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JODI JERICH
Executive Director

ARIZONA CORPORATION COMMISSION

BY EMAIL AND WEB SUBMISSION

December 1, 2014

To: Docket ID No. EPA-HQ-OAR-2013-0602

Re: Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units;
Proposed Rule; 79 Fed. Reg. 34830 (June 18, 2014)

To Whom It May Concern:

Attached are the comments of the Arizona Corporation Commission in the above captioned matter.

Sincerely,

A handwritten signature in black ink that reads "Jodi A. Jerich". The signature is stylized with large loops and a long horizontal stroke at the end.

Jodi Jerich
Executive Director
Arizona Corporation Commission

**BEFORE THE UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.**

**IN THE MATTER OF PROPOSED)
CARBON POLLUTION EMISSION)
GUIDELINES FOR EXISTING)
STATIONARY SOURCES: ELECTRIC) Docket No. EPA-HQ-OAR-2013-0602
UTILITY GENERATING UNITS)
_____)**

**COMMENTS OF THE
ARIZONA CORPORATION COMMISSION**

The Arizona Corporation Commission (“ACC”) appreciates the opportunity to comment on the Environmental Protection Agency’s (“EPA”) proposed Carbon Pollution Emission Guidelines for Existing Sources: Electric Utility Generating Units¹ (“Proposed Carbon Rule”) and associated Notice of Data Availability (“NODA”).² The ACC has significant concerns with EPA’s Proposed Carbon Rule. The assumptions that EPA has made about the Arizona energy market are inaccurate and lead to goals for Arizona that are unachievable unless all coal plants are shut down by 2020. It is not possible to shut down all coal plants by 2020 without impacting the reliability of electric service, jeopardizing national security by rendering energy infrastructure less resilient to natural or man-made disasters, and undermining resource portfolio planning. Further, according to a recent National Economic Research Associates (“NERA”) analysis, the cost to states to implement the Proposed Carbon Rule is much higher than projected by EPA.³

EXECUTIVE SUMMARY

I. SUMMARY OF ACC’S CONCERNS WITH THE PROPOSED CARBON RULE.

The ACC opposes the Proposed Carbon Rule, and urges EPA to terminate this rulemaking and forego the rule’s adoption. In the comments that follow, the ACC will discuss

¹ 79 Fed. Reg. 34,830.

² 79 Fed. Reg. at 64,543.

³ <http://www.nera.com/publications/archive/2014/potential-impacts-of-the-epa-clean-power-plan.html>.

the many deficiencies in EPA's Proposed Carbon Rule. Even if EPA were to adopt mitigating measures, the ACC would still oppose adoption of the Proposed Carbon Rule because it is both technically and legally deficient.

The Proposed Carbon Rule treads in areas that are outside of EPA's statutory authority. Under the Proposed Carbon Rule, EPA's policies on Greenhouse Gas ("GHG") would dictate electric dispatch issues and state renewable and energy efficiency policies in the future. This will have dire consequences on the reliability of electric service, national security and resource portfolio planning. Federal Energy Regulatory Commission ("FERC") Commissioner Tony Clark captured this concern in the following passage:

Up until this point, utilities have been regulated through the influence of a number of governmental entities. State legislatures, governors, public utility commissions, state energy offices, state departments of environmental quality, EPA and FERC, to name some of the major players, all had a role to play. Any one entity could exert an influence on the process, thus each had their own niche.

EPA's proposed 111(d) regulations would dramatically alter these traditional lines of authority by creating a new paradigm of oversight of net carbon emission from a state. The process that has been envisioned by EPA through its proposed rule leaves the states with many promises of flexibility but an exceptionally difficult choice.

What was once a relationship of interacting and cooperating entities will be one in which there is a clear senior partner. In the past, EPA authority extended to specific generating plants or groups of plants, but by a state voluntarily agreeing to seek EPA approval of its overall integrated regulation of the electric industry, it will have entered a comprehensive "mother-may-I?" relationship with the EPA that has never before existed.

After an implementation plan is approved by the EPA, a state will have lost its ability to chart its own course as to how it regulates public utilities and its energy sector as a whole.⁴

EPA utilizes four building blocks that form the basis of its "Best System of Emissions Reduction" ("BSER") designed to reduce carbon emissions in each state.⁵ EPA's promise of maximum flexibility for states to structure their own plans falls short, particularly in Arizona's case. Arizona is one of a few states that have absolutely no flexibility under EPA's Proposed Carbon Rule.

⁴ Written Testimony of FERC Commissioner Tony Clark before the Committee on Energy and Commerce Subcommittee on Energy and Power, United States House of Representatives, Hearing on FERC Perspective: Questions Concerning EPA's Proposed Clean Power Plan and other Grid Reliability Challenges (July 29, 2014).

⁵ 79 Fed. Reg. at 34,855. Note, the ACC's comments apply to EPA's formulation of its principal BSER and its BSER alternative.

Other than Building Block 1 (designed to achieve heat rate improvements at the source) the other building blocks extend beyond the source or “outside the fence.”⁶ Building Block 2 would require states to substitute high carbon emitting fossil fuel generation with low carbon emitting generation by requiring redispatch to Natural Gas Combined Cycle (“NGCC”) facilities up to a 70 percent capacity factor.⁷ Building Block 3 would require states to substitute fossil fuel generation with renewable energy (“RE”) and nuclear generation.⁸ Building Block 4 would require states to use energy efficiency (“EE”) measures to reduce generation from fossil fuel plants.⁹ Instead of designing measures applied to the source, as in the past, EPA is using what it calls a new “state-wide” approach and a “portfolio” approach to impose requirements on other entities in addition to the source.¹⁰ EPA appears to have structured the Proposed Carbon Rule in this fashion because it recognized that if left to the “source,” it could not achieve the 30 percent targeted level of carbon emission rate reductions on a nationwide basis it envisioned under the Proposed Carbon Rule.

The regulation of electric and natural gas companies at the state and federal level is very complex. The states have jurisdiction over resource portfolio planning and share responsibility over electric system reliability with FERC, the North American Electric Reliability Corporation (“NERC”) and other entities. State and federal agencies share responsibility for security measures in this area as well. EPA should allow the states to continue to approach these energy sector issues in a measured and reasoned manner, rather than imposing a novel EPA plan where EPA GHG policies would dictate energy policy in a dominant way. EPA’s Proposed Carbon Rule will seriously undermine the reliability of electric service.

The four building block methodology EPA proposes in the Proposed Carbon Rule to calculate Arizona’s goal is fundamentally flawed. It results in disproportionate and vastly different results on a state by state basis. Arizona ends up with one of the most stringent carbon reduction goals¹¹ of any state, yet its current contribution to carbon emissions is lower than many

⁶ EPA Technical Support Document GHG Abatement Measures, June 10, 2014, Ch. 2.

⁷ *Id.* at Ch. 3.

⁸ *Id.* at Ch. 4.

⁹ *Id.* at Ch. 5.

¹⁰ 79 Fed. Reg. at 34,890-892.

¹¹ The state goals are expressed in adjusted output-weighted-average pounds of CO₂ Per Net MWh from all affected fossil fuel-fired EGUs in a state.

states.¹² EPA's goal calculation methodology rewards states that are contributing significantly more to the national level of CO₂ emissions because they have little or no NGCC generation, and have not yet developed RE and EE programs. On the other hand, EPA's goal calculation methodology puts an unreasonably burdensome goal upon states like Arizona that have developed balanced portfolios of coal, nuclear and natural gas generation and have aggressively implemented RE and EE programs over the past decade. As a result, these states are required to reduce their CO₂ emissions disproportionately to the level of CO₂ emissions they contribute to the national total.

In applying the four building blocks to calculate the state goals, EPA also has made many high level and generalized assumptions about Arizona that do not reflect the actual operation of the electric system, the realities of the state's gas pipeline and electric transmission systems, the ownership of generation, and the progress Arizona has already made in the areas of RE and EE. Specifically, EPA's Proposed Carbon Rule is deficient in the following ways:

- The Proposed Carbon Rule is not "BSER" for Arizona. BSER incorporates a consideration of cost, technical feasibility and other factors. The Rule as applied to Arizona is not technically feasible, has not considered remaining useful life as required by the Clean Air Act, ("CAA"), and would impose tremendous and unnecessary costs upon the state. Further, many significant costs have not been captured by EPA's analysis.
- The Proposed Carbon Rule fails to capture many significant costs when projecting its financial impact. For instance, EPA apparently did not consider "stranded costs" associated with its proposal. For Arizona alone, the Proposed Carbon Rule would result in approximately \$3.0 billion of stranded generation investment. There are also costs for Arizona involving all of the new electric transmission and gas pipeline infrastructure that would be necessary under EPA's proposal.
- The Proposed Carbon Rule would change the electric system from one of least cost economic dispatch to an environmentally based dispatch, which will have many unknown implications and costs.

¹² Based upon "2012 Fossil Rate (lbs./MWh)" provide by EPA in 20140602-state-data-summary.xlsx.

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- The Proposed Carbon Rule, despite purporting to do so, does not provide Arizona with any flexibility to structure a State Plan that would reduce GHG levels in a reasonable fashion. Under the Proposed Carbon Rule, Arizona must shut down all coal plants by 2020 in order to achieve the interim goal set by EPA of 735 lbs. CO₂/MWh. Thus, instead of flexibility and an interim goal glide-path as promised, Arizona coal units fall off a steep cliff in 2020 and must be replaced by NGCC generation.
 - The Proposed Carbon Rule would undermine the reliability of electric service reliability due to retiring all coal plants in 2-3 years from State Plan adoption. Such action would upset years of planning to achieve system diversity and redundancy.
 - The Proposed Carbon Rule would create national security concerns in Arizona. Retiring all coal plants in 2020 (while not achievable) would result in a majority of the generation serving load in the state being located in a highly concentrated geographic area, being served primarily from one gas pipeline, over congested electric transmission lines.
 - The Proposed Carbon Rule would significantly increase Arizona's reliance on natural gas-fired generation. Arizona has one of the most diversified generation portfolios in the Western States.¹³ See Exhibit 12. EPA has not considered the associated price risk and transportation constraints. Such a shift would be imprudent from economic, security, and reliability standpoints.
 - The Proposed Carbon Rule is projected by EPA to turn Arizona from a net exporter of electricity to a net importer, which could have many economic and reliability issues.
 - The Proposed Carbon Rule assigns a final goal to Arizona of 702 lbs. CO₂/MWh and an interim goal of 735 lbs. CO₂/MWh (to be achieved during the timeframe of 2020 through 2029). While Arizona is in the middle of the states as far as carbon emissions, it has the second highest carbon reduction goal in the country.

