

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**

In the Matter of an Investigation of the Cost )	
to Missouri's Electric Utilities Resulting from )	<b><u>File No. EW-2012-0065</u></b>
Compliance with Federal Environmental )	
Regulations )	

**Sierra Club's Response to Staff's Workshop Questions and Scenarios**

Sierra Club appreciates the opportunity to participate in this workshop. Because most of the questions and scenarios submitted by Staff are directed to electricity providers, Sierra Club's comments address key themes raised by Staff's questions. In addition, Sierra Club would appreciate the opportunity to submit additional comments after the February 4, 2016 workshop to respond to comments submitted by others prior to and during the workshop.

I. The Clean Power Plan Offers Missouri The Opportunity And Incentive To Diversify Its Electricity Sources And Make Them More Economically and Environmentally Sustainable.

Missouri's heavy reliance on coal for the generation of electricity poses significant risks for our electricity providers and customers. While Missouri uses coal to generate over 82% of its electricity,<sup>1</sup> the national average keeps dropping and is now down to 39%.<sup>2</sup> The Missouri Comprehensive State Energy Plan ("Missouri Energy Plan") notes that Missouri is the 6<sup>th</sup>-largest consumer of coal in the nation, while virtually all of the coal burned here is imported from other states.<sup>3</sup>

The lack of in-state coal resources has important economic consequences. From 2008 to 2012, Missouri's expenditures on net coal imports have increased by 23 percent to well over one billion dollars. In 2012, Missouri had the 4<sup>th</sup> largest net expenditures in the country and the 2<sup>nd</sup> largest per capita expenditures on coal exports.<sup>4</sup>

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<sup>1</sup> Department of Economic Development, Division of Energy, *Missouri Comprehensive State Energy Plan* (Oct. 2015) at 20, available at <https://energy.mo.gov/energy/docs/MCSEP.pdf> ("Missouri Energy Plan").

<sup>2</sup> EIA, Frequently Asked Questions, What is U.S. electricity generation by energy source? (Data for 2014; Last updated Mar. 31, 2015), available at <https://www.eia.gov/tools/faqs/faq.cfm?id=427&t=3>.

<sup>3</sup> *Missouri Energy Plan* at 20-21.

<sup>4</sup> *Id.* at 21.

The Missouri Energy Plan highlights the need – even without regard to the Clean Power Plan (“CPP”) – for Missouri to diversify its energy portfolio to reduce our heavy reliance on fossil fuels.

As a result of its reliance on imported coal, natural gas and transportation fuels, Missouri sends billions of dollars out of state annually. The further development of in-state renewable resources can keep these dollars in local economies and provide important economic development and a diversified energy portfolio that can improve energy assurance.<sup>5</sup>

By requiring the state to reduce its carbon dioxide (“CO<sub>2</sub>”) emissions from coal and natural gas plants, the Clean Power Plan will help Missouri to expand the diversification of its energy supply, spur in-state economic development for increased energy efficiency/demand management and renewable energy sources, and better position the state for an economically and environmentally sustainable future.

## II. Missouri Is Well-Poised To Meet Its Clean Power Plan Target.

Due to factors other than the Clean Power Plan, several units in Missouri utilities’ aging coal fleet have already been retired and more are scheduled for retirement over the next few years. Assuming this generation is not replaced with carbon-emitting sources, these retirements will reduce Missouri’s CO<sub>2</sub> emissions by about 8.6 million tons<sup>6</sup> – nearly 40 percent of the state’s CPP mass-based target to reduce emissions by 22 million tons by 2030 compared with 2012 emissions.<sup>7</sup>

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<sup>5</sup> *Id.* at 41.

<sup>6</sup> This reduction is derived from totaling the emission reductions from the retirement of the following plants/units: Independence Power and Light’s Blue Valley plant (55,189 tons CO<sub>2</sub>), Central Electric Power Cooperative and AECl’s Chamois plant (340,812 tons CO<sub>2</sub>), KCP&L GMO’s Lake Road plant Unit 4 (432,107 tons CO<sub>2</sub>), Ameren Missouri’s Meramec plant (4,664,635 tons CO<sub>2</sub>), KCP&L’s Montrose plant (2,176,665 tons CO<sub>2</sub>), KCP&L GMO’s Sibley plant Units 1-2 (282,889 tons CO<sub>2</sub>), and City Utilities of Springfield’s James River plant, Units 3-5 (666,918 tons CO<sub>2</sub>).

<sup>7</sup> The 22 million ton reduction requirement (from 78 million tons in 2012 to 56 million tons in 2030) assumes that Missouri’s CPP adopts a mass-based approach including a new source complement. EPA, *Clean Power Plan: State at a Glance – Missouri*, available at <http://www3.epa.gov/airquality/cpptoolbox/missouri.pdf>.

Additional retirements are in the works. Ameren Missouri indicated in its 2014 Integrated Resource Plan that it plans to retire the Sioux plant by 2033.<sup>8</sup> In a January 2014 presentation to the Commission, Associated Electric Cooperative, Inc. (“AECI”) stated that it had modeled the retirement of Thomas Hill Unit 1 as part of a possible CPP compliance plan.<sup>9</sup> If Ameren decides to retire Sioux a few years earlier (i.e., by the end of 2030) and AECI decides to retire Thomas Hill Unit 1, then Missouri’s carbon reductions from retirements alone would total 15 million tons – about two-thirds of the way toward its 2030 mass-based goal under the CPP.

