so facilities will not need to undergo NSR.<sup>104</sup> However, as discussed above, it is unlikely that states will be able to easily meet their emissions reduction goals and will not have the flexibility EPA imagines. To resolve this problem, EPA should amend its proposed rule and make it clear that heat rate improvements made to comply with any finalized version of the proposed rule will not trigger NSR. EPA must also make it clear that any improvement projects undertaken to comply with the proposed rule are excluded from NSR as routine maintenance, repair and replacement. To the extent that these projects undergo an emissions increase analysis, the NSPS maximum achievable emissions rate test should be applied. This test is only triggered by increases in the maximum achievable emissions rate before and after the physical change.

EKPC's business model incentivizes heat rate improvement projects. Over several decades, EKPC has worked to improve heat rates for our operating coal-fired units. EKPC unfortunately became the EPA poster child for EPA's NSR enforcement and received the highest levied fine on the industry in 2007, setting the bar for other utilities. EKPC cannot achieve an additional six

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<sup>103</sup> 79 Fed. Reg. at 34,928.

<sup>104</sup> *Id.*

percent heat rate improvement for its existing fleet. It would be difficult and very expensive for EKPC to achieve another one percent efficiency improvement for its coal-fired fleet. Most all of the gains have been achieved and eroded with the addition of substantial environmental controls on Spurlock units 1, 2 and Cooper units 1 and 2. Despite the hits to heat rate efficiency by the addition of several environmental controls, our existing fleet operates economically, reliably, performs efficiently and stands as one of the cleanest in the country as compared to other dispatching units in the bulk electric market.

**C. Building Block 2 – Re-dispatch from Coal Generation to a Goal of 70% NGCC Generation Capacity Factor**

The proposed re-dispatch is completely contrary to the current generation market and will force the lowest cost generation to be dispatched last and higher cost generation to be dispatched first. This market is controlled and regulated by many agencies (FERC, NERC, the Commodities Futures Trading Commission (CFTC), RTOs/ISOs). EPA and state environmental agencies cannot order the market to become uneconomical. FERC's role under the Federal Power Act (FPA) is to ensure that the power market is fair and that just and reasonable rates are maintained. In its Integrated Planning Model (IPM) EPA calculates the cost of carbon to be between \$40 and \$50/ton of CO<sub>2</sub> and determines that this range of cost can be modeled to result in the market shift that Building Block 2 is trying to force. EPA, however, cannot incorporate this carbon proxy cost into the market price of electricity. Entities managing the energy market have worked diligently to eliminate volatility and instability, yet the market shifts essentially required by EPA will eliminate that stability.

Existing NGCC units were not designed or permitted to operate at high capacity factors. EPA uses average capacity factors in the goal calculations but because of reserve margin requirements and peaking loads, existing NGCC units do not have the availability that EPA

assumes. EPA uses nameplate capacity in the Building Block 2 goal calculation which also overstates availability. Summer or winter dependable capacity is a much better measure of top end capacity.

Coal-fired plants are more reliable than NGCC. Coal fired units are built from heavy iron and steel for reliability purposes. The technology is mature and dependable. Should a coal-fired unit experience a forced outage, generally speaking, it will be a 3 to 5 day outage. A local veteran work force becomes available to repair the unit in a short time. In contrast, if a natural gas-fired combustion turbine unit experiences a forced outage, it is likely a 3 to 5 month outage with many unexpected expenses. A local veteran workforce is not available. If the utility industry is expected to rely upon gas-fired combustion turbine technology, the industry will have to install twice as many units as anticipated by EPA. Spare units will be necessary to ensure that sufficient energy can be generated at all times, particularly during prolonged maintenance outages. Gas-fired technology in our industry is not as mature and reliable as coal-fired generation.

The transmission system will have to undergo extensive upgrades in order to shift supply to predominantly NGCC. EKPC has no existing NGCC capacity to which it can re-dispatch and the rule as proposed does not allow re-dispatch or substitution of new NGCC in the compliance equation. Therefore, Building Block 2 forces EKPC into the market to address the generation gap and NERC has determined that the CPP will cause a generation shortage. EPA assumptions regarding the capability of the existing NGCC fleet fail to consider the unit by unit variations of this fleet.