¹³ <http://cleanpowerplanmaps.epa.gov/CleanPowerPlan/>.

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- The Proposed Carbon Rule building blocks suffer from fundamentally flawed underlying assumptions as applied to Arizona:
 - Building Block 1 is unusable by Arizona utilities. It assumes all plants can achieve a national average efficiency improvement of 6 percent. Most of the generating plants owned by a load serving entity (“LSE”) have already made these improvements in Arizona and are operating at efficient levels. Further, even if such improvements were possible, they could conceivably subject the LSE to application of EPA’s other proposed rule, section 111(b), which may act to discourage any improvements to the extent they could be made.
 - Building Block 2 significantly overstates the amount of NGCC energy and capacity that could displace coal and gas steam generation, especially during peak load periods. It does this by using annual average capacity factors and nameplate ratings to redispatch the system, which is inappropriate.
 - Building Block 2 fails to recognize that over half of the NGCC generation in Arizona is merchant-owned. The load serving utilities in Arizona do not own this generation nor have any long-term rights to use it. Some of this generation is already subject to existing commercial contracts with out-of-state customers. Based on this fact alone, EPA has substantially overstated the amount of coal generation that may be replaced by NGCC generation.
 - Building Block 2 fails to take into account the lack of firm gas pipeline capacity needed to dispatch the NGCCs to the levels assumed in the application of Building Block 2.
 - Building Block 2 fails to consider the electric transmission system impacts and the lack of adequate transmission capacity to deliver the existing NGCC energy at the levels assumed.
 - Building Block 2 fails to consider the time, cost and environmental implication of building additional gas pipeline and electric transmission capacity. Under the EPA’s proposed timeline, a State Plan would be approved in 2017 or 2018. This would give Arizona only 2-3 years (assuming EPA takes 1 year to approve the final State Plan) to retire all of its coal plants, shift to NGCC generation, restructure its electric transmission lines to accommodate this drastic change and attempt to get additional gas pipeline capacity to the state.
 - Building Blocks 3 fails to give credit to states with nuclear generation (a zero carbon emitting source) but instead penalizes the 30 states with nuclear reactors by imputing a 5.8 percent “at-risk” component without considering the individual circumstances of each state.

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- Building Block 4 penalizes early adopter states such as Arizona that have had EE programs in place for decades.
 - The Proposed Carbon Rule’s building block approach uses national averages and a “one size fits all” approach on some of its assumptions. This approach fails to recognize state and regional differences. Examples include EPA’s erroneous assumption that all coal power plants can achieve a national average efficiency improvement of 6 percent, that all existing nuclear units are at risk, on average, of losing 5.8 percent of their output, and that all states can meet an annual average 1.5 percent energy efficiency goal even if they have had energy efficiency goals in place for many years.
 - The Proposed Carbon Rule fails to consider the age of existing electric generating units (“EGUs”) and the stranded investment that would result from premature shutdown of coal generation. The costs of approximately \$3 billion for stranded generation in Arizona would have significant retail rate implications.¹⁴ Arizona has the sixth youngest coal fleet in the nation and its utilities have made large investments in many of their coal plants in recent years to comply with other EPA regulations. Two of the units to be shut down would be less than 20 years old at that time and others would have undergone hundreds of millions of dollars in environmental retrofits to comply with other EPA requirements.¹⁵
 - The Proposed Carbon Rule improperly usurps the role of state public utilities commissions over resource portfolio planning and requires the state’s utilities to become heavily dependent on NGCC. This would be imprudent from a resource portfolio planning perspective.
 - The Proposed Carbon Rule improperly usurps the authority given to and exercised by state public utility commissions and federal agencies such as FERC and NERC to ensure electric system reliability.
 - The Proposed Carbon Rule’s “outside the fence” or “statewide” approach is not a

¹⁴ “Assessment of Clean Power Plan Prepared for: Arizona Utility Group,” November 21, 2014, (“PACE Study”) at 10.

¹⁵ Operating Year specified in 2012 EIA 860 data.

reasonable interpretation of the CAA.

II. SUMMARY OF ACC RECOMMENDATION IF EPA PROCEEDS WITH THE PROPOSED CARBON RULE.

Although the ACC is submitting extensive comments in this docket, including the many ways EPA must modify the Proposed Carbon Rule if it proceeds in this matter, the ACC submits that EPA does not have the legal authority to promulgate and implement the Proposed Carbon Rule under CAA section 111(d). The ACC does not recommend that EPA proceed with the Proposed Carbon Rule. If, nonetheless, EPA proceeds to adopt the Proposed Carbon Rule, then at a minimum the following issues need to be resolved. The Proposed Carbon Rule must address the disparate treatment of the various states. When more accurate and realistic assumptions are used for Arizona, its final goal should be at a minimum 1,136¹⁶ rather than 702 lbs. CO₂/MWh as calculated by EPA. The ACC recommends that EPA either eliminate the interim goal completely or create a glide-path which gives Arizona the same degree of flexibility that other states have. States should be allowed significant latitude in how they achieve the glide-path to reach the end goal in 2030.

Remaining useful life and book life must be considered by EPA, as required by the CAA. According to EPA, the significant flexibility states have with respect to the other building blocks acts to ameliorate any premature retirements of fossil fuel plants as a result of the Proposed Carbon Rule.¹⁷ However, Arizona has no flexibility and its stringent goals would severely truncate the remaining useful life and book life of many of Arizona's coal plants. The remaining useful lives and book lives of these units must be considered as required by the CAA, especially given Arizona's younger fleet and recent modifications to the fleet to comply with other EPA requirements.

EPA's Proposed Carbon Rule must be structured so that it does not impede the ability of state public utility commissions to oversee and ensure the reliability of electric service and integrated resource portfolio planning issues. Further, increased national security concerns created by the Proposed Carbon Rule must be addressed.

Smaller utilities must be given special consideration. These entities typically do not have

¹⁶ This value is based upon using the maximum monthly 2012 capacity factor for NGCC units in Arizona. The correct way to perform this analysis would be based upon an hourly dispatch of the system, which would result in a higher goal because the monthly capacity factor overstates the amount of NGCC generation that could displace oil/gas steam generation.

¹⁷ 79 Fed. Reg. at 64,544.

the resources or flexibility to deal with the broad sweeping changes envisioned by the Proposed Carbon Rule. Finally, federal enforcement is not appropriate for the “outside the fence” building blocks. The ACC has jurisdiction over many of the issues raised in three of the four building blocks. EPA enforcement of issues that the ACC oversees would be unprecedented and unlawful.

III. SUMMARY OF LEGAL ISSUES RAISED BY THE PROPOSED CARBON RULE.

There are also serious legal issues raised by EPA’s proposal. First, EPA lacks authority to promulgate these broad sweeping regulations under the CAA. EPA is barred from regulating CO₂ under section 111(d) of the CAA because it has already issued power plant standards for hazardous air pollutants under section 112. EPA’s “outside the fence” approach is not a reasonable interpretation of the CAA. No reasonable construction of the CAA gives the EPA authority over generation dispatch, grid reliability, national security and resource portfolio planning. EPA’s interpretation of the CAA is not entitled to deference in light of the regulatory framework that Congress has carefully crafted in this area. The underlying assumptions contained in the building blocks, upon which Arizona’s goals are calculated, are arbitrary and capricious, unlawful and not based upon any reliable evidence. EPA’s Proposed Carbon Rule is also unlawful because, as applied to Arizona, it is highly prescriptive and gives the state no flexibility to fashion its own plan.

Furthermore, notwithstanding the following discussion, or the ACC’s submission of its comments, nothing herein should be construed as a waiver by the ACC of any position asserted in these comments. Further, the ACC specifically reserves the right to take any position or to raise any legal or policy argument to which it may be entitled to under law in pursuing and protecting, without limitation, the public interest of the State of Arizona in this or in any other proceeding, whether before any court or in any administrative proceeding.

DISCUSSION

I. BACKGROUND.

The ACC, created by the Arizona Constitution, regulates public service corporations, including electric and gas companies in Arizona, having been granted the authority to prescribe just and reasonable rates to be collected by public service corporations and to make and enforce reasonable rules, regulations, and orders for the convenience, comfort, and safety of the

employees and patrons of such corporations.¹⁸ As a constitutionally created agency, the ACC is considered the “fourth branch” of Arizona government.¹⁹ The ACC consists of five elected Commissioners who run for office statewide. Arizona courts have found that the ACC has exclusive authority to set rates for public service corporations operating in Arizona, including Arizona Public Service Company (“APS”), Arizona Electric Power Cooperative (“AEPCO”), Tucson Electric Power Company (“TEP”) and UNS Electric, Inc. (“UNSE”). The ACC also has authority over the siting of power plants and electric transmission, which includes merchant plant owners and Salt River Project Agricultural Improvement and Power District (“SRP”).²⁰

The ACC’s authority extends to many of the issues raised in Building Block 2 (redispatch from coal fossil fuel plants to NGCC plants), Building Block 3 (Renewable Energy and Nuclear Generation) and Building Block 4 (Energy Efficiency). As discussed in more detail below, the ACC is responsible for resource portfolio planning. The ACC, along with other federal agencies, is also responsible for electric service reliability. Finally, the ACC works with other federal and state agencies to ensure that security concerns are addressed in this area.

The ACC is working with two other Arizona agencies that have a direct and substantial interest in the EPA’s Proposed Carbon Rule as well. First, the Arizona Department of Environmental Quality (“ADEQ”), which was established by the Arizona Legislature under the Environmental Quality Act of 1986, has been sponsoring Technical Working Groups on the rules which the ACC Staff has participated in along with the Arizona LSEs to assess the impacts of the Proposed Carbon Rule. ADEQ’s Air Quality Division works with EPA in developing state implementation plans (“SIPs”) under the CAA. Second, the Residential Utility Consumer Office, (“RUCO”) represents residential consumers in proceedings before the ACC with its mission being to protect the residential consumer’s interest relating to rates and quality of service. RUCO has participated in various Legal/Policy Group meetings that the ACC has sponsored on the Proposed Carbon Rule.

The costs that Arizona utilities will incur to comply with EPA’s Proposed Carbon Rule will have a direct and substantial impact on Arizona ratepayers. According to the U.S. Census

¹⁸ Ariz. Const. art. XV, § 3.

¹⁹ *Stop Exploiting Taxpayers v. Jones*, 211 Ariz. 576, 580, 125 P.3d 396, 400 (App. 2005)([T]he status of the Arizona Corporation Commission as a fourth branch of government, wholly separate from the legislative, executive, and judicial branches).

²⁰ The ACC does not generally regulate SRP with respect to rates because SRP is a political subdivision of the state.