Existing programs and policies designed to increase renewable energy and energy efficiency will also play an important role in achieving the additional carbon reductions necessary to meet the state’s CPP target. The Renewable Energy Standard, for example, requires Missouri’s three Investor Owned Utilities (“IOUs”) to ramp up renewable energy resources to constitute at least 15 percent of each utility’s sales by 2021.<sup>10</sup> On the energy efficiency front, Commission regulations implementing the Missouri Energy Efficiency Investment Act (“MEEIA”) urge the IOUs to achieve 9.9 percent cumulative energy savings by 2020 and 1.9 percent annual energy savings thereafter.<sup>11</sup> While MEEIA’s provisions are voluntary, some energy savings have already occurred through MEEIA and various other energy efficiency programs in the state.<sup>12</sup>

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<sup>8</sup> Ameren Missouri, *2014 Integrated Resource Plan*, Executive Summary at 17, Fig. 1.7, available at <https://q9u5x5a2.ssl.hwcdn.net/-/Media/Missouri-Site/Files/environment/renewables/irp/irp-chapter1.pdf?la=en>. In 2033, the Sioux plant will be 66 years old. When Ameren announced its plans to close the Meramec plant by 2022, by which point it will be 69 years old, it cited worker safety as the primary reason for plant retirement. Direct Testimony of Kevin DeGraw on Behalf of Union Electric Company d/b/a Ameren Missouri, ER-2014-0258 (July 3, 2014) at 3-4.

<sup>9</sup> AECI presentation to Public Service Commission, video clip available at <http://psc.mo.gov/VideoDetail.aspx?Id=2505> (approx. 1:19 – 1:23).

<sup>10</sup> §393.1030.1, R.S.Mo.

<sup>11</sup> 4 CSR 240-20.094(2).

<sup>12</sup> *Missouri Energy Plan* at 81-90.

Others have similarly concluded that Missouri is well-poised to meet its CPP targets. The World Resources Institute (“WRI”) found that Missouri could reach 90% of its CPP mass-based target by meeting the voluntary energy efficiency goals under MEEIA and the Renewable Energy Standard discussed above, increasing the operation of existing natural gas combined cycle plants, and increasing coal plants’ efficiency by an average of 4.3% with no- and low-cost operational improvements and best practices.<sup>13</sup> WRI determined that Missouri could accomplish the additional reductions necessary to achieve 100% CPP compliance by further increasing renewable energy production beyond 2021.

[I]f renewable energy grew from 15 percent of investor-owned utility sales in 2021 to 20 percent of all state sales by 2030, Missouri would more than make up the remaining gap, exceeding the reductions required to meet its mass-based target by 17 percent.<sup>14</sup>

### III. Certain Plan Elements Are Essential If Missouri Uses A Mass-Based Approach.<sup>15</sup>

#### a. A Mass-Based Plan Must Prevent Leakage, And A Plan With A New Source Complement Is The Most Efficient Method Of Doing So.

The Clean Air Act provision under which the Clean Power Plan was promulgated requires EPA to set emission limits based on the best system of emission reduction (“BSER”). 42 U.S.C. §§ 7411(d) and (a)(1). The Clean Power Plan defines BSER in terms of emission performance rates – an interim (2022-2029) rate of 1,534 lbsCO<sub>2</sub>/netMWh and a final (2030 and beyond) rate of 1,305 lbsCO<sub>2</sub>/netMWh for steam generating units, and an interim rate of 832

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<sup>13</sup> Rebecca Gasper et al., World Resources Institute, *How Missouri Can Meet Its Clean Power Plan Targets* (Jan. 2016) at 3, available at [http://www.wri.org/sites/default/files/Missouri\\_fact\\_sheet.pdf](http://www.wri.org/sites/default/files/Missouri_fact_sheet.pdf).

<sup>14</sup> *Id.* See also Natural Resources Defense Council, *Missouri’s Pathway to Cutting Carbon Pollution* (Aug. 2015) at 3, available at <http://www.nrdc.org/air/clean-power-plan/files/CPP-Missouri-Compliance-IB.pdf>.

<sup>15</sup> Although Staff’s questions are based on the assumption that Missouri uses a mass-based approach, Sierra Club notes that such an approach appears to have fewer climate and public health benefits than a rate-based approach because Missouri’s final mass goal is less stringent than its final rate goal. Missouri’s final mass goal (including new units) is 56,052,813 short tons of CO<sub>2</sub>, a 28% reduction from 2012 actual emissions of 78,039,449 short tons. By comparison, Missouri’s final rate goal is 1,272 lbs CO<sub>2</sub>/MWh, a 37% reduction from the 2012 statewide adjusted average emission rate of 1,963 lbs CO<sub>2</sub>/MWh. EPA, *Clean Power Plan: State at a Glance – Missouri*, available at <http://www3.epa.gov/airquality/cpptoolbox/missouri.pdf>.

lbsCO<sub>2</sub>/netMWh and a final rate of 771 lbsCO<sub>2</sub>/netMWh for stationary combustion turbines.<sup>16</sup>

These rates apply on a plant-by-plant basis to every affected plant, regardless of the state in which a plant is located.<sup>17</sup>

To enhance the states' flexibility in implementing the Clean Power Plan, and the electricity generators' flexibility in complying with the Clean Power Plan, the Environmental Protection Agency ("EPA") also translated the plant-level BSER into statewide goals in light of the mix of generation facilities in each state. Furthermore, EPA provided the statewide goals in terms of both rate-based goals and mass-based goals.<sup>18</sup>

The emission performance rates reflect the BSER, and the statewide rate-based goal and statewide mass-based goal are alternative metrics for realizing the emission performance rates at the aggregate affected fleet level for a state.<sup>19</sup>