The natural gas infrastructure that supplies the NGCC facilities is entering a period of large and sustained capital expenditure, around \$14.2 billion per year from 2014-2035 according

to the Interstate Natural Gas Association of America.<sup>105</sup> Even with this level of capital spending it will be important to ensure that these additions aid the availability of natural gas generating assets. Infrastructure and supply issues cannot be corrected between now and 2020 or 2030.

Historically, natural gas units provide diversity to the power grid, with NGCC units following the electricity load throughout the day. Natural gas units are best suited to follow load, rather than serve as base load units.<sup>106</sup> Employing diverse fuel sources (coal-fired in addition to NGCC and renewables, when available) ensures a secure and reliable energy supply.<sup>107</sup> Natural gas-fired capacity is expected to increase, with the addition of 44.6 GW of NGCC capacity during the next decade.<sup>108</sup> And by 2024, under the CPP, 42 percent of the on-peak resource mix will be natural gas.<sup>109</sup> Reduced reliance on coal-fired power, combined with increased reliance on NGCC, will decrease diversification of fuel sources which will constrain the power grid's ability to respond to unforeseen events such as regional transfers, labor strikes, unplanned outages and abnormal weather conditions.<sup>110</sup>

Abnormally cold temperatures impact fuel delivery and the ability of the power grid to run reliably. Reduced diversity in the power supply restricts the power sector's ability to respond to these events. During the 2014 polar vortex the following fuel delivery complications were encountered: (1) natural gas interruptions (supply injection, compressor outages, and one pipeline explosion); (2) oil delivery problems; (3) inability to procedure gas; and (4) fuel oil

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<sup>105</sup> North American Midstream Infrastructure through 2035: Capitalizing on our Energy Abundance (March 2014).

<sup>106</sup> See Potential Reliability Impacts of EPA's Proposed Clean Power Plan, Initial Reliability Review, North American Electric Reliability Corporation (Nov. 2014) at p. 9.

<sup>107</sup> See Potential Reliability Impacts of EPA's Proposed Clean Power Plan, Initial Reliability Review, North American Electric Reliability Corporation (Nov. 2014) at p. 9.

<sup>108</sup> See 2014 Long-Term Reliability Assessment, North American Electric Reliability Corporation (Nov. 2014) at p. 18.

<sup>109</sup> See 2014 Long-Term Reliability Assessment, North American Electric Reliability Corporation (Nov. 2014) at p. 18.

<sup>110</sup> See Potential Reliability Impacts of EPA's Proposed Clean Power Plan, Initial Reliability Review, North American Electric Reliability Corporation (Nov. 2014) at p. 9.

gelling.<sup>111</sup> Low temperatures during the polar vortex hindered power generation in the following ways: (1) low temperature limits for wind turbines; (2) icing on hydro units; (3) failed auxiliary equipment; (4) stress of extended run times; and (5) frozen instrumentation.<sup>112</sup>

#### **D. Building Block 3 – Further Shifting Generation to Renewables**

Future assumptions of dramatic renewable growth are unsupported by any market analyses or the realities of generation market. A key to facilitating the development of RE resources to meet state CO<sub>2</sub> targets is that RE MWh need to be recognized in the state in which the RECs are retired, not the states in which they are generated. Corraling the MWh in the states where the RE is generated will encourage inefficient use of capital. States will likely work with stakeholders within their footprint initially to style SIPs that allow their stakeholders to comply with the CPP. This will be a difficult task because different stakeholder will need different measures to achieve compliance, and strategies that help one entity comply will put another entity in jeopardy of non-compliance. States are not likely to turn their attention to regional compliance until they have crafted their SIPs. Forcing RE to reside within the state as the CPP currently proposes, ignores the fact that areas of the country vary in their ability to generate RE. States that do not have weather that is favorable to production of energy from RE need to be able to purchase RE from outside their borders and be able to use the MWh in the denominator in order to meet state CO<sub>2</sub> targets. It's naïve to think that states can reach agreement amongst their internal stakeholders and achieve regional agreements in one year's time. The final rule must contemplate the transfer of the RE across state borders for new renewable projects. EKPC believes that recalculation of the current rates would be overly

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<sup>111</sup> See 2014 Long-Term Reliability Assessment, North American Electric Reliability Corporation (Nov. 2014), at p. 20.