Bureau, Arizona's median household income and per capita monthly income are both below the national average.²¹ Further, the poverty rate and the number of elderly in Arizona are above the national average.²² The 2010 U.S. Census reported that 1,232,791 individuals between the ages of 60-85 living in Arizona.²³ Of these, 118,278 are between the ages of 80-84 and 103,400 are age 85 years and older.²⁴

Another important factor in the overall scheme of electricity production is Arizona's diversity: geographical, geological, and climatological. The southern part of the state experiences very hot summers and the northern half of the state has cold winters. The peak summer temperatures in Phoenix for the last five years beginning in 2010 were 112 degrees (July 10, 2010), 118 degrees (July 2, 2011), 116 degrees (August 9, 2012), 119 degrees (Jun 29, 2013) and 116 degrees (July 24, 2014). On June 26, 1990, the peak temperature was 122 degrees. In contrast, the lowest winter temperatures in Flagstaff for the last five years beginning in 2010 were -9 degrees (December 31, 2010), -18 degrees (January 1, 2011), -3 degrees (December 28, 2012), -8 degrees (January 14, 2013) and 6 degrees (February 3, 2014).

The geographic and geologic makeup of Arizona, the availability of water, as well as the small amount of private land, also factor into the timeframe and location of plant siting. The breakdown of land ownership in Arizona is: 15 percent Private; 12.50 percent State; 44.5 percent Federal; 28 percent Tribal.²⁵

II. EPA'S PROPOSED CARBON RULE DOES NOT WORK FOR ARIZONA.

A. EPA's Approach Places An Unequal And Disproportionate Burden On Arizona.

The Proposed Carbon Rule seeks to achieve an approximate 30 percent overall reduction (from 2005 levels) by the power sector in carbon emissions nationwide by 2030.²⁶ However, EPA's Proposed Carbon Rule is not based upon each state's contribution to total U.S. carbon emissions but rather on how much carbon reduction EPA assumes is achievable by each state.²⁷

²¹ Arizona median household income is \$47,826; national average is \$51,371. <http://quickfacts.census.gov/qfd/states/04000.html>.

²² Arizona's poverty rate is 18.7%; national average is 15.9%. <http://quickfacts.census.gov/qfd/states/04000.html>.

²³ <http://quickfacts.census.gov/qfd/states/04000.html>.

²⁴ *Id.*

²⁵ <http://www.blm.gov/az/st/en/prog/maps.html>.

²⁶ 79 Fed. Reg. at 34,832.

²⁷ *Id.* at 34,892-893.

Under EPA's proposal, the states' goals are based upon the output of a set of four building blocks in which EPA have made certain underlying assumptions about the electric market in each state and the state's ability to achieve carbon reductions through the use of various building blocks, including RE and EE.²⁸ This building block approach underlies all of EPA's various proposals with respect to carbon reductions.

EPA's building blocks contain underlying assumptions that result in a disproportionate and significantly higher burden being placed on Arizona. While Arizona only accounts for approximately 1.88 percent of the total CO₂ emissions from generation units affected by the proposed rule, it is required to provide approximately 5.16 percent of the reduction by 2029. Exhibits 1 and 2 reflect Arizona's CO₂ emissions rate on a thousands of tons or mass basis and on a per capita basis. Arizona falls in the middle of the states with respect to its carbon emissions. However, as shown in Exhibit 3, Arizona's ratio of percent of reduction to percent of contribution is 2.74, the highest of any state. In Arizona's case, the proposed rule would require a 52 percent reduction in the emission rate from 2012 to 2029. This is the second largest reduction of all the states as shown in Exhibit 4.

While EPA's Proposed Carbon Rule gives some states considerable flexibility to meet their goals, this is not true for Arizona. This lack of flexibility would result in closure of all coal plants in Arizona by 2020, a goal that is simply impossible to meet while maintaining the reliability of the electric system. *See* Exhibit 5.

Through Building Block 2, EPA penalizes states like Arizona that have developed diverse generation portfolios as well as states that have a large amount of jointly owned or merchant generation. EPA wrongly assumes that all of the energy produced in Arizona is available for use within the state to offset higher CO₂ emitting EGUs. In reality, much of this power is delivered outside of the state to other loads. This is one of the fatal flaws in EPA's application of Building Block 2 that results in substantially over stating the amount of coal and oil/gas steam generation that can be displaced by the NGCC generation in Arizona. These errors result in a goal for Arizona that is unjustified. It also deprives Arizona of the flexibility EPA purports to provide to the states in implementing the Proposed Carbon Rule.

Arizona utilities have some of the youngest coal plants in the country. The newer technology utilized in some of these younger plants allows them to operate in a cleaner fashion.

²⁸ *Id.* at 34,855-854.

In addition, the utilities have all made significant improvements to many of these plants to comply with other EPA pollution control requirements. But none of this is considered by the EPA's building block methodology. Older plants with higher CO₂ emissions in other states could remain in service, while Arizona's newer, cleaner plants would need to be shut down.

EPA also penalizes early adopter states which have achieved significant carbon emission reductions not credited by the Proposed Carbon Rule. For instance, since the mid-1990s, the ACC has approved funding to support utility-sponsored EE initiatives. However, Arizona does not receive credit for EE carbon emission reductions prior to 2012. Arizona's EE goals are also initially set at higher levels than other states which do not have EE programs currently. Another example is Building Block 1, in which Arizona utilities have already achieved many of the efficiency improvements identified by EPA in establishing the 6 percent goal. Because a 2012 base year is used, Arizona utilities get no credit for the efficiency improvements made prior to this time.

In addition, Arizona and 30 other states receive no credit for zero carbon emitting nuclear generation facilities. Instead, Arizona and the other states with nuclear generation are actually penalized by EPA's treatment of these plants. EPA has penalized states with nuclear generation by giving them a more stringent goal as a result of EPA's imputing a 5.8 percent "at risk" nuclear penalty associated with at-risk plants in other states.²⁹

In summary, the EPA goal calculation methodology leads to disproportionate and arbitrary results among the states. States with large coal fleets and little or no NGCC or nuclear generation and no RE or EE programs contribute significantly more to the national CO₂ emissions than states with balanced portfolios and aggressive RE and EE programs. Yet, based upon EPA's goal calculation methodology, the states that have little or no NGCC or nuclear and no RE or EE programs are required to make a significantly smaller contribution to the overall 2030 reduction established by EPA. EPA should revise its goal calculation methodology to establish a balanced reduction strategy among the states that has some relationship to each state's contribution to nationwide CO₂ emissions.

B. EPA's Interim And Final Goals Provide Arizona With No Flexibility And Are Unworkable.

Arizona interim and final goals as calculated by EPA are 735 lbs. CO₂/MWh and 702 lbs.

²⁹ 79 Fed. Reg. at 34,870-871; EPA Technical Support Document GHG Abatement Measures, June 10, 2014, Ch. 4, Section 4.4.

CO₂/MWh, respectively.³⁰ Arizona has no flexibility to shift from one building block to another to meet its rate-based goal under the program as proposed. If even small amounts of coal generation are preserved post 2020 to serve summer peak loads, the interim goal cannot be met. This is true even if Arizona substantially increases reliance on Building Blocks 3 and/or 4 above the levels already assumed by EPA in setting Arizona's goal. If no coal generation remains in 2020, using Building Block 1 will obviously have no effect on Arizona's rate (and it would not in any event). Further, Arizona cannot increase reliance on Building Block 2 because the interim goal effectively requires the maximum redispatch possible.³¹

C. The Major Assumptions Underlying EPA's Building Block Approach For Arizona Are Fundamentally Flawed.

1. Building Block 1 as currently structured significantly overstates the efficiency improvements that can be made at Arizona's coal units.

The goal of Building Block 1, as a component of EPA's BSER, is to achieve carbon reduction through improved efficiency at affected coal units. EPA assumes a 6 percent efficiency (heat rate) improvement which would translate to a 6 percent reduction in lbs. of CO₂ per net MWh.³² The 6 percent efficiency improvement rate was derived in part from a Sargent and Lundy study, which (according to EPA) shows that the total heat rate improvements would be in a range of 4 to 12 percent if all identified best practices and equipment upgrades at a facility were made. However, the Sargent and Lundy study was a generic study that did not consider the particular circumstances of each state. The EPA also acknowledges that "[its] simplified cost analysis...will represent the costs for some EGUs better than others because of differences in EGUs' individual circumstances."³³

The coal fleet in Arizona is a relatively young fleet on average compared to other states. *See* Exhibit 6. Arizona's coal fleet has an average age of 31 years.³⁴ In addition, many of the EGUs have already made upgrades to improve efficiency. As a result, even if Arizona used

³⁰ 79 Fed. Reg. at 34,895 (Table 8).

³¹ This was demonstrated in comments submitted to EPA by ADEQ on August 22, 2014 and November 21, 2014. *See* Exhibit 7, Excel file uploaded as separate attachment. The ACC is an active participant in ADEQ's Technical Working Group, as are the utilities which the ACC regulates.

³² 79 Fed. Reg. at 34,896 (Step 2); EPA Technical Support Document GHG Abatement Measures, June 10, 2014, Ch. 2.5.10.

³³ EPA Technical Support Document GHG Abatement Measures, June 10, 2014, Ch. 2.6.2.

³⁴ Operating Year specified in 2012 EIA 860 data.

Building Block 1 in its compliance plan, the Arizona coal fleet could not on average achieve a 6 percent efficiency improvement. This Building Block as currently structured is unusable for Arizona.

One other point with respect to Building Block 1 deserves comment. If such improvements are possible, they could conceivably subject the LSE to application of EPA's other proposed rule, section 111(b), which may act to discourage any improvements to the extent they could be made.

2. The assumptions underlying Building Block 2 are inaccurate, resulting in goals for Arizona that cannot be met without shutting down all coal plants by 2020.

The goal of Building Block 2, as a component of EPA's BSER, is to reduce carbon emissions by displacing coal generation through increased operation of more expensive existing NGCC generating units, which have lower carbon emission per net MWh.³⁵ EPA does this by assuming the annual operation of a state's NGCC generation could be increased up to a maximum of a 70 percent capacity factor or until all of the 2012 coal and oil/gas generation MWh from affected units is displaced, whichever is lower, beginning in 2020.³⁶ In Arizona's case, the application of Building Block 2 accounts for 77 percent of the required reduction in the CO₂ emissions/net-MWh as proposed by EPA.

There are a number of erroneous assumptions in EPA's application of Building Block 2 that result in an overstatement of the amount of coal and gas steam generation in Arizona (and likely other states) that could be displaced by NGCC generation starting in 2020.