The questions posed for this workshop implicitly assume that Missouri's plan would adopt the statewide mass-based alternative metric. That option brings with it the challenge of leakage, whereby generation could shift from existing sources subject to BSER-based CO<sub>2</sub> limits to new CO<sub>2</sub>-emitting sources outside of the plan. Such leakage is unlawful under the Clean Air Act because it undermines the ability of the states' power plants to achieve BSER.<sup>20</sup> Accordingly, a mass-based Missouri CPP compliance plan must ensure that such leakage does not occur. As explained by EPA:

[I]f the form of the standard does not address leakage or incents the kinds of generation shifts that we identify as leakage, the states must otherwise address leakage in order to ensure that the standards of performance applied to the affected EGUs are, in the aggregate, at least equivalent with the emission performance rates, and therefore appropriately reflect the BSER as required by the statute. ...

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<sup>16</sup> 40 C.F.R. Part 60, Subpart UUUU, Table 1.

<sup>17</sup> EPA, *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule*, 80 Fed. Reg. 64662, 64811-12 (Oct. 23, 2015) ("Clean Power Plan").

<sup>18</sup> 40 C.F.R. Part 60, Subpart UUUU, Tables 2-4.

<sup>19</sup> EPA, *Clean Power Plan*, 80 Fed. Reg. at 64812.

<sup>20</sup> *Id.* at 64821.

In contrast to various forms of rate-based implementation, mass-based implementation in a state plan can unintentionally incentivize increased generation from unaffected new EGUs as a substitute for reducing emissions at units subject to the existing source mass goal in ways that would negate the implementation of the BSER and would result in increased emissions. This occurs because, unlike in a rate-based system where rate-based averaging lowers the cost of generation from existing NGCC units relative to generation from new NGCC units, in a mass-based system the allowance price increases the cost of generation from existing NGCC units relative to generation from new NGCC units. The extent to which electricity providers opt to rely on this increase in unaffected new source utilization as a substitute for improving the emissions performance across existing sources would be fundamentally inconsistent with relying on the BSER to reduce emissions as the basis of the subcategory-specific emission performance rates.

... The EPA is therefore requiring that states adopting a mass-based plan include requirements that address leakage, or otherwise provide additional justification that leakage would not occur under the state's implementation of mass-based emission standards.<sup>21</sup>

The most straightforward, effective, transparent, and administratively-feasible means of avoiding unlawful leakage is to adopt the mass-based state goal that includes a new source complement.<sup>22</sup> This approach is presumptively approvable by the EPA.<sup>23</sup>

b. Allowance Allocation Should Be By Auction.

Allowances to emit CO<sub>2</sub> should be viewed as public resources and their value captured for the public good. Instead of distributing allowances to affected sources for free, Missouri should auction allowances in an open market, after setting aside some allowances to incentivize renewable energy and energy efficiency projects. Requiring generators to pay to emit CO<sub>2</sub> into the atmosphere creates a direct economic incentive for them to reduce CO<sub>2</sub> emissions as much as possible to avoid having to purchase allowances. Auctions also lead to an efficient distribution of allowances, provide immediate price signals in the market, collect any windfall profits that might accrue to generators as a result of free allocation, create equal opportunities for all

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<sup>21</sup> *Id.* at 64823.

<sup>22</sup> 40 C.F.R. Part 60, Subpart UUUU, Table 4. The regulations set forth two sets of mass-based statewide goals

<sup>23</sup> *Clean Power Plan*, 80 Fed. Reg. at 64888.

participants in the allowance market, and provide a source of revenues that can be used to incentivize emissions reductions and distributional ends.<sup>24</sup>

Under an auction, the government captures the value of the allowances, which can then be distributed in a way that generates economy-wide benefits (e.g., if used to reduce distortionary taxes) or equity benefits (e.g., if used to fund energy efficiency projects for low-income households).<sup>25</sup> For example, the northeastern and mid-Atlantic states participating in the Regional Greenhouse Gas Initiative (“RGGI”) have used auction proceeds to invest in energy efficiency programs, credit customers’ electricity bills, invest in community-based installation of advanced clean energy systems, provide education and job training programs, fund other greenhouse gas reduction initiatives, and fund government operations through allocation to state general funds.<sup>26</sup> The RGGI approach has yielded substantial net economic and environmental benefits, while ensuring reliability. As noted in a 2015 review of the program:

RGGI has now been operating for over six years. In every year, the emission allowances – or rights to emit CO<sub>2</sub> – have been almost entirely dispersed into the market through coordinated (centralized) regional auctions. ...

Throughout the RGGI program’s implementation, power system reliability has been maintained and CO<sub>2</sub> emissions from power generation have decreased. ...

Similar to our findings with respect to the first three years of the RGGI program, its implementation in the second three-year period generates *\$1.3 billion in net economic benefits* across the region. The region’s economy – and each state’s as well – benefits

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<sup>24</sup> EPA, *Tools of the Trade: A Guide to Designing and Operating a Cap and Trade Program for Pollution Control* (June 2003) at 3-16, available at <http://www.epa.gov/sites/production/files/2015-06/documents/tools.pdf> (“Tools of the Trade”).

<sup>25</sup> Economists have long argued that auctions are the most efficient form of allowance allocation, in particular where auction revenues are used to reduce distortionary taxes. Resources for the Future has estimated that, even assuming that revenues are distributed in the most inefficient way discussed in the economics literature, which is through distribution to households, auctions are substantially less costly than other allocation approaches such as grandfathering or a generation performance standard (i.e., allocating allowances on the basis of recent generation). See Dallas Burtraw et al., *The Effect of Allowance Allocation on the Cost of Carbon Emission Trading* (Aug. 2001), available at <https://core.ac.uk/download/files/153/9308119.pdf>.