<sup>112</sup> See 2014 Long-Term Reliability Assessment, North American Electric Reliability Corporation (Nov. 2014), at p. 20.

complex for the exiting RE but new RE should be handled differently than existing. Long term contracts are typically necessary to obtain financing for RE projects. The financial burden for new RE projects will ultimately rest with the load that secures these projects' financing and the benefit of the MWh produced by these assets should accrue to the customers that shoulder the cost burden. To style the rule any other way will stifle new RE projects and cause capital to be invested inefficiently when capital will already be scarce because of the required duplication of assets necessary to meet reliability and environmental requirements.

Generation from RE will vary from year to year and make compliance with the CPP difficult as a result of different weather. The CPP should allow states and utilities to claim a levelized generation number from RE to make measuring compliance with the rule more predictable and practicable. This approach will also encourage investment in RE. EKPC also proposes an alternative concept of using a rolling 3 year historical average. This would protect the utility against compliance failures from bad weather in a particular year, while muting criticism that a levelized number may be 'gamed.'

EPA's Building Block 3 clearly favors wind and solar. EKPC encourages the EPA to allow states to consider other forms of energy production that emit CO<sub>2</sub> but are beneficial to the environment, at a rate that would be beneficial to compliance. EKPC further supports a flexible process that will allow existing, new and/or as yet unproven energy technologies to be included in Kentucky's qualified technologies under the CPP in future. EKPC encourages EPA to allow states to employ technologies that provide environmental benefits beyond the CPP to be included in CPP compliance measures. A broad collection of technologies under Building Block 3 should be allowed, such as:

- Landfill Gas to Energy facilities
- Alternative energy resources for co-firing with coal or stand-alone power production

- Waste Coal (gob)
- Tire-Derived-Fuel
- Municipal Solid Waste
- Shingles
- Biomass
  - Waste wood
  - Rail Road Ties
  - Forest slash
  - Energy crops
- Methane Recovery from Anaerobic Digestion of animal wastes
- Hydro
  - Large Conventional

EPA considers “at risk” and under-construction to artificially reduce the emissions rate goal. EPA assumes no incremental cost to include the potential future generation from these units in the goal calculation denominator. The result is a dramatic reduction in the emissions rate goals for these states which actually threatens the completion of the nuclear reactors, because the utilities and co-ops that are constructing new reactors need the rate revenue from coal and other fossil generation that will be restricted or eliminated by the extremely low rates. This penalizes utilities and co-ops that committed to early zero CO<sub>2</sub> base load generation. If the new nuclear construction starts now then it would not be included in the emissions rate calculations. Thus, the ultra-low rates that include the under-construction nuclear in the emissions rate calculations threaten both coal and new nuclear generation. Including at risk and under-construction also introduces unmanageable compliance risk. Should a nuclear plant have operational issues such that it could not operate for an extended period, the state nor the owner of the nuclear plant has virtually no opportunity to comply. Inclusion of at risk or under-construction nuclear generation does not reduce CO<sub>2</sub> emissions, it only serves to arbitrarily reduce the rate and introduce unmanageable risk. Nuclear generation should not be included in the CPP rule.

EPA assumes a nationwide RE average of approximately 13 percent by the end of 2029. The calculation takes the 2012 RE MWh and projects an increase by 2029. For Kentucky, EPA

determined that effectively none of the 2012 generation was from RE and set a future target of ten percent because it is part of the southeastern states.

Renewables are heavily dependent on resource location. Restricting the ability to develop renewable projects through zoning and environmental studies in the areas with high wind force or sun hours significantly limits the overall amount of available RE and forces projects to areas which may not have the same resources. Placing the same capital into areas with fewer resources raises the average cost per MWh and the overall cost of compliance with the CPP.