EPA's redispatch calculation is erroneously based upon the annual capacity factor of NGCC capacity. Arizona and other states in the desert Southwest are highly summer peaking, and as a result, the NGCC generation is used at much higher capacity factors in the summer than in the non-summer months. By using the annual capacity factor, EPA misses this fact and as a result effectively assumes energy from the non-summer months could be used in summer months to displace coal. The only correct way to determine the amount of coal generation that could be displaced by NGCC capacity is through the use of an hourly or even sub-hourly generation dispatch model which would take into account all of the appropriate generation dispatch constraints such as regulation reserves, spinning reserves, ramp rates, etc.

³⁵ EPA 20140602tsd-state-goal-data-computation_1.xlsx.

³⁶ 79 Fed. Reg. at 34,896 (Step 3).

The result of this error leads to EPA's unrealistic assumption that all of Arizona's coal generation could be replaced by NGCC capacity in the summer, and that Arizona's utilities could still meet their load obligations. This assumption is incorrect. An examination of the 2012 actual hourly data of the affected generating units using data from EPA's Clean Air Markets Division in 2012 demonstrates that the NGCC generation is not adequate to displace all of the coal generation. This data also demonstrates that the capacity factor of the NGCC generation in the summer months is about double the annual average of 27 percent used by EPA in its goal setting. *See Exhibit 8.*

The ACC realizes that EPA may not have ready access to hourly data or may lack the capability to perform an hourly dispatch. However, if EPA cannot perform the hourly analysis, then EPA must at least use the maximum monthly capacity factor for NGCC units. Monthly net energy is readily available to EPA to calculate these capacity factors, and EPA's failure to use this readily available data is unreasonable.

EPA uses nameplate capacity to estimate the amount of energy available from NGCC capacity available in the state. Arizona has 11,202 MW of NGCC nameplate capacity.³⁷ However, nameplate capacity should not be the relevant metric. For example, the maximum capacity and output from an NGCC unit is highly dependent upon air temperature and altitude. In addition, nameplate capacity does not reflect the net output available from a unit as a result of station power loads. Instead of nameplate capacity, the ACC recommends that the EPA should use net capacity, compared to the summer and winter capacity ratings contained in the 2012 U.S. Energy Information Administration's 860 electricity data report³⁸ for the Arizona affected units. The capacity used by EPA is overstated by 1,255 MW in the winter and 1,897 MW in the summer, resulting in an overestimate by EPA of the amount of energy that can be produced from the NGCC units. This error would apply to all states with NGCC capacity.

In applying Building Block 2 to Arizona, EPA also assumes all of the NGCC capacity is available for dispatch in Arizona. EPA fails to recognize that while large amounts of merchant owned generation are located in Arizona, they deliver energy to another state. In Arizona, Palo Verde is a natural trading hub that developed due to the availability of both electric transmission and gas pipeline infrastructure. Much of the NGCC generation is delivered to California. As a result, the EPA application of Building Block 2 fails to consider existing commercial

³⁷ EPA document 20140602tsd-state-goal-data-computation_1.xlsx.

³⁸ www.eia.gov/electricity/data/eia860/.

arrangements for merchant NGCC capacity and assumes the capacity can be used by load serving utilities within Arizona to displace those utilities' coal fired generation even though those utilities do not own or have any long-term rights to the capacity and energy from the merchant NGCC units. In Arizona, this represents approximately 50 percent of the NGCC capacity in 2012 that the EPA assumed would be available for use by Arizona utilities to serve load within the state.³⁹

Moreover, EPA's assumption that all coal generation could be replaced by NGCC by 2020 fails to consider the implications for the gas pipeline system in Arizona. The ACC is aware that the merchant NGCC generators frequently use non-firm pipeline capacity because it is generally available in the summer time when they run the most. As explained in greater detail in Exhibit 9, there is very little firm gas pipeline capacity and no storage capacity available at this time in Arizona. Firm gas pipeline capacity would be necessary if the Arizona utilities were forced to rely on the merchant NGCC capacity year round. In addition, there are currently no plans for the addition of new pipeline capacity to serve Arizona. The construction of new pipeline capacity can be a very lengthy process, with the recently completed Transwestern Phoenix expansion a prime example. This pipeline project took close to five years from the initial open season to operation and cost approximately \$950 million.⁴⁰ As a result, it is almost certain that there would not be adequate firm gas pipeline capacity by 2020 to meet the needs under EPA's assumptions. NERC recently identified the need for natural gas pipeline expansion under EPA's Proposed Carbon Rule and specifically identified Arizona as one of the states in which current and planned infrastructure is inadequate to handle increased natural gas demand due to the Proposed Carbon Rule.⁴¹

EPA's assumption that the existing NGCC generation could replace all of the coal generation also ignores the electric transmission limitations within Arizona. Currently, the major load pockets (Phoenix and Tucson) are served by transmission lines from the coal plants, which tend to be in the northeastern part of the state, and by transmissions lines from the Palo Verde

³⁹ 2012 EIA 860 data.

⁴⁰ See Ex. 9.

⁴¹ NERC Report "Potential Reliability Impacts of EPA's Proposed Clean Power Plan", ("NERC 2014 Report") November 14, 2014, at 14. [www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/Potential Reliability Impacts of EPA Proposed CPP Final.pdf](http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/Potential%20Reliability%20Impacts%20of%20EPA%20Proposed%20CPP%20Final.pdf). The ACC has reviewed this NERC report and agrees with all of the concerns NERC has raised and believe they support the concerns raised by the ACC.

hub, which is to the west. The Palo Verde hub is where the Palo Verde nuclear plant, several gas NGCC plants, and a number of large solar plants are interconnected. If all the coal plants are retired, as assumed by EPA in the goal setting, the majority of the energy would then be coming only from the west where the NGCC gas plants and solar plants are located. Reliance will then be primarily upon the electric transmission lines from the west, which currently are not capable of transporting all of the energy needed from the Palo Verde Hub into the Phoenix and Tucson load pockets. *See* Exhibit 10.

It is also unclear whether EPA took into account permit limits (e.g. air) on any of the NGCC units that would constrain their production output to below a 70 percent capacity factor. While the ACC does not have access to that information, EPA would, and should take such limits into account in the application of Building Block 2 for all states.

In calculating state goals under section 111(d), EPA has assigned a more stringent CO₂ emission rate to existing NGCC units (900 lbs./MWh for Arizona) than proposed for new units under section 111(b).⁴² The ACC believes that the analysis EPA conducted under its section 111(b) proposal should hold true under the section 111(d) proposal since EPA evaluated all existing units as a basis for establishing the proposed emissions rate limit for new units. In the proposed section 111(b) rule, EPA's proposed CO₂ emissions rate for new units is 1,000 lbs./MWh-gross (approximately 1,031 lbs./net MWh) for NGCC units with a capacity greater than 850 MMBtu/hour. EPA asserts that these emission rates can be met over the lifetime of a modern high efficiency NGCC unit and are representative of the emission rates of the best performing NGCC units in the country. Therefore, in a final rule EPA should use the same CO₂ emission limit proposed for new NGCC units by EPA under section 111(b) in January 2014, as a minimum emission rate assumption for existing NGCC units.

With the necessary changes discussed above, the costs projected by EPA for implementation of the Proposed Carbon Rule must be reevaluated. EPA has significantly understated the costs associated with implementation of the Proposed Carbon Rule in Arizona and other similarly situated states.

D. ACC's Response To NODA On Building Block 2: Glide-Path, Early Credit For CO₂ Emission Reductions, And Book Life Proposals.

In response to comments received after issuing the Proposed Carbon Rule, EPA issued a

⁴² EPA document 20140602tsd-state-goal-data-computation_1.xlsx.

supplemental NODA which seeks comment on a number of issues including those related to Building Block 2.

EPA acknowledged concerns expressed by stakeholders that the interim goals, as proposed, do not provide enough flexibility for some states.⁴³ In Arizona, for example, the application of Building Block 2 makes a disproportionate contribution to the overall required CO₂ reductions. This result would essentially require Arizona to choose redispatch over other measures. Furthermore, the effect of the interim goal severely limits the opportunity to fully take advantage of remaining asset value of existing coal-fired generation.

EPA went on to note that stakeholders had suggested two ways of addressing these concerns: 1) allowing credit for early CO₂ emission reductions that could be used to allow flexibility to defer additional CO₂ emission reductions until later in the 2020-2029 period; and 2) phasing in Building Block 2 over time, just as Building Blocks 3 and 4 are currently phased in.⁴⁴ Under the first approach, full accounting of emission reductions begins in 2020 but credit could be received from certain pre-2020 reductions that would be used to reduce the amount of reductions needed during the 2020-2029 period. Under the second approach, states could choose early (pre-2020) implementation of state goal requirements, which would provide states with the ability to achieve the same amount of overall emission reductions, but do so by making some reductions earlier.⁴⁵

If EPA proceeds to a final rule, it should allow states to establish, in their compliance plans, a glide-path over the period 2020 through 2029 to achieve an end goal set in the rule. Further, each state should be allowed significant latitude in how it achieves that glide-path. The ACC believes that both options described in the NODA, credit for early reductions and phasing in of Building Block 2, are options that a state should be able to use in establishing its glide-path.

EPA is also taking comment on phasing-in redispatch changes under Building Block 2. This is in response to stakeholder comments that significant shifts of generation away from coal-fired generators to NGCC units will be difficult for some states to achieve by 2020 due to technical, engineering, infrastructure, and other limitations, and may limit cost-effective options for emission reductions.⁴⁶ Phasing-in would be more consistent with Buildings Blocks 3 and 4

⁴³ 79 Fed. Reg. at 64,544.

⁴⁴ *Id.* at 64,545.

⁴⁵ *Id.* at 64,545-546.

⁴⁶ *Id.*

where increased utilization is phased-in between 2020-2029.

EPA notes that stakeholders have suggested at least two additional ways that a trajectory for a gradual phase-in could be developed to respond to concerns. First, a phase-in schedule could be developed for Building Block 2 on the basis of whether, and to what extent, any additional infrastructure improvements (e.g., natural gas pipeline expansion or electric transmission improvements) are needed to support expanded use of existing natural gas-fired generation.⁴⁷ Second, Building Block 2 could be modified to respond to stakeholder concerns about the pace with which generation in some states may need to be shifted from higher-emitting to lower-emitting units. EPA suggests that one way to address these concerns regarding stranded investments is for the agency to take account of the book life of the original assets as well as the book life of any major upgrades to the asset.⁴⁸ The ACC strongly agrees with this second approach.

The ACC recommends that EPA establish its goals allowing coal plants to operate for their remaining useful life and book life unless a commitment to closure has already been made to comply with other EPA regulations (such as regional haze). For a unit that has made recent major capital expenditures to comply with other EPA regulations, the remaining useful life would take those investments into consideration. Therefore, although we appreciate EPA's consideration of book life in the NODA, it should not be used as a substitute for the agency's statutory obligation to allow for the consideration of affected units' remaining useful life.