<sup>26</sup> Paul Hibbard et al., Analysis Group, *EPA’s Clean Power Plan: States’ Tools for Reducing Costs and Increasing Benefits to Consumers* (July 2014) at 19, available at [http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/analysis\\_group\\_epa\\_clean\\_power\\_plan\\_report.pdf](http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/analysis_group_epa_clean_power_plan_report.pdf).

from the expenditures of RGGI auction proceeds on various programs, with benefits flowing to consumers and the broader economy. When spread across the region's population, these economic impacts amount to over \$31 in value added per capita in the region, on average.<sup>27</sup>

Requiring affected sources to purchase allowances through an auction would have only a modest effect on the value of existing generation assets,<sup>28</sup> and any price increases resulting from auctioning allowances could be more than offset with clean energy investments (particularly energy efficiency, which will help to decrease electricity bills), and through targeting the use of revenues to directly address electricity price impacts, especially on low-income households.<sup>29</sup>

While under many cap-and-trade programs (including Clean Air Act programs such as Title IV's Acid Rain Program)<sup>30</sup> EPA has distributed the allowances for free,<sup>31</sup> current CO<sub>2</sub> emissions trading programs allocate the great majority of available allowances through auctions. RGGI, California's Assembly Bill 32 ("AB32"), and the current phase of the EU Emissions Trading Scheme allocate allowances in this way.<sup>32</sup> These programs work well and have resulted

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<sup>27</sup> Paul Hibbard et al., Analysis Group, *The Economic Impacts of the Regional Greenhouse Gas Initiative on Nine Northeast and Mid-Atlantic States* (July 14, 2015) at 2-3 and 5 (emphasis supplied), available at [http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/analysis\\_group\\_rggi\\_report\\_july\\_2015.pdf](http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/analysis_group_rggi_report_july_2015.pdf)

<sup>28</sup> Dallas Burtraw et al., Resources for the Future, *The Effect on Asset Values of the Allocation of Carbon Dioxide Emission Allowances* (March 2002) at 18, available at <http://www.rff.org/files/sharepoint/WorkImages/Download/RFF-DP-02-15.pdf>.

<sup>29</sup> Dallas Burtraw et al., Resources for the Future, *The Effect of Allowance Allocation on the Cost of Carbon Emission Trading* (August 2001) at 29; Anthony Paul et al., Resources for the Future, *Compensation for Electricity Consumers under a U.S. CO<sub>2</sub> Emissions Cap* (July 2008) at 10, available at <http://www.rff.org/files/sharepoint/WorkImages/Download/RFF-DP-08-25.pdf>.

<sup>30</sup> The Acid Rain Program was enacted at a time that the entire country was "regulated," so that there was no concern about windfall profits. Comments of Dallas Burtraw, *Understanding Allowance Allocation Options Under the Clean Power Plan*, Bipartisan Policy Center Event, January 11, 2016.

<sup>31</sup> Title IV's Acid Rain Program provides for free, permanent allocation of allowances based on a combination of heat input and an emission rate. *Tools of the Trade* at 3-15.

<sup>32</sup> See, e.g., California Air Resources Board, Allowance Allocation, available at <http://www.arb.ca.gov/cc/capandtrade/allowanceallocation/allowanceallocation.htm>; RGGI, CO<sub>2</sub> Auctions, available at [https://www.rggi.org/market/co2\\_auctions](https://www.rggi.org/market/co2_auctions). Analyses of the impact of free allocation to power companies under the European Trading Scheme showed that sources passed through between 60 and 100 percent of the CO<sub>2</sub> costs to consumers. This led European policy makers to revise the program in favor of an auction methodology. See Jos Sijm et al., *CO<sub>2</sub> Cost Pass Through and Windfall Profits in the Power Sector*, Climate Policy, Vol. 6, Issue 1, pp. 49-72, May 2006.

in emissions reductions, clean energy expansion, and billions of dollars in revenues.<sup>33</sup> Today there is no justification for creating trading programs solely on the basis of free allocation of allowances on the basis of historical information to gain acceptance by the regulated entities.

c. Auction Revenues Should Be Invested In Clean Energy And Energy Efficiency.

Missouri should use auction revenues to expand clean energy and energy efficiency to further reduce CO<sub>2</sub> emissions. AB32 and RGGI are examples of mass-based programs that allocate available allowances through auctions that have generated very significant revenue, which has been utilized for investments in renewable energy and energy efficiency.<sup>34</sup> In addition, a percentage of revenues should be used to achieve environmental and economic justice ends, many of which will also help abate air and climate pollution. Those revenues could be used to finance targeted investments in energy efficiency, renewable energy, and projects to revitalize environmental justice (“EJ”) communities affected by pollution from the dirtiest plants. Because EJ communities often cannot fully participate in stakeholder processes due to lack of resources, those revenues should also be used to facilitate EJ communities’ meaningful participation in deciding which activities to fund. Missouri should also create a fund to provide financial assistance to workers and communities affected by plant retirements as Missouri transitions away from coal-fired power.

d. Trading That Adversely Impacts Environmental Justice Communities Should Be Prohibited Or Limited.