Due to some of the remote locations of the prime renewable resources transmission infrastructure upgrades or additions are often necessary. A significant variable is the right of way/easement process. This is highly dependent on landowners and can also be influenced by public opinion. Just as the permitting of renewable facilities encounters an increasing number of permits and approvals with long study periods, so too does the construction of power lines to move energy from the renewable facilities to load centers. NERC estimates a 10 to 15 year timeline for transmission construction. This country has never built this level of transmission and pipeline expansion and generation.

EPA's assumption that EKPC can essentially create an RE portfolio by 2020 or 2030 is arbitrary, unreasonable and unjustified.

#### **E. Building Block 4 – Energy Efficiency Management Generation Savings**

There is no support for the EE assumptions and EPA's Technical Support Documents are unable to explain how the numbers are derived. EPA determines a state-specific value reflecting the total MWh sales that could potentially be avoided through DSM. These values increase each year from 2020 to 2029. Once the savings are determined, the numbers are scaled up 7.51 percent to convert retail sales to a total net generation that accounts for transmission and

distribution losses. The lesser of the (1) avoided net generation value, or (2) the avoided net generation multiplied by the state's generation share of its sales is added to the denominator.

For Kentucky, EPA determines that the percentage of potential avoided MWh sales from EE savings to be 1.91 percent in 2020, increasing to 10.02 percent in 2029. EPA proposes a substantial increase in EE savings. This goal is unrealistic given the unique difficulties that co-ops have achieving energy reductions.

EPA should define EE broadly to include all programs that promote behavioral changes by energy consumers should be considered. The MWh saved as a result of behavioral changes should count toward compliance with the CPP. Some of EKPC's owner-member distribution companies have implemented prepay programs. Customer usage under these prepay programs is regularly reduced by 12 percent as a result more energy consumption information provided to customers causing them being more disciplined and frugal of their use of energy. MWh from prepay programs and other programs that promote customers using energy more responsibly should count in Block 4 for compliance. EPA is penalizing utilities and states that implemented EE and demand side management programs before the 2012 baseline. The cost of EE programs increase exponentially once the most effective programs are in place. This implies that utilities and states that have implemented EE programs before the baseline are now left to implement more expensive programs if they want to match the EPA assumptions for EE.

The effective date for EE MWh in Building Block 4 to be counted for compliance with the CPP should be the date the CPP is finalized, assuming EPA's objective for including EE in the CPP rule is to ensure that states and utilities aggressively promote EE and reduce CO<sub>2</sub> emissions by reducing the demand for electricity. The EPA has touted the flexibility of the CPP many times. It is difficult to see why EE achieved before the rule is final should not be captured

for compliance with the rule. EPA's position on EE should be earlier is better. The CPP should not impose perverse incentives to stall EE programs or implementations so that they can be counted for compliance. States and utilities will pursue EE more aggressively more quickly if such actions result in credit towards compliance. EPA should accept and give EKPC credit for the EE savings that it is currently achieving or will achieve in the near future.

Equipment code changes, at either the federal or state levels, which require more efficient appliances within a state, should be counted in Block 4. Building code changes, at either the federal or state levels, which require improved building envelopes within a state, should be counted in Block 4.

Deemed savings (statistical sampling of programs to determine the MWh saved) must be an acceptable method for determining the MWh to include in the denominator for compliance. Statistical sampling should use whole-home meter data from a sample size large enough to generate a 90 percent confidence level for the results. Deemed saving should be based on gross MWh savings instead of net MWh savings. The onerous data gathering and surveying required for a net calculation applied to a gross measure inherently includes many assumptions resulting in a net multiplier that is subjective at best. Imposing an overly complex accounting for MWh savings in Building Block 4 will stifle programs of smaller utilities and divert precious capital and human resources to accounting for the MWh instead of further development of EE programs. Measurement and valuation needs to be less onerous for small utilities than current standards like International Performance Measurement and Verification Protocols.

Limiting a measure's lifetime to only ten years, as proposed in the CPP, will result in undercounting actual MWh saved by many measures. LED light bulbs will last 20 years or longer and the MWh saved in years 20 is the same as year 1. EPA states that savings decline

over years; thus the need to not count savings past year 10. That is true for some measures (*e.g.*, air sealing doors). But saving from many measures do not decline over time and last longer than 10 years (*e.g.*, LEDs).