In its NODA, EPA states that due to the flexibility provided by EPA in its approach to establishing state goals, and the flexibility provided to states in developing plans to achieve those goals, its proposal provides states the flexibility to specify appropriate requirements for individual EGUs, including coal-fired EGUs, taking into account the potential for stranded investments and other unit-specific factors.⁴⁹ However, Arizona has no flexibility under the building blocks. EPA offers that, to the extent stakeholders are concerned that the tools available are inadequate regarding stranded investments, an additional way to address these concerns may be for the agency to take account of the book life of the original generation asset, as well as the book life of any major upgrades to the asset, such as major pollution control retrofits. EPA requests comment on whether and how book life might be used as part of the basis for the

⁴⁷ *Id.*

⁴⁸ *Id.* at 64,548-549.

⁴⁹ *Id.*

development of an alternative emission glide path, or used to evaluate whether other ways of developing an alternative glide-path would address stakeholder stranded investment concerns.

The ACC believes that the final EPA rule must allow states to consider and use book life and remaining useful life (assuming 40 years) of the original generation asset, as well as consider the impact on book life and remaining useful life of any major upgrades for pollution control equipment to the asset, even if that results in those units operating beyond 2030. Book life and remaining useful life can be used to extend the glide-path or to raise the overall goal. For Arizona, five coal-fired generating units have remaining book lives that would result in their economic operation into the period between 2020 and 2030: Cholla 1, 3, 4 (through 2024), Springerville 1 (through 2025), and Springerville 2 (through 2030). There are also five coal units that have remaining book lives that would result in operation beyond 2030: Apache ST3, Coronado 1 and 2, and Springerville 3 and 4.⁵⁰ Absent consideration of book life and remaining useful life, the stranded investment in Arizona could be up to \$3 billion.⁵¹

The ACC also believes that EPA should recognize actions being taken by utilities within the interim period to comply with other CAA programs, such as regional haze, that result in the cessation of coal-firing at affected units. If owners of these coal-fired units have made a commitment either to shut down or convert to natural gas before the date of the final rule, it would be unreasonable to include them for redispatch under Building Block 2 prior to their committed shutdown or conversion date.

EPA's NODA also sought comment on EPA's application of Building Block 2 on a regional basis, under which generation from fossil fuel-fired steam units within a region is shifted to NGCC units within the region. The ACC does not support a regional approach to the application of Building Block 2. As pointed out in the ACC's comments, there are already serious flaws in the EPA's application of Building Block 2 on a state basis, and using a regional basis would simply exacerbate some of those issues. A prime example is the failure of EPA's goal calculation to recognize the impact on gas pipeline and electric transmission system infrastructure needs that would result within a state if coal generation were to be shifted to existing NGCC. Applying Building Block 2 on a regional basis in EPA's goal calculation model would compound this failure by not considering whether the necessary electric transmission and

⁵⁰ Operating Year specified in 2012 EIA 860 data.

⁵¹ "Assessment of Clean Power Plan Prepared for: Arizona Utility Group," ("PACE Study") November 21, 2014, at 10.

gas pipeline infrastructure exists to support such interstate energy transfers within whatever region EPA chose to use.

The ACC previously commented that EPA's approach for Building Block 2 ignores the ownership of NGCC units. It simply assumes that the utilities that own fossil steam generation will be able to purchase energy from NGCC merchant generators. Applying Building Block 2 on a regional basis would exacerbate this problem. A regional approach would presume that a state reliant on another state by EPA's calculations could actually procure energy from generators within that other state as one possible compliance option. In bilateral wholesale markets, such as those used in Arizona and other surrounding states, this may not be possible even if the necessary infrastructure were in place. The ACC believes that using the regional approach proposed in the NODA is not appropriate and would in fact reduce a state's compliance flexibility by assuming one state could rely upon NGCC generation in another state in determining its goal when access to that generation may not be available.

E. ACC's Response To NODA On Building Block 2: Disparity In State Goals Proposal.

In its NODA, EPA recognizes concerns as to the disparity in state goals between states with little to no NGCC generating capacity and those with significant amounts of NGCC capacity. To mitigate this concern, EPA seeks comment on whether the final rule should include a requirement for those states with little or no NGCC generation to employ natural gas generation beyond what EPA included in the proposed rule, including construction and/or increased utilization of new NGCC units and additional co-firing of natural gas at existing fossil steam units.

Specifically, the EPA seeks comment on:

...how this approach to add a minimum requirement for states that currently have little or no NGCC capacity should be related to the proposed approach that requires states with significant amounts of unused NGCC capacity to utilize up to 70% of that capacity. Note at the outset that the total nationwide amount of NGCC generation assumed under building block 2 is approximately 1,450 terawatt-hours (TWh). Should the minimum generation shifts in states with little or no NGCC capacity be in addition to this total amount? Alternatively should the total level of gas use for purposes of building block 2 be held the same? Under the latter approach, the amount of generation from states with higher amounts of NGCC capacity would be reduced in amounts equal to the additional NGCC generation applied to states with zero or low-NGC capacity states, for building block 2. This

approach would further reduce the disparities between states with little or no NGCC capacity and those with significant amounts of NGCC capacity.⁵²

The ACC believes this approach could help mitigate the significant disparity between state goals as proposed in the rule, but only if EPA reduces the NGCC generation of states with existing higher amounts of NGCC capacity. Note, this may not be true for tribal lands. EPA should not increase the total amount of NGCC generation assumed in the goal calculation, as this would not provide any relief to states with existing high amounts of NGCC. This approach would distribute the burden of switching to more natural gas generation to all states, and allow states to maintain a more appropriate resource mix. The ACC also believes making the corrections to the goal calculations would accomplish a more realistic and balanced approach.

F. Building Block 3 Has Flaws Which Work Against Certain Regions And States.

Under Building Block 3, states and utilities may use an expanded amount of less carbon-intensive generating capacity to lower the net carbon output goal.⁵³ Low or zero carbon generation would be substituted for more carbon intensive generation at affected EGUs. BSER for Building Block 3 is comprised of three components: renewable energy, nuclear generation at risk, and new nuclear generation.⁵⁴ EPA applied the first two components in calculating Arizona's proposed CO₂ emission rate goal. EPA identifies these measures as ways to reduce generation output at affected fossil fuel generating units and includes a forecasted level of renewable energy and nuclear generation at risk in calculating Arizona's goal.⁵⁵

1. EPA's treatment of nuclear generation in Arizona is arbitrary.

EPA recognizes the value of new and preserved nuclear capacity in the following passage:

Nuclear generating capacity facilitates CO₂ emission reductions at fossil fuel-fired EGUs by providing carbon-free generation that can replace generation at those EGUS. Because of their relatively low variable operating costs, nuclear EGUs that are available to operate typically are dispatched before fossil fuel-fired EGUs. Increasing the amount of nuclear capacity relative to the amount that would otherwise be

⁵² 79 Fed. Reg. at 64,550.

⁵³ EPA Technical Support Document GHG Abatement Measures, June 10, 2014, Ch. 4.

⁵⁴ *Id.*

⁵⁵ 79 Fed. Reg. at 34,866-871.

available to operate is therefore a technically viable approach to support reducing CO₂ emissions from affected fossil fuel-fired EGUs.⁵⁶

The Palo Verde Nuclear Generating Station, the only nuclear power plant in Arizona, produces about 35 percent of the electric power generated in Arizona. It is the largest nuclear power plant in the United States.⁵⁷ The plant is located about 50 miles west of the Phoenix metropolitan area, and serves about 4 million consumers in Southern Arizona and Southern California (Los Angeles and San Diego). The plant became fully operational in 1988 and in 2011 obtained an extension of its operating license to 2047.

Under the Proposed Carbon Rule, Arizona does not receive any credit for this large nuclear facility. Instead the state is actually penalized because EPA, relying on an EIA Annual Energy Outlook report which projects an additional 5.7 GW of capacity reductions to the nuclear fleet nationwide, imputes 5.8 percent of nuclear capacity in Arizona as “at risk”.⁵⁸

By treating nuclear power in this way, EPA’s proposed “at-risk” provision penalizes Arizona by assigning it a more stringent goal than would be the case if it did not have such generation. There is no evidence whatsoever that the Palo Verde Generating Station is at risk of closing prematurely, certainly not before the expiration of its extended operating licenses in 2047. The effect of EPA’s adjustment in the Proposed Carbon Rule is to lower Arizona’s lbs. CO₂/netMWH goal by 3 percent. EPA’s assumption that the Palo Verde Nuclear Plant is at risk for purposes of goal calculation is arbitrary.

A better way to incent the continued operation of existing nuclear plants is to allow states to include the output from existing nuclear plants above an established threshold as a compliance option in state compliance plans, thereby giving states with existing nuclear generation additional flexibility in developing their compliance plans. One way to do this would be to establish a threshold capacity factor for existing nuclear plants. To the extent the nuclear plant is able to operate above that capacity factor, the incremental generation would be included as a component of Building Block 3. Operation below the threshold capacity factor would have no impact on the state’s compliance. The ACC is aware that other parties may be suggesting an

⁵⁶ 79 Fed. Reg. at 34,870.

⁵⁷ <http://www.infoplease.com/ipa/A0004790>.

⁵⁸ EPA also states that it is aware of six nuclear EGUs at five plants that have retired or whose retirements have been announced since 2012, none of which are in Arizona. 79 Fed. Reg. at 34,870.

approach like this and may include specific recommendations with respect to the threshold to be used.

2. The RE regional goals should be computed based upon all states in the region and reflecting the appropriate Arizona RE goal.

Another component of Building Block 3 would require substitution of higher CO₂ emitting fossil fuel generation with zero emitting RE generation.⁵⁹ EPA developed a “best practices” scenario for RE generation based upon Renewable Portfolio Standard (“RPS”) requirements established by the states. The best practices consist of a level of renewable resource development for each state (recognizing regional differences) that EPA believes is reasonable. The forecast of RE is based upon what EPA says is an analysis of the potential on a regional basis because the renewable resource potential varies regionally. Thus, EPA divides the country into six regions – East Central, North Central, Northeast, South Central, Southeast and West. Arizona is included in the Western region along with California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming. The best practices scenario for each state consists of an annual RE growth factor applied to the state’s historical RE generation, subject to a maximum RE generation target. The growth factors and targets were developed separately for each of the six regions.