Low-income communities and communities of color are often at greater risk from coal-fired power plant pollution than is the general population. EPA conducted a proximity analysis which examined the population within a 3-mile radius of the 21 affected power plants in

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<sup>33</sup> See, e.g., Paul Hibbard et al., Analysis Group, *The Economic Impacts of the Regional Greenhouse Gas Initiative on Nine Northeast and Mid-Atlantic State* (July 14, 2015), available at [http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/analysis\\_group\\_rggi\\_report\\_july\\_2015.pdf](http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/analysis_group_rggi_report_july_2015.pdf)

<sup>34</sup> See, e.g., RGGI, RGGI Benefits, available at [https://www.rggi.org/rggi\\_benefits](https://www.rggi.org/rggi_benefits).

Missouri and found higher-than-average percentages of low-income and/or minority residents around approximately half of them.<sup>35</sup> For example, the population around the Hawthorn plant in Kansas City is 45% minority, more than double the state average of 19%, and 63% low-income, nearly twice the state average of 35%.<sup>36</sup> Three other affected sources are surrounded by higher-than-average minority populations, and nine others are surrounded by higher-than-average low-income populations.<sup>37</sup>

Due to the higher-than-average percentages of low-income and/or minority residents around nearly half of the affected sources in Missouri, Sierra Club urges that the development of the state plan carefully evaluate whether unconditional trading of allowances will result in increased emissions from these sources of concern. Trading creates the possibility that certain sources will end up polluting much more than others, which can lead to pollution hotspots. This is not a concern with CO<sub>2</sub> specifically because the impacts of carbon pollution are distributed globally rather than locally or regionally. However, coal-fired power plants also emit large amounts of health-threatening co-pollutants such as sulfur dioxide and particulates that do have localized impacts. As the CPP shifts generation from coal to less carbon-intense sources, overall emissions of co-pollutants will also decrease, but the public health benefits resulting from the reduction of these pollutants may not be evenly distributed.

Trading of allowances, both intra- and inter-state, lowers generators' cost of compliance with carbon regulations by providing flexibility for sources to reduce carbon emissions where it is most cost-effective. Sierra Club supports the adoption of a trading-ready program that would allow for multi-state trading, but limitations may be necessary to make sure that the public health

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<sup>35</sup> EPA, *EJ Screening Report for the Clean Power Plan* (July 30, 2015), available at <http://www.epa.gov/airquality/cppcommunity/ejscreencpp.pdf>.

<sup>36</sup> *Id.* at 12, 49.

<sup>37</sup> *Id.* at 12, 49-50.

benefits resulting from reductions in co-pollutants are distributed in a fair and equitable manner. In developing its plan, Missouri should consider whether the plants of concern noted above would be likely to increase emissions during implementation of the Clean Power Plan, thereby exposing nearby communities to higher levels of unhealthy co-pollutants. This would be unacceptable from an environmental justice standpoint and would warrant limitations on allowance purchases for these plants.

e. Missouri Should Take Advantage Of An Appropriately-Designed Clean Energy Incentive Program.

Missouri should participate in the CPP's optional Clean Energy Incentive Program ("CEIP"), but should ensure that it is only rewarding projects that would not have been developed without the incentive. It can do so by focusing the program on projects in low-income communities where, for a variety of reasons, there has been less investment in clean energy projects. If the CEIP instead serves as a handout to business-as-usual projects, the program could weaken the overall stringency of the Clean Power Plan, and lower the value of the allowances for projects that are actually in need of the incentive.

If properly focused, the CEIP could be an important component of Missouri's CPP compliance plan. From an environmental perspective, early reductions in carbon pollution are critical because they have a larger cumulative impact on atmospheric carbon than later emissions reductions and therefore provide greater benefits for climate stabilization. From an economic justice perspective, the CEIP will help to remove historic barriers to deployment of energy efficiency measures in low-income communities<sup>38</sup> and ensure that low-income customers can realize savings on their electricity bills. These programs can also benefit the community as a whole by creating green-collar jobs where they are needed most.

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<sup>38</sup> Such barriers include front-end investment requirements, the fact that a significant number of low-income families are renters, lack of information about available programs, and transaction costs.

As EPA has noted, the CEIP must be implemented in such a way that the stringency of the state goal is maintained as much as possible.<sup>39</sup> While EPA plans to grant matching allowances that are above and beyond the state’s mass-based goal, early action allowances issued by the state must be “borrowed” from the budget reflecting the state goal for the compliance period starting in 2022 and may not be distributed again during the compliance period. As noted above, the state should ensure that its CEIP awards focus on projects that would not have occurred absent those incentives. Under the CPP, only energy efficiency projects have to be implemented in low-income communities to qualify for early action allowances under the CEIP.<sup>40</sup> Sierra Club nonetheless urges that the state also focus its CEIP program on renewable energy projects benefiting low-income communities, which are less likely than other renewable energy projects to be developed without the incentive. Focusing the program on low-income renewable energy projects as well as energy efficiency will incentivize new projects and help expand existing programs in a manner that most likely would not have occurred without the program.

#### IV. Increased Energy Efficiency And Other Demand-Side Programs Would Provide Enormous Benefits To Missouri.

Even if the EPA had not promulgated the Clean Power Plan, Missouri’s residents, economy, and environment would benefit from substantially increased energy efficiency (“EE”) efforts. Indeed, the first recommendation of the Missouri Energy Plan is to take advantage of this largely-untapped resource:

Efficiently using available energy resources could be *the most cost-effective method of meeting the state’s energy needs*. Many states have already established progressive energy efficiency policies and goals, and lessons learned elsewhere can help Missouri to use electricity, natural gas, transportation fuels, and other resources more efficiently.<sup>41</sup>

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<sup>39</sup> EPA, *Clean Power Plan*, 80 Fed. Reg. at 64830.