EPA needs to provide guidance for the appropriate benefit/cost test of EE programs. Typical utility EE programs are cost-share programs between the participant and the utility – utility rebate covers a portion of the cost to implement a measure. The Total Resource Cost (TRC) is the general test required by the Kentucky state utility commission. The rebate amount in that test has no impact on whether a program or measure has more benefit than cost from the utilities perspective. The utility can pay \$1 or 100 percent of all cost and the TRC Benefit to Cost (B/C) ratio will not change. The Utility Cost Test (UCT) or Ratepayer Impact Measure (RIM) does include the rebate amount in the B/C calculation. Over half of the counties that EKPC serves are identified by the U.S. government as persistent poverty counties. Nearly 40 percent of all of our customers are at or below the poverty level and simply cannot pay for their share of the costs. In order for EKPC to achieve 1 percent or a stretch goal of 1.5 percent, we would be required to pay nearly 100 percent of most measured cost. That would result in most programs failing the UCT or RIM B/C which would cause EKPC to fail to achieve the EE savings goals. The program might pass the TRC, but then EE could be more costly than building generation.

While flexibility is provided by the EPA to pick and choose between building blocks the EE building block appears fundamental to reinforcing the EPA's claim about reducing the customers' power bill by 2030 as part of the CPP. If a state decides to veer off course from the EPA's feasible amount of EE, this claim falls apart.

Measurement and verification of EE programs is crucial to understanding the potential costs of Building Block #4. Large scale measurement and verification programs can add overhead to an EE program and can be duplicative if each party is implementing the same measure and independently running evaluation, measurement and verification programs.

While EE can contribute to and be a significant part of CPP compliance, neither EKPC nor other utilities can force EE upon its customers. Regardless of how much time, effort and money are committed to EE, there is no way to know how effective it will be. Even in current EE programs it is difficult to measure energy savings and it is impossible to enforce energy savings targets from EE programs. For G&Ts it is even more difficult because the EE goals are implemented by owner-member cooperatives that own and operate the distribution system, not the G&Ts.

These costs that EKPC's Owner-Members will absorb are extraordinary and must be considered by EPA when setting 111(d) guidelines. Failure to do so is arbitrary and violates CAA 111 which requires consideration of economic costs.

**1. Energy Efficiency Targets Assumed in Building Block 4 Cannot Be Achieved by Rural Electric Cooperatives**

EKPC is significantly disadvantaged by Building Block 4 of the proposed CPP. The proposed CPP anticipates a significant increase in EE that will translate into a reduced demand for electricity. However, the proposed CPP does not consider the real life situation of many members of the rural electric cooperatives.

**2. The Proposed CPP Includes Unachievable EE Goals Which Will Undermine EKPC's Ability to Reliably Provide Electricity**

In the proposed CPP, EPA provides options for introducing and increasing residential EE, including financial incentives such as rebates and loans, technical services such as audits and retrofits, and educational campaigns about EE benefits. Examples of residential measures

include use of efficient ENERGY STAR products and equipment, insulation upgrades, sealing of air leaks and home audits identifying whole house retrofit opportunities. Yet the proposed CPP does not consider whether all residents can afford to invest in new EE appliances. The proposed growth in EE will not be universally achievable.

EPA's proposed CPP makes a number of assumptions regarding EE. EPA assumes that EE will grow faster than electricity demand and that the total electricity demand will be shrinking by 2020.<sup>113</sup> Additionally, although unsupported by any peer-reviewed or technical study, EPA assumes that states will be able to sustain an annual incremental growth rate in EE savings of 1.5 percent, once achieved. This unsupported projection will present reliability concerns if (or when) the EE goal is not achieved.