The EPA used 2012 as the base year for each of the states in the region and summed up the amounts for all states in the region to determine a regional starting level. EPA’s approach was to calculate a goal amount of RE for 2029 based upon the average of the 2020 RE standards for each state, excluding from the average states with no state mandated RPS goal, and then calculating the annual growth rate required to reach the 2029 goal from the region’s actual 2012 utility scale RE energy. EPA then applied the annual growth rate on a state by state basis to each state’s 2012 actual RE energy beginning in 2017 to determine that state’s yearly total RE MWh from 2017 through 2029. Each state’s RE MWh was limited to its 2020 RPS goal. In Arizona, the total RE energy could not exceed 10 percent. This has the effect of lowering a state’s lbs CO₂/net MWh goal and accounts for 5 percent of the reduction in Arizona’s proposed goal.⁶⁰

In calculating the 2020 effective RE levels to establish the RE level for goal calculation for the Western region of 20.625 percent, EPA left out the states with a zero target. The ACC

⁵⁹ EPA Technical Support Document GHG Abatement Measures, June 10, 2014, Ch. 4.

⁶⁰ 79 Fed. Reg. at 34,867-868; EPA Technical Support Document GHG Abatement Measures, June 10, 2014, Chapter 4.

believes these states with zero targets should be included in the calculation of the average, which would reduce the average to 16.00 percent.

With respect to the goal of 10 percent in 2020, which was used for Arizona in calculating the average goal for the Western region, EPA's assumptions contain two errors. First, this goal, taken from the ACC's Renewable Energy Standard Tariff ("REST") rules, does not apply to all load in Arizona. The REST is applicable to utilities under the jurisdiction of the ACC. This only accounts for about 60 percent of the load in Arizona. In addition, of the 10 percent goal for 2020 in the ACC's rules, 30 percent must come from distributed generation, which the EPA has not included in its goal calculations. EPA should adjust the goal used for Arizona down to 7 percent to account for these exclusions. Similar adjustments for other states may need to be made.

3. Response to EPA's NODA on Building Block 3.

In its NODA, the EPA also seeks comment on whether states could take credit for renewables developed in other states if they were attributable to state policies such as RPS programs. State targets could be developed by defining regional RE targets, then assigning shares of those regional targets to individual states within the region. EPA's NODA stated that stakeholders have expressed interest in a target-setting methodology that takes into account interstate exchanges of RE in the calculation of state goals. It has been suggested that such an approach would better align with existing state RE policies and potential claims on a given state's RE by parties from other states (such as renewable energy certificates and power purchase agreements).⁶¹ The ACC does not recommend that EPA change the approach used to estimate a state's RE for goal setting, other than making the refinements in the methodology described previously in these comments. With respect to accounting for RE in compliance, the ACC recommends that the only way the states and EPA can ensure that double counting is avoided is to rely on certified renewable energy certificates ("REC") for compliance, whether they are bundled or unbundled from the energy. This approach comports with the Federal Trade Commission Part 260 Guides for the Use of Environmental Marketing Claims.⁶²

EPA also notes that some stakeholders have raised concerns that each state's goal is not consistent in its application of the BSER for Building Block 2, as compared with Building

⁶¹ 79 Fed. Reg. at 64,551-552.

⁶² <http://www.ftc.gov/sites/default/files/attachments/press-releases/ftc-issues-revised-green-guides/greenguides.pdf>.

Blocks 3 and 4.⁶³ The goal calculation for Building Block 2 not only reflects an increase in less carbon-intensive generation, but also applies an equal downward adjustment to each state's total existing fossil steam generation level in 2012, reflecting a generation shift away from higher-emitting fossil steam generation and toward lower-emitting NGCC generation. The result is that total generation is held constant, with only the mix of more and less carbon-intensive generation changing. In contrast, the approach in the proposal for incorporating Building Blocks 3 and 4 in the goal calculations does not reflect shifting generation away from fossil units, because the total amount of generation is increased without any offsetting decrease in generation from 2012 fossil generation levels. The ACC believes that EPA's approach to including Building Blocks 3 and 4 in the goal calculation as proposed on June 18, 2014, is more appropriate than the alternatives proposed in the NODA. As EPA indicates, its original approach allows states to use EE and RE to offset load growth that may result in increased usage of the affected EGUs. In Arizona, which is a growing state with population expected to grow by 36 percent from 2012 to 2030, accounting for such growth is important.⁶⁴ Since EPA has not provided for any other allowance for load growth in the goal calculation, the ACC believes that EPA's original approach at least provides for some level of growth in the goal setting.

G. EPA Has Erroneously Assumed That Arizona Utilities Can Continue To Achieve A 1.5 Percent Reduction In Load Each Year Under Building Block 4.

EPA includes Building Block 4 as a component of BSER on the basis that the resulting reduction in load will reduce the demand for generation from the affected fossil generating units.⁶⁵ EPA projects a level of EE for each state based upon a forecast of load at the state level and an assumed EE level increase of 1.5 percent of load each year beginning in 2017. For Arizona, this results in a cumulative level of EE MWh in 2029 equal to 11.42 percent of Arizona's 2012 load. This component of BSER has the effect of lowering a state's lbs. CO₂/net MWh goal and accounts for 15 percent of the reduction in Arizona.⁶⁶

While the ACC finds that the methodology used by EPA to estimate net cumulative savings as a percent of electricity sales is not unreasonable, the ACC does take exception to the

⁶³ 79 Fed. Reg. at 64,547-548.

⁶⁴ <https://population.az.gov/population-projections>.

⁶⁵ 79 Fed. Reg. at 34,871.

⁶⁶ EPA document 20140602tsd-state-goal-data-computation_1.xlsx.

assumed 1.5 percent per year level of EE used for Arizona and other states that have had energy efficiency requirements in effect for a number of years. Although the ACC's current EE rules have only been in effect since 2011, Arizona has promoted EE and other DSM programs since the early 1990's. By 2008, Arizona's largest utility had avoided 455,773 tons of carbon dioxide emissions through the sale of Compact Florescent Light ("CFL") bulbs alone. Additionally, the EPA has assumed that Arizona's EE Standards encompass the entire state when in reality there are a number of electric service entities throughout Arizona that do not fall under the ACC's purview and are not required to adhere to the EE rules. Of the fifteen electric utilities regulated by the ACC, only nine are required to participate in the EE Standard; out of the nine electric companies required to participate in the EE Standard, only one is currently meeting the energy efficiency trajectory incorporated in the rule.

The ACC believes the EPA's current approach to EE penalizes Arizona and other states that are leaders in EE. While Arizona historically has achieved 1.5 percent per year, the ACC does not believe continued performance at this level through 2030, as assumed by EPA, is a reasonable expectation. The ACC believes EE savings become more difficult to sustain as program lives increase. As EE and DSM programs age, there are fewer and fewer cost-effective and impactful measures to be utilized, thus leaving only increasingly expensive incremental EE measures. Given that Arizona has already implemented many of the "easy to obtain" measures, Arizona utilities are left with the increasingly difficult task of getting consumers to invest in higher priced EE measures that offer lower short-term returns.

In 2013, 61 percent of APS's total residential EE savings came from CFLs.⁶⁷ With the incandescent lighting phase-out, soon households will have already converted to higher efficiency lighting and utilities will no longer be able to take advantage of this relatively cost-effective and "easily obtained" EE measure. Given the large percentage that EE lighting contributes to the overall goal, and the inability for utilities to realize energy savings derived from EE lighting more than once, it is unrealistic to believe 1.5 percent EE savings can be sustained long term.

While the utilities in Arizona continue to pursue additional measures and programs, they become harder, and more costly to achieve, making a 1.5 percent per year increase less realistic. EPA relied on 12 state studies to set its expanded annual program target savings improvement

⁶⁷ <http://images.edocket.azcc.gov/docketpdf/0000152867.pdf>.

rate at 1.5 percent per year. Out of the 12 studies, 11 contain multiple scenarios with different sets of assumptions to demonstrate wide ranges of what is achievable under alternative financial, technological, and behavioral environments. However, there is no documentation on how each study's respective average annual improvement rate was calculated. Considering that EPA used these studies as the foundation for its 1.5 percent annual improvement rate, the ACC has a serious concern with whether or not 1.5 percent is an appropriate estimation for an achievable and sustainable annual improvement rate over a 13-year period.

Further, the ACC believes it impractical to assume that EE will outpace load growth. EPA used a load growth percentage of 1.3 percent to calculate future system load while assuming year over year EE growth based off of system load at 1.5 percent. The ACC believes the percentage used to calculate load growth is within reason; however, assuming that EE will grow faster than electricity demand beyond 2017 has very complex implications. If this EE growth cannot be sustained, more carbon reduction measures would be required under the Proposed Carbon Rule. Considering that under the current Proposed Carbon Rule, Arizona is already required to discontinue all coal generation, Arizona would be required to shut down existing NGCC to meet the carbon goal. However, due to the discrepancy between load growth and EE savings, Arizona would be shutting down old NGCC plants to meet carbon goals while building new NGCC to meet demand. Construction of this new replacement capacity, as well as related infrastructure, would take time to plan, permit, finance, and build. Additionally, if Arizona could not identify the discrepancy between load growth and EE growth at an early enough stage, grid reliability or CO₂ emission goals could be compromised.

In NERC's November 2014 Report, NERC collected EE program data which was embedded in load forecasts for each assessment area. The annual EE growth provided by utilities to NERC as a portion of total internal demand since 2011 ranged from 0.12 to 0.15 percent. As noted by EPA in Chapter 5 of its GHG Abatement Measures Technical Support Document (page 5-23), a 2009 Electric Power Research Institute ("EPRI") study determined an achievable annualized potential range for EE of 0.20-0.40 percent per year, which was classified as realistically achievable and maximum achievable potential, respectively, through 2030 at the national level. This study was later updated by EPRI in 2014 using a conventional bottom-up engineering approach. The study concluded an average achievable annualized potential of 0.50-

0.60 percent per year, (which was classified as achievable and high achievable).⁶⁸

Based upon the above discussion, the ACC believes that a 1.5 percent EE growth rate is unsustainable for purposes of the Proposed Carbon Rule. Thus, for the purpose of goal setting, Arizona proposes that EPA lower the efficiency reduction level to 0.6 percent per year for those states with EE programs already in effect. If the carbon goal is set using a realistically achievable EE percentage, then there is more flexibility for states to actually utilize Building Block 4 as a carbon abatement measure. The current Proposed Carbon Rule with EE savings of 1.5 percent per year presents challenges for states with existing EE programs and in essence creates a de-facto requirement effectively eliminating all flexibility related to Building Block 4.

The ACC believes that if EPA decides to base the goals in its final rule on the inclusion of Building Block 4, it should do so based upon an EE goal of 0.60 percent per year, rather than 1.5 percent per year.