<sup>40</sup> *Id.*

<sup>41</sup> *Missouri Energy Plan* at 208 (emphasis supplied).

The National Association of State Energy Officials (“NASEO”) highlights the benefits of energy efficiency

...as not only often being the least-cost CPP compliance approach, but also as offering multiple benefits that support other state objectives. These include reducing other conventional pollutant emissions, enhancing energy reliability (by reducing grid and fuel supply stress), avoiding or deferring costly supply-side energy investments, and often supporting in-state and local economic opportunities. Thus, energy efficiency strategies can serve as ‘no regrets’ approaches that deliver benefits irrespective of the fate of the CPP or direction of future climate-related policy.<sup>42</sup>

Energy efficiency offers Missouri utilities and their customers the opportunity to save money while complying with the Clean Power Plan. A recent study determined that a CPP compliance plan that maximizes available energy efficiency strategies would enable Missouri residents to *save* nearly \$10 per month on their electric bills. Synapse Energy Economics found that with a compliance plan featuring aggressive energy efficiency measures and an emission allowance trading program minimizing utilities’ costs, residential electricity bills in Missouri would be nearly \$10 lower in 2030 under the Clean Power Plan than under business as usual in the absence of the CPP.<sup>43</sup> The Synapse study does not rely on any breakthroughs in energy efficiency strategies. Rather, it assumes that Missouri will ramp up its energy efficiency programs to achieve by 2029 the energy efficiency savings that are already proven and being achieved in several states, including Massachusetts, Arizona, California, Rhode Island, and Vermont.<sup>44</sup>

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<sup>42</sup> National Association of State Energy Officials (NASEO), *Energy Efficient Strategies for Clean Power Plan Compliance: Approaches and Selected Case Studies* (July 2015, revised Aug. 18, 2015) at 6-7, available at <http://111d.naseo.org/Data/Sites/5/media/documents/naseo-ee-for-cpp-2015-aug-20.pdf>.

<sup>43</sup> Pat Knight et al., Synapse Energy Economics, Inc., *Cutting Electric Bills with the Clean Power Plan* (Jan. 14, 2016) at 2-3, available at <http://www.synapse-energy.com/sites/default/files/cutting-electric-bills-cpp.pdf>.

<sup>44</sup> *Id.* at 15.

Demand response (“DR”) programs, which the U.S. Supreme Court recently upheld as regulated by the Federal Energy Regulation Commission at the interstate wholesale level,<sup>45</sup> offer impressive benefit/cost ratios in ensuring CPP compliance.

DR resources are usually less costly to procure upfront than traditional generation resources. For all three scenarios [studied in this report], the benefit/cost ratio is above three (3) for Massachusetts and above two (2) for Illinois, indicating that peak demand reduction resources are a good investment.

Therefore, by passing peak demand reduction mandates into law, or creating peak demand reduction programs, policymakers and utilities in Massachusetts, Illinois, and neighboring states could significantly reduce costs for ratepayers, strengthen reliability, and facilitate compliance with the Clean Power Plan.<sup>46</sup>

These studies add to the pre-CPP data establishing that energy efficiency is the least-cost option for meeting energy needs, and yields net savings even when accounting for the cost of implementing EE programs.<sup>47</sup> According to the American Council for an Energy-Efficient Economy:

[E]nergy efficiency programs are holding steady as the least-cost energy resource option that provides the best value for America’s energy dollar. Data from a large number of diverse jurisdictions across the nation show that energy efficiency has remained the lowest-cost resource even as the amount of energy efficiency being captured has increased significantly. At an average cost of 2.8 cents per kilowatt hour (kWh), electricity efficiency programs are one half to one third the cost of alternative new electricity resource options such as building new power plants. ... In addition, both electricity and natural gas efficiency costs have remained consistent over the past decade. This consistency shows the reliability of efficiency as a long-term resource.<sup>48</sup>

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<sup>45</sup> *Federal Energy Regulation Commission v. Electric Power Supply Ass’n*, \_\_\_ U.S. \_\_\_, 2016 WL 280888 (Jan. 25, 2016), available at [http://www.supremecourt.gov/opinions/15pdf/14-840\\_k537.pdf](http://www.supremecourt.gov/opinions/15pdf/14-840_k537.pdf).

<sup>46</sup> Brett Feldman et al., Navigant Consulting, Prepared for Advanced Energy Economy, *Peak Demand Reduction Strategy* (Oct. 2015) at 7, available at <http://info.aee.net/hubfs/PDF/aee-peak-demand-reduction-strategy.pdf>.

<sup>47</sup> See, e.g., Ian M. Hoffman et al., Lawrence Berkeley National Laboratory, *The Total Cost of Saving Electricity through Utility Customer-Funded Energy Efficiency Programs: Estimates at the National, Sector, and Program Level* (Apr. 2015), available at <http://emp.lbl.gov/sites/all/files/total-cost-of-saved-energy.pdf>. See also Advanced Energy Economy Institute, *Competitiveness of Renewable Energy and Energy Efficiency in U.S. Markets* (June 2015), available at <http://info.aee.net/hubfs/PDF/RE-EE-Competitiveness.pdf?t=1453494148569>.

<sup>48</sup> Maggie Molina, American Council for an Energy-Efficient Economy (ACEEE), *The Best Value for America’s Dollar: A National Review of the Cost of Utility Energy-Efficiency Programs* (Mar. 25, 2014) at iii, available at <http://aceee.org/research-report/u1402>.