NERC evaluated EPA's analysis that served as the basis for the EE goals and concluded that the EE goals are higher than states can actually achieve.<sup>114</sup> For example, EPA applies the same EE potential number for residential, commercial and industrial operations, but this fails to consider that industrial processes already are designed to operate as efficiently as possible in order to maximize profits of daily operation. Industrial operations have likely already invested significantly in EE, leaving minimal opportunity for additional increases in efficiency.<sup>115</sup> NERC also notes that the CPP does not account for implicit forms of EE measures from energy load grown projections on which EPA relied when formulating the EE goals. And energy intensity has been on a decline both in consumption per dollar of GDP and consumption per capita due to EE improvements that are already in place. Because the CPP does not account for the EE

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<sup>113</sup> See Potential Reliability Impacts of EPA's Proposed Clean Power Plan, Initial Reliability Review, North American Electric Reliability Corporation (Nov. 2014) at p. 14.

<sup>114</sup> *Id.* at p. 15.

<sup>115</sup> *Id.*

savings already in place, many of the state specific energy goals are too high to be reasonably achievable.<sup>116</sup>

The 1.5 percent annual EE growth rate is wholly unsupported by the analysis conducted by NERC and EPRI.<sup>117</sup> NERC collected EE data through long term reliability assessments and found that projected annual EE growth as a portion of Total Internal Demand since 2011 has only ranged from 0.12 percent to 0.15 percent.<sup>118</sup> This is substantially lower than the anticipated 1.5 percent annual growth rate anticipated by the CPP.

Additionally, EPRI estimates that a 1.5 percent annual incremental energy savings as a percentage of retail sales is higher than EPRI's assessment of potential EE savings.<sup>119</sup> EPRI's research indicates that achieving an annual 1.5 percent growth in EE will require additional measures beyond EE programs, which will take longer and be more costly than anticipated in the proposed CPP.<sup>120</sup> EPRI also suggests that EPA's proposed CPP fails to consider both the spatial effects of regional variation in the electric power generation mix, and temporal effects of changes in electric system load shapes resulting from changes in EE.<sup>121</sup> Specifically, EPRI explains that growth in EE does not translate to a uniform reduction of CO<sub>2</sub> throughout the country. The rate of CO<sub>2</sub> reduction that accompanies increased EE depends on the mix of generation in a given region.<sup>122</sup>

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<sup>116</sup> *Id.*

<sup>117</sup> Comments of the Electric Power Research Institute on Environmental Protection Agency's Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (Oct. 20, 2014).

<sup>118</sup> Potential Reliability Impacts of EPA's Proposed Clean Power Plan, Initial Reliability Review, North American Electric Reliability Corporation (Nov. 2014) at p.16.

<sup>119</sup> Comments of the Electric Power Research Institute on Environmental Protection Agency's Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (Oct. 20, 2014), at p. 5.

<sup>120</sup> *Id.*

<sup>121</sup> *Id.* at p. 6.

<sup>122</sup> *Id.* at p. 28.

For EKPC, the EE goals expressed as a percentage reduction in energy delivered are inflated relative to national averages because of the reliance of EKPC owner-members on electric heat. There are no reasonable fuel switching opportunities in much of our service area, and meaningful reductions in space and water heat system efficiency require very expensive appliance replacements in addition to home sealing and insulation. These are cost-prohibitive for the 20% of our residential customers who own or occupy mobile homes and substandard housing.

A significant short fall of EPA's EE presumptions is that the proposed CPP makes no provision for the path forward if the proposed EE growth rate is not attained. If the EE goals are not achieved, in all likelihood, additional carbon reduction measures would be required, likely in the form of reduced coal generation.<sup>123</sup> Curtailing the use of coal-fired units without supplementing the power grid with additional generation introduces the likelihood of a gap between meeting the CPP's CO<sub>2</sub> goals and having sufficient energy available to meet member needs. G&Ts' ability to continue to provide reliable electric services would be gravely hampered.<sup>124</sup>

### **3. Residential Consumers Are Disadvantaged by EPA's Energy Efficiency Assumptions**

The proposal does not address the well-established fact that EE measures undertaken in the residential sector are considerably less effective on a dollar-per-KWh-reduction basis than those undertaken in the industrial and commercial sectors.<sup>125</sup> Instead, EPA erroneously applies one EE potential across the residential, commercial and industrial sectors. EPA's assumption

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<sup>123</sup> See Potential Reliability Impacts of EPA's Proposed Clean Power Plan, Initial Reliability Review, North American Electric Reliability Corporation (Nov. 2014) at p.14.