H. Severability.

Finally, EPA states that the building blocks are severable, because they can be implemented independently of one another. Thus, if any of the building blocks are found to be an invalid basis for BSER, EPA asserts that the goals would be read just to reflect the emissions reductions from the remaining building blocks.⁶⁹ The ACC would be very concerned if under this approach, one or more of the building blocks were determined to be invalid and EPA either proceeded to enforce the goals using the remaining building blocks or recalculated and applied new goals without going through a new notice and comment process. The ACC believes this would be unlawful, arbitrary and capricious.

I. The Proposed Carbon Rule Will Undermine The Provision of Reliable Electric Service.

EPA's building blocks, as applied to Arizona, result in a goal that provides Arizona no flexibility, and that would require Arizona to shut down all coal plants by 2020 in order to comply. However, such a compliance requirement is not possible without jeopardizing grid reliability and the reliability of electric service.

Arizona utilities would need to construct or acquire other non-coal resources in order to reliably serve their loads.⁷⁰ Based upon an analysis completed by the Arizona utilities, they

⁶⁸ EPRI 2014 Study (April 2014).

⁶⁹ 79 Fed. Reg. at 34,892.

⁷⁰ "Assessment of Clean Power Plan Prepared for: Arizona Utility Group," ("PACE Study") at 7

would need to acquire over 2,000 MW of additional generation capacity at a cost of over \$2 billion by 2020 to meet their firm load obligations if they stopped use of all coal units.⁷¹ In addition, the fuel and purchase power costs would increase by over \$17 billion through 2030.⁷² While the Arizona utilities might be able to meet some of these needs through acquisitions or power purchase agreements with existing NGCC generators, not all of these needs can be met without new capacity being built. However, the ability to develop sufficient new capacity by 2020 is not possible. Given that a state will not know until 2017, at the earliest, if its plan is approved, there will not be adequate time to develop, site and construct new generation, electric transmission and associated gas pipelines if the new generation is gas fired. NERC acknowledged these same concerns in its November 2014 Report when it concluded that more time would be necessary to implement the Proposed Carbon Rule to accommodate reliability enhancements, pointing out that areas that experience a large shift in resource mix are expected to require electric transmission enhancements to maintain reliability.⁷³

In Arizona, the geographic distribution of the non-coal-fired generation assets gives rise to several concerns when the coal plants are shut down. It limits the transmission access to the largest load pockets. As a consequence, the grid becomes immediately less robust in the event of transmission disruption. This is not a concern that can be quickly mitigated by new-build generation or transmission projects. It would be difficult, and costly, to site new NGCC generation at several of the existing coal generation locations to take advantage of existing power transmission, because of the altitude impact on NGCC output and because gas transmission pipelines do not run near these locations.

There may also be significant transmission reliability issues that will need to be addressed if all, or even substantial amounts, of Arizona's coal generation must be shut down. A recent study completed by the Southwest Area Transmission ("SWAT") Sub-regional Planning Group, attached as Exhibit 11, evaluated different levels of coal shutdowns under different resource replacement scenarios in 2019 for the Arizona-New Mexico-Southern Nevada footprint. This analysis found that, under a scenario in which about 4,800 MW of coal generation was shut down and replaced with about 3,900 MW of renewable resources and 900 MW of

(November 21, 2014).

⁷¹ *Id.*

⁷² *Id.* at 10.

⁷³ NERC 2014 Report at 2.

reduced flow to California, there was inadequate inertia and dynamic reactive capability, leading to instability in the electric system under certain contingencies. As indicated, this was a preliminary “book ends” study, and the only conclusion that can really be made is that there could be potential problems that will need to be addressed, and that more detailed study is needed. A broader geographic area should be considered in order to identify impacts on the broader Western Interconnection.

Since 2000, the ACC has completed Biennial Transmission Assessments (“BTA”) for the Arizona Transmission System in accordance with A.R.S. § 40-360.02.G. The purpose of the BTA is to ensure the adequacy of the existing and planned transmission facilities in Arizona to meet the present and future electrical energy needs in a reliable manner. The BTA is completed based upon ten year transmission plans filed annually in accordance with A.R.S § 40-360.02.A by any entity anticipating the construction of transmission within the next ten years in Arizona. In addition, the BTA contains specific studies such as the Ten Year Snapshot and Extreme Contingency Analysis, both of which look at the aggregate impact of all planned transmission. Over the years, BTAs have also directed the Arizona utilities to perform additional studies to address concerns raised in the BTA process. For example, the ACC has requested assessments of transmission that would enhance the access to renewable resources. In the most recent BTA approved in October 2014, the utilities have been directed to assess the potential impact on the reliability of the electric system in Arizona of a significant reduction in coal generation.⁷⁴ However, the ACC stresses that issues of this magnitude take time to examine and resolve.

Arizona, along with other western states, has worked to create a reliable, flexible grid that will be impacted, possibly severely, by a shift in the planned resource mix and location that is anticipated as a result of the Proposed Carbon Rule. More time is necessary to further study the impacts of these possible changes.

The electric system is an interconnected grid and reliability issues in one state can have impacts that reach well beyond its borders. For example, the impact on system stability and dynamic reactive capacity of retiring large amounts of coal could impact the entire Western Interconnect as demonstrated in the SWAT study discussed above. Setting state goals that require shutting down coal by 2020 does not allow adequate time for system planning and implementation of the necessary changes that would be required to correct identified issues.

⁷⁴ <http://images.edocket.azcc.gov/docketpdf/0000157574.pdf>.

The nature of Arizona's climate leads to substantial load peaking in the summer months. As described earlier, to serve load in Arizona during peak summer months requires full use of all NGCC *as well as* all coal-fired generation. But as explained above, continued usage beyond 2020 of any coal jeopardizes compliance with both the interim goal and the final goal, barring unrealistic advances in the installation and adoption of Building Blocks 3 and 4 measures.⁷⁵ The realistic outcome is that shuttering coal fired generation by 2020 to comply with the interim goal will result in an inadequate amount of resources to meet load during peak periods in the summer. Due to the need for power for cooling, and Arizona's attractiveness as a destination state for elderly, fixed income citizens, reliance on Building Block 2, as the proposed Arizona compliance targets require, will cause a clear health and safety problem.

Each spring, electric utilities and major gas pipeline companies present to the ACC an update on their preparedness to meet the needs of consumers for quality and reliability of service during the peak summer season. The utilities include assessments about their resource and transmission system adequacy to meet projected peak demands. They also discuss emergency plans that are in place to respond to extreme outage events, extreme system conditions, and events of natural disaster, including storms or wild fires. The major gas pipeline companies also discuss the readiness of the gas pipeline system to meet the demand of the gas fired generation in the state. The process allows the ACC to monitor and assess the readiness of the utilities to provide reliable electric service for the upcoming summer peak load period.

Annually, each fall, Arizona's gas utilities and gas pipeline companies present an update on their preparedness to meet the needs of consumers for quality and reliability of service during the winter season. These utilities include assessments on the adequacy of their supply contracts to meet projected peak demands. The major gas pipelines also discuss the readiness of the gas pipeline system to meet the projected demand as well as their operational readiness and plans for addressing emergency situations. The process allows the ACC to monitor and assess the readiness of the utilities and pipelines to provide reliable gas service for the upcoming winter period.

The EPA's Proposed Carbon Rule threatens to overtake well thought out existing state processes designed to ensure reliable electric service to consumers with a hastily devised program where the rules of the game have not yet been developed.

⁷⁵ However, it should be noted RE and EE are not adequate substitutes for baseload generation. RE is not always available and EE is not dispatchable as are other energy sources.

J. The Proposed Carbon Rule Will Jeopardize National Security.

Due to the location of affected EGUs in Arizona, the effect of applying the Proposed Carbon Rule also adversely affects national security with respect to critical energy infrastructure facilities by rendering that infrastructure less resilient to natural or man-made disasters. Protection of critical energy infrastructure is important both for national security and economic reasons. FERC recognizes the significance of such assets and has an express carve out from its obligations under the Freedom of Information Act (“FOIA”) to protect information relating to such assets.⁷⁶ NERC, too, requires utilities to plan in such a way as to maintain consistently robust and reliable electric systems.⁷⁷

EPA’s assumption that existing NGCC generation could replace all of the coal generation also creates an energy security concern for Arizona.⁷⁸ As explained above, the majority of the NGCC and solar capacity, as well as the Palo Verde nuclear plant, are located west of Phoenix and are connected to the Palo Verde Hub. Even if adequate gas pipeline and electric transmission existed or could be constructed by 2020, use of all of the NGCC capacity at Palo Verde to serve Arizona load exposes Arizona to significant risk. A major disruption or outage of the facilities there would likely black out Arizona and other portions of the Western interconnection.

The application of Building Block 2 will also result in a major shift in the fuel source that EPA assumes could be used to serve Arizona electric load. There will be a shift to natural gas, away from the current more optimal mix of generation sources. EPA however, has failed to consider that Arizona has only two major natural gas pipeline systems serving the state and no in-state natural gas storage. As a result, adoption of EPA’s plan puts Arizona at significant risk from natural gas supply disruptions, as well as price increases.⁷⁹

EPA’s assumption that the existing NGCC generation could replace all of the coal generation ignores the transmission limitations within Arizona. Currently, the major load pockets (Phoenix and Tucson) are served over transmission from coal plants (which tend to be in the northeastern part of the state), from the Palo Verde hub (which is to the west) as well as some

⁷⁶ <http://www.ferc.gov/legal/ceii-foia/foia/basics.asp>.

⁷⁷ <http://www.nerc.com/AboutNERC/Pages/default.aspx>.

⁷⁸ PACE Study at 13.

⁷⁹ Note, this issue ignores the fact that the existing gas pipeline is not adequate to supply the increased natural gas usage that would result from the use of the existing NGCC units in base load/intermediate operation mode.

generation located within the load pockets. The Palo Verde hub is where the Palo Verde nuclear plant, several thousand MW of gas NGCC plants, and a number of large solar plants are interconnected. If all the coal plants are retired, as assumed by EPA in the goal setting, the majority of the energy would then be coming only from the Palo Verde Hub to the west of the load pockets. This reliance on congested transmission from the Palo Verde Hub into the load pockets creates a security and reliability issue.⁸⁰

K. The Proposed Carbon Rule Is Contrary To Sound Resource Portfolio Planning.

Arizona currently has a model resource portfolio: 27.3 percent natural gas, 28.8 percent nuclear, 36.2 percent coal, 6.1 percent hydro and 1.4 percent renewable. *See* Exhibit 12. This diversification protects consumers by ensuring adequate baseload and peaking capacity and by minimizing exposure to market fluctuations in any one fuel type as well as fuel disruptions.