Energy efficiency and other demand management programs are not only the least-cost energy resource option, but they also enhance system reliability. According to the Edison Foundation:

Demand-side resources – both efficiency and demand response – are an increasingly important asset to the modern grid. In an era of increasing amounts of intermittent renewable energy on the grid, distributed demand resources play a key role in providing flexibility to the grid. In addition, demand-side resources are low cost and reduce emissions. As utilities manage the increasingly complex business of maintaining a resilient grid that provides reliable, secure, affordable, and increasingly clean electricity, reliable demand-side programs have never been more critical.<sup>49</sup>

Notwithstanding the compelling benefits of EE as a least-cost, reliability-enhancing resource that also reduces power plant emissions and provides local jobs,<sup>50</sup> Missouri lags behind almost every other state in the nation in tapping this valuable energy resource. In 2015, Missouri's EE policies and programs were ranked 44<sup>th</sup> in the nation – the same ranking as in 2014.<sup>51</sup> Indeed, they have never been ranked higher than 41<sup>st</sup> in the ten years since the rankings began.

The Missouri Energy Plan recommends several means of taking greater advantage of the tremendous potential of EE measures. Of greatest relevance to this Workshop, the Missouri Energy Plan suggests amending MEEIA to adopt “more aggressive, and mandatory, targets.”<sup>52</sup> The Commission recently made the difficult decision to reject Ameren Missouri's proposed 2016-2018 MEEIA plan because while it ensured earnings benefits for Ameren, it ensured “little,

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<sup>49</sup> Innovation Electricity Efficiency, An Institute of the Edison Foundation, *Energy Efficiency: A Growing Utility-Business Solution to Reliability, Affordability, & Sustainability* (Sept. 2013), available at [http://www.edisonfoundation.net/iei/Documents/IEE\\_EEaGrowingUtilityBusiness\\_0913.pdf](http://www.edisonfoundation.net/iei/Documents/IEE_EEaGrowingUtilityBusiness_0913.pdf).

<sup>50</sup> ACEEE estimated in 2011 that “energy efficiency investments can create 8,500 new local jobs in Missouri by 2025, ... include[ing] well-paying trade and professional jobs needed to design, install, and operate energy efficiency measures (direct jobs) and also a broader impact on job creation through re-spending of energy bill savings in other areas of the economy (induced jobs).” Maggie Molina et al., ACEEE, *Missouri's Energy Efficiency Potential: Opportunities for Economic Growth and Energy Sustainability*, Report E114 (Aug. 2011) at vii, available at <http://aceee.org/research-report/e114>.

<sup>51</sup> American Council for an Energy-Efficient Economy, The 2015 State Energy Efficiency Scorecard, available at <http://aceee.org/research-report/u1509>, and Missouri Scorecard, available at <http://aceee.org/state-policy/scorecard>.

<sup>52</sup> *Missouri Energy Plan* at 96-97.

if any, overall net benefits” to Ameren’s customers.<sup>53</sup> Ameren’s customers – and the Commission – should not face the choice between an expensive, ineffective EE program or no EE program at all. MEEIA should be amended to require all IOUs to submit robust, ambitious EE programs, subject to Commission review and approval. It should also encourage other electricity providers not subject to Commission regulation to develop and implement EE programs. These steps would benefit Missouri ratepayers directly and help the state comply with the CPP.

V. Increased Renewable Energy Generation Would Provide Enormous Benefits to Missouri.

Clean energy provides multiple benefits, including reduced pollution, lower costs, job creation, and insulation from fuel price hikes. According to the Solar Foundation, in 2014, the most recent year for which data are available, Missouri hosted 89 solar industry manufacturing and installation companies. Missouri is ranked 16<sup>th</sup> in the nation for solar jobs, with 2,500 Missourians already working in the solar field.<sup>54</sup> According to the American Wind Energy Association, in 2014 there were 10 companies in Missouri involved in wind turbine parts manufacturing with between 501 and 1,000 Missourians employed directly and indirectly in the wind energy sector.<sup>55</sup> Missouri’s 252 wind turbines were also generating \$1.4 million in annual land lease payments to farmers and other property owners.<sup>56</sup> The Missouri Energy Plan reports more than 109,000 “green jobs” in the area of green energy production, green buildings, and green manufacturing in the state.<sup>57</sup>

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<sup>53</sup> *In the Matter of Union Electric Company d/b/a Ameren Missouri’s 2<sup>nd</sup> Filing to Implement Regulatory Changes in Furtherance of Energy Efficiency as Allowed by MEEIA*, EO-2015-0055, Report and Order (Oct. 22, 2015) at 17.

<sup>54</sup> The Solar Foundation, *State Solar Jobs – Missouri*, available at <http://pre.thesolarfoundation.org/solarstates/missouri>.

<sup>55</sup> American Wind Energy Ass’n, *Missouri Wind Energy*, available at <http://awea.files.cms-plus.com/FileDownloads/pdfs/Missouri.pdf>.

<sup>56</sup> *Id.*

<sup>57</sup> *Missouri Energy Plan* at 169.