<sup>124</sup> *Id.*

<sup>125</sup> *Id.* at p. 15.

fails to consider that industrial processes are already designed to maximize efficiency in order to maximize profits.<sup>126</sup> Applying a single EE potential percentage across all three sectors creates perverse incentives for industrial utility consumers to reduce their energy load proportional to residential customers, but by a much greater magnitude per capita.<sup>127</sup>

Building Block 4 thus imposes greater burdens on rural electric cooperatives, which have disproportionately residential customer bases, than are imposed on municipal and investor-owned utilities. The proposed EE targets would result in member transmission and distribution cooperatives incurring additional cost per rural electric cooperative member/ratepayer.

G&Ts serve the poorest, most rural areas of the country. Household electric usage tends to be higher in rural areas due to the prevalence of detached single unit homes, which tend to be larger and more exposed to the elements than urban housing. Rural areas also have a disproportionate share of energy-inefficient, manufactured housing. At 14.7 percent, the share of mobile homes in the housing stock of co-op territories is more than double the U.S. average of 6.5 percent.<sup>128</sup> These challenges to successful EE programs are further exacerbated by the large size of G&T service territories. Many G&Ts serve one member per mile of transmission line or less making EE projects even more challenging, as well as reducing any EE gains by the line losses. Many homes served by co-operatives are under-served because the customers that live in these houses cannot afford to comfortably heat and cool their homes. Often EE programs reduce the cost of electrical service and allow these families to increase usage to comfortable levels because of the savings.

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<sup>126</sup> *Id.*

<sup>127</sup> *Id.*

<sup>128</sup> This rises to 17.1 percent for electric cooperatives serving strictly rural areas.

The most inefficient buildings are almost always associated with the customers that have the least means to make energy efficiency improvements. CPP penalties should not be used to fund EPA activities. Penalties collected for noncompliance with the CPP should be redistributed to the states to fund EE programs to improve low income housing. Entities that are funded by penalties are incented to penalize to supplement their budget needs. The penalty distribution should be allocated to states on a weighted average income to ensure that each state benefits and that states with greater lower income customer have additional funds to increase low income housing programs. And, whoever pays for the EE improvements should get the credit.

## **IX. State Plans**

The Clean Power Plan requires states to develop plans to implement the CO<sub>2</sub> emission rate goals and submit them to EPA for approval by June 30, 2016, although one-year extensions would be available for single-state plans and two-year extensions would be available for multi-state plans. The proposed rule does not prescribe the means by which states will meet these goals or how state plans must be structured, allowing a “portfolio approach,” but in EPA’s State Plan Considerations TSD, EPA lays out a very stringent structure for state plans. EPA outlines three basic approaches:

1. States assign rate-based CO<sub>2</sub> limits to affected EGUs (either on a unit basis or plant basis);
2. States assign mass-based CO<sub>2</sub> emissions limits to affected EGUs (unit or group on affected EGUs);
3. A portfolio approach to a rate-based structure (state-driven or utility-driven).

A state’s projection for demand for fossil fuel should impact the states’ rate to mass conversion. New NGCC cannot be a part of a mass-based compliance approach. However, each state’s goals are impacted by more than just the inputs: the method of calculation directly impacts the state goal. As found by EPRI, “the contribution of each Building Block to making

up the target rate *depends crucially on the order in which the Building Blocks are added.*”<sup>129</sup>

The fact that a state’s goal changes substantially depending on the order in which building blocks are applied makes clear that EPA did not consider the impact of implementing all four Building Blocks together.

EPA recognizes the challenges to the enforceability of RE and EE measures, but requires that states or utilities ensure that these programs are enforceable despite the fact that EPA and state agencies have no jurisdiction over RE and EE. EPA also recognizes that for many utilities and co-ops the distribution systems are owned by third parties or member co-ops which make it difficult, if not impossible, for the utilities or co-ops to enforce EE. EPA suggests that states partner with state utility commissions to ensure that RE and EE programs are enforceable and suggest that the IRP process could work for this. EPA does recognize that most cooperatives and municipal utilities are not regulated by state utility commissions. EPA also suggests that states could use legislation to ensure enforceability. Obviously, even EPA has no idea how to proceed down the portfolio path.