The ACC requires Arizona's electric utilities to engage in Integrated Resource Planning ("IRP"), a practice which provides a forward-looking approach to energy planning. Through these rules, each utility must demonstrate how it will meet its future energy requirements in an efficient, cost-effective, and responsible manner.

The ACC conducted its first IRP in 1989 and originally did it on a 3 year schedule with a 10-year forecasting plan. Currently, the rules require that every two years, Arizona's public utilities file a 15-year plan describing how they will fulfill the energy needs of their customers. The companies must identify the sources of the energy they will generate and what percentage of each source will be employed. In the odd years, utilities still submit data, but the full study is conducted every other year.

The IRP rule includes requirements for utilities to identify how they will comply with demand response, EE, and RE Standards. Additionally, the ACC has approved amendments to the IRP rules that would enhance consideration of other elements such as how much water electric companies use in the generation of energy and the level of harmful emissions and by-products such as coal ash that are created through generation. These rules establish utility reporting requirements to facilitate the ACC's review of the utilities' long-range plans.

Adoption of the Proposed Carbon Rule will result in a resource portfolio that is

⁸⁰ Note, this issue ignores the fact that the existing transmission system is not adequate for the existing NGCC generation at Palo Verde to serve the additional load now handled by the coal units.

unreasonably leveraged toward natural gas-fired generation. Such a shift would be imprudent from economic, security, and reliability standpoints.

Further, EPA must recognize that RE sources are not replacements for baseload generation. Renewable sources, such as wind and solar, are variable in nature and, as a result, are less reliable in providing energy and grid reliability services such as voltage support, frequency response, and contingency support. Nuclear units, coal units and other forms of baseload capacity provide these necessary services that are crucial for grid reliability, without which any power system cannot operate safely and reliably.

EPA's proposal to substantially reduce Arizona's use of coal resources in a very short time is counter to good resource planning and resource portfolio management, and in essence, would make Arizona hostage to the vagaries of the gas market in the future. It will result in increased exposure to natural gas price fluctuations and disruptions.

The diversification of Arizona utilities' resource portfolios not only affects reliability but directly impacts rate base. A large portion of a utility's rate base is its resource portfolio. In addition, purchased power agreements, as part of a resource portfolio, can have a great impact on a utility's expenses. Therefore, the rates that ratepayers ultimately pay include the utilities' costs to provide service.

L. EPA's Proposed Carbon Rule Does Not Consider Remaining Useful Life, Underestimates Costs And Is Likely To Result In High Rate Increases And Rate Shock For Arizona Consumers.

1. EPA's Proposed Carbon Rule does not allow the state to consider remaining useful life as required by section 111(d).

EPA did not consider remaining useful life as required under the CAA, nor does its proposal allow the states to consider it. EPA relies upon the purported flexibility afforded states under its Proposed Carbon Rule, as somehow excusing its failure to consider the remaining useful life concept.⁸¹ However, as already discussed, not all states have the same degree of flexibility under the Proposed Carbon Rule. As previously demonstrated, Arizona has virtually no flexibility at all.

Arizona has a younger coal fleet and Arizona utilities have made large investments in their coal plants in recent years to comply with EPA regulations. Two coal plants were placed in service less than ten years ago. Failure to consider the age of coal generating units will result in

⁸¹ 79 Fed. Reg. at 34,925.

stranded investment from premature closure of coal plants, which will have significant retail rate implications and reliability implications.

EPA's NODA requests comment on the use of book life to address concerns about the pace with which generation in some states may need to be shifted from higher-emitting to lower-emitting units. EPA suggests that one way to address these concerns regarding stranded investments is for the agency to take account of the book life of the original assets as well as the book life of any major upgrades to the asset.⁸² The ACC strongly agrees with this approach.

As the economic regulator in Arizona, the ACC requires utilities to demonstrate that the costs they incur to provide service are "prudent" before they are allowed in rate base and their costs are collected from customers. All else being equal, the ACC would typically not find it prudent if a utility decided to retire an EGU well before the end of its remaining useful life and book life. Such retirements would result in significant stranded costs to ratepayers in Arizona. The ACC is also concerned because NERA estimates the costs of implementation of the Proposed Carbon Rule to be much higher than EPA projects.⁸³ As noted above, the Arizona median household income is \$47,826.00 as compared to the national average household income of \$51,371.00. Arizona's poverty rate is 18.7 percent compared to a national average of 15.9 percent.

2. EPA's illustrative IPM results are not supportable.

In addition to the modeling EPA performed to create the compliance targets, EPA also used its integrated planning model ("IPM") to demonstrate the cost/benefit impacts of adoption of the Proposed Carbon Rule.⁸⁴ While the IPM suggests that the Proposed Carbon Rule produces a net positive outcome for Arizona, it uses incorrect assumptions and does not provide the level of detailed system modeling to identify the power system reliability issues and gas pipeline constraints that would arise within Arizona. The IPM's analysis of positive cost/benefit impacts is flawed in several ways. It does not consider all costs associated with the Proposed Rule's implementation and some of its underlying assumptions are inaccurate.

For example, in reviewing the results for Arizona, EPA assumes that coal units can be shut down in one year and then brought back on line in future years. This assumption is totally

⁸² 79 Fed. Reg. at 64,549.

⁸³ <http://www.nera.com/publications/archive/2014/potential-impacts-of-the-epa-clean-power-plan.html>.

⁸⁴ 79 Fed. Reg. at 34,839.

unreasonable. EPA also assumes that certain coal units can be operated as cycling/peaking units, an assumption that is not true for the coal units in Arizona. Finally, the import capacity into Arizona from New Mexico, while taken by EPA from a Western Electricity Coordinating Council (“WECC”) report, is overstated by over 3,000 MW.⁸⁵ In EPA’s modeling about 90 percent of the imports to Arizona come from New Mexico, which would be substantially reduced if the proper import capability were used.⁸⁶

Another example is EPA’s apparent failure to consider the cost of “stranded assets” in its analysis. In Arizona, this alone could amount to \$3.0 billion.⁸⁷ Further, it does not appear that EPA contemplated all of the electric transmission and gas pipeline constraints within Arizona with adoption of its Proposed Carbon Rule. Thus, the EPA would have to also factor in the costs associated with building additional transmission lines and pipelines in Arizona when the coal plants are shut down. These costs are likely to be very significant. In addition, some of the existing transmission lines within Arizona may no longer be necessary leading to their retirement before the end of their useful lives. This is another cost associated with EPA’s proposal that needs to be considered for Arizona.

In addition, EPA’s Proposed Carbon Rule is projected in the IPM analysis to turn Arizona from a net exporter of electricity to a net importer. This would be a drastic change for the state which could have serious consequences for resource diversity, grid reliability and the rates ultimately paid by Arizona consumers.

Finally, the inputs in the model differ from the assumptions made in the emission targets. This creates a disparate result in that EPA is using the IPM to backstop the 111(d) emission targets; however, the two are using a completely different set of assumptions and inputs to do so.

In summary, EPA’s illustrative IPM results are not supportable.

M. The Proposed Carbon Rule Does Not Recognize The Significant Efforts Already Made And Being Made In Arizona To Reduce CO₂ Emissions.

Arizona utilities are already achieving significant reductions to their coal portfolios and the state’s carbon emission rate as evidenced through the ACC’s IRP process. An EPA enforcement overlay in areas not traditionally subject to EPA’s regulatory oversight is not necessary or appropriate.

⁸⁵ WECC 2014 Power Supply Assessment, https://www.wecc.biz/Reliability/2014PSA_draft.pdf.

⁸⁶ EPA IPM analysis results.

⁸⁷ PACE Study at 10.

The ACC’s renewable initiatives go back to 1996 or earlier when the ACC rules provided for a solar portfolio standard, which set a goal of 0.2 percent from solar energy by 1999 and 1 percent by 2003. Subsequently, the ACC approved an Environmental Portfolio Standard, (“EPS”) which required regulated utilities to generate 0.4 percent of their power from renewables in 2002, increasing to 1.1 percent in 2007-2012. Solar power was to make up 50 percent of the total renewables in 2001, increasing to 60 percent in 2004-2012. In 2003, the ACC began its REST rulemaking proceedings. In 2006, the ACC approved the REST, which requires regulated utilities to produce at least 15 percent of their retail sales from renewable resources by 2025.⁸⁸ The intent of the REST rules was to “increase renewable energy resources for diversity of the fuel supply, to enhance system reliability and safety in a post 9/11 era, and to mitigate against volatility in non-renewable fuel prices.”⁸⁹

The ACC also has a long history promoting EE. Since the mid-1990’s, the ACC has approved funding to support utility-sponsored EE initiatives. By 2008, Arizona’s largest electric utility company had already avoided 911,545,684 pounds of carbon emissions due to its EE programs alone. In addition, in 2011, the ACC adopted the Electric Energy Efficiency Rules,⁹⁰ which concern electric energy efficiency and demand-side management (“DSM”) programs and measures. The rules require utilities to obtain 2.2 percent energy efficiency savings by 2020.

In the 2014 IRPs filed with the ACC, three of the four LSEs that file biennial IRPs under the ACC’s IRP rules include plans to retire, convert to natural gas, or reduce ownership in coal-fired power plants:⁹¹

- Arizona Public Service Company (“APS”)
 - Retiring Cholla Units 1, 2 and 3 (647 megawatts)
- Tucson Electric Power Company (“TEP”)
 - Reducing ownership in Springerville 1 by 197 megawatts
 - Reducing ownership in San Juan by 170 megawatts
 - Converting Sundt Unit 4 from coal to natural gas (125 megawatts)
- Arizona Electric Power Cooperative, Inc. (“AEPSCO”)
 - Converting Apache ST2 from coal to natural gas (175 megawatts)

⁸⁸ A.A.C. R14-2-1801-1816.

⁸⁹ <http://images.edocket.azcc.gov/docketpdf/0000041234.pdf>, (ACC Decision No. 68566).

⁹⁰ <http://images.edocket.azcc.gov/docketpdf/0000116125.pdf>, (ACC Decision No. 71819).

⁹¹ <http://images.edocket.azcc.gov/docketpdf/00001576585.pdf>.

The remaining LSE that files biennial IRPs (UNS Electric, Inc.) has no ownership in coal-fired generation.

In total, APS, TEP and AEPSCO have announced plans to reduce their existing coal fleets by 1,314 megawatts through retirements, reductions in ownership and conversions to natural gas. In addition, these three LSEs and UNS Electric, Inc. (“UNSE”) plan to add significant amounts of renewable resources, energy efficiency programs and natural gas-fired resources in future years. As a result, while today the four LSE’s depend on coal to produce 47 percent of the electric energy supplied to their customers, by 2028, the four LSE’s will utilize coal for only 30 percent of the electric energy supplied to their customers. See Exhibit 