Missouri's municipal utilities are appreciating the financial and other benefits of increased renewable energy generation. City Utilities of Springfield has made the most significant advancement in clean energy over the last two years, first with a 5 MW solar farm built in 2014. In December 2015, Springfield announced a new 200 MW wind contract with Duke Energy Renewables. When that project comes online in 2016, Springfield will be receiving one-third of its electricity from clean renewable energy. Notably, the cost of wind energy under Springfield's new Duke wind contract will be *15% lower* than the cost of producing electricity locally at the city's John Twitty coal plant.<sup>58</sup>

The City of Columbia has adopted a Renewable Portfolio Standard designed to obtain 30% of the City's electricity from renewable energy by 2028. In 2014, Columbia had already reached 7% renewables, over-complying with its 5% interim goal for the years 2013-2016.<sup>59</sup> The City of Independence has set a renewable energy goal of 15% by 2021. Independence is currently at 7% renewables. With a recent wind contract and the approval of what will be the largest solar farm in the Kansas City area, Independence will achieve 13.5% renewable energy by the end of 2016 – nearly meeting its 2021 goal.<sup>60</sup>

Smaller municipalities have also been investing in renewable energy. In partnership with the Missouri Public Utility Alliance and MC Power, the municipalities of Butler, Macon,

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<sup>58</sup> Springfield News-Leader, *CU makes big investment in wind farm, renewable energy* (Dec. 3, 2015), available at <http://www.news-leader.com/story/news/local/ozarks/2015/12/03/cu-makes-big-investment-wind-farm-renewable-energy/76723644/>. The Twitty coal plant consists of two units, a 194 MW unit built in 1976 and a 300 MW unit built in 2011 – one of the newest coal units in the country. Yet wind energy is still substantially cheaper.

<sup>59</sup> City of Columbia Missouri, Water and Light, Renewable Energy Portfolio, available at <http://www.gocolumbiamo.com/WaterandLight/Electric/renewableenergyportfolio.php>.

<sup>60</sup> The Examiner, *Solar projects cleared to start* (Dec. 25, 2015), available at <http://www.examiner.net/article/20151225/NEWS/151229410/0/SEARCH>.

Trenton, and Marshall have each installed 3.2 MW solar farms.<sup>61</sup> Rolla recently broke ground on a similar MPUA/MC Power solar farm that will be completed later this spring.<sup>62</sup>

‘Solar development can supplement a power portfolio as a solid source of intermittent power that is environmentally responsible,’ said John Grotzinger, Chief Operating Officer of MJMEUC [Missouri Joint Municipal Electric Utility Commission]. ‘As citizen-driven utilities, these projects allow municipal utilities to be responsive to our customer-owners, while still keeping reliability and affordability at the forefront of power planning.’<sup>63</sup>

In 2015, AECI signed a new wind contract for 150 MW, bringing its wind portfolio to 750 MW.<sup>64</sup>

While not designed to serve as a CPP compliance guide, the Missouri Energy Plan recommends the increased development of renewable energy – which would substantially assist Missouri in meeting its CPP targets. The Plan’s recommendations include the following related to renewable energy:

- Strengthen Missouri’s Renewable Energy Standard (RES) to require that 20% of annual retail electricity sales be met through eligible renewable energy technologies by 2025.<sup>65</sup>
- Establish voluntary RES goals for non IOUs,<sup>66</sup> which could provide opportunities for environmental compliance, further diversify the energy resources utilized within Missouri, and result in additional economic development.

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<sup>61</sup> Missouri Public Utility Alliance, *Alliance Advantage*, “Municipals Lead in Solar Expansion” (Winter 2015) at 14, available at <http://www.mpua.org/lib/files/201411.pdf>.

<sup>62</sup> The St. James Leader Journal, *Rolla solar farm expected to be online in spring* (Jan. 28, 2016), available at <http://www.leaderjournal.com/article/20160128/NEWS/160128886>.

<sup>63</sup> Missouri Public Utility Alliance, *Alliance Advantage*, “Municipals Lead in Solar Expansion” (Winter 2015) at 14, available at <http://www.mpua.org/lib/files/201411.pdf>.

<sup>64</sup> Response of Missouri’s Rural Electric Cooperatives, filed in this proceeding Aug. 26, 2014, at 5, fn 7. *See also* AECI, *Wind and water are part of the mix*, available at <http://www.aeci.org/clean/alternative-generation/renewables--home>.

<sup>65</sup> *Missouri Energy Plan* at 223.

<sup>66</sup> *Id.*

- Improve Missouri’s Net Metering and Easy Connection Act by increasing the size of net-metered systems to a maximum of 500 kW, requiring netting on an annual basis rather than on a monthly basis, and incorporating other flexibility mechanisms<sup>67</sup> so that more distributed renewable generation systems contribute energy to the electric grid resulting in additional economic, infrastructure, environmental, and energy security benefits.
- Examine and recommend viable Missouri tax policies to create stronger incentives for wind development and to maximize supply chain development for renewable energy equipment. “[S]pecial property tax treatment for wind farms can further encourage development and other tax rules applicable to property, generation, or sales of equipment can also impact decisions by a developer when considering one state over another.”<sup>68</sup>

Implementing policy changes like those above will reduce carbon pollution and continue to build Missouri’s clean energy economy.

## VI. Conclusion

Without even intending to do so, Missouri has already taken key steps toward complying with its Clean Power Plan goal. Additional steps that would bring the state into compliance, such as expanded energy efficiency and other demand-side programs and increased development of renewable energy sources, would bring significant economic and environmental benefits to the state and to electricity consumers. Energy efficiency and demand-side programs offer net savings on electricity bills, and insulate against reliability concerns.

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<sup>67</sup> *Id.* at 223-224.

<sup>68</sup> *Id.* at 232.

Sierra Club looks forward to further engagement with the Commission as Missouri designs its Clean Power Plan compliance plan.

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Respectfully submitted,

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### **CERTIFICATE OF SERVICE**

I hereby certify that a true and correct PDF version of the foregoing was filed on EFIS and sent by email to counsel of record on this 1<sup>st</sup> day of February, 2016.

/s/ Maxine I. Lipeles

Maxine I. Lipeles