EPA is proposing to evaluate and approve state plans based on four general criteria: 1) enforceable measures that reduce EGU CO<sub>2</sub> emissions; 2) projected achievement of emission performance equivalent to the goals established by EPA, on a timeline equivalent to that in the emission guidelines; 3) quantifiable and verifiable emission reductions; and 4) a process for biennial reporting on plan implementation, progress toward achieving CO<sub>2</sub> goals, and implementation of corrective actions, if necessary. In addition, each state plan must follow the EPA framework regulations at 40 CFR 60.23.

The proposed components of states plans are:

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<sup>129</sup> Comments of the Electric Power Research Institute on Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (Oct. 20, 2014), at p. 33 (emphasis in original).

- Identification of affected entities
- Description of plan approach and geographic scope
- Identification of state emission performance level
- Demonstration that plan is projected to achieve emission performance level
- Identification of emission standards
- Demonstration that each emission standard is quantifiable, non-duplicative, permanent, verifiable, and enforceable
- Identification of monitoring, reporting, and recordkeeping requirements
- Description of state reporting
- Identification of milestones
- Identification of backstop measures
- Certification of hearing on state plan
- Supporting material

Despite all the preamble discussion of flexibility for states to develop compliance plans and consider the remaining useful life, economic impacts, energy requirements and other impacts of 111(d) performance standards and adjust the standards accordingly, states have no discretion. The proposal sets emissions rate goals that cannot be adjusted by states and all of the requirements imposed on state plans allow states no discretion. EPA must revise the proposal to allow states to submit plans to establish the performance standards consistent with CAA Section 111. Further, states must have the flexibility to implement CO<sub>2</sub> compliance plans without EPA micro-managing implementation with countless federal requirements that can be enforced directly by EPA. States should be able to commit to meet whatever performance standards are developed and if states do not comply, then EPA can enforce against the state for missing the standards, not for technical violations. States also need a much more realistic schedule for the development, submissions approval and implementation of standards of performance and state compliance plans. The CPP allows one to two years for most states. A schedule analogous to most other rules and SIP calls, five to seven years, is much more appropriate given the

complexity of the potential compliance options and the lack of precedent for regulating CO<sub>2</sub> emissions.

#### **X. EPA's Notice of Data Availability Cannot Cure the Illegality of the CPP**

EPA's issued a Notice of Data Availability (NODA) in the CPP docket seeking comments on a number of potential revisions to the CPP. Examples of these potential revisions are flexibility on the interim goals, variation of the calculation baseline; address the discrepancies between the state emissions rate goals, a potential way to give credit for out of state RE projects and downward adjustments to the emissions rate goals for RE and EE projects. While these potential areas of additional comments may result in changes to the final CPP, these potential revisions to the CPP cannot make the CPP legal.

#### **XI. Conclusion**

The CPP violates the RE Act's federal mandate that rural America receive reliable, low cost electric services because the proposed plan will essentially require the significant reduction in either the operation of or retirement of nearly all coal-fired generation units. Cutting CO<sub>2</sub> emissions to the goals established in the CPP will prevent EKPC from generating sufficient power to continue to provide affordable and reliable service. EPA does not address or resolve this concern. As proposed, the CPP will disproportionately adversely impact rural electric cooperatives like EKPC. The CPP is unworkable, unachievable and illegal. EPA must withdraw the CPP.

In addition to this submittal for EPA's consideration, **EKPC endorses and incorporates by reference the comments of the National Rural Electric Cooperative Association, the Electric Power Research Institute and the Generation and Transmission Fossil Cooperative Group who are filing separate comments. In addition, East Kentucky Power Cooperative supports the Kentucky Energy and Environmental Cabinet.**

**EKPC respectfully requests EPA to withdraw the Clean Power Plan in order to correct the disproportionate adverse and perverse impact to EKPC, our rural electric Owner-Member cooperatives and the Owner-Member ratepayers.**

**Please refer to the video link provided by East Kentucky Power Cooperative.**

**<http://youtu.be/WI5TMTxskm8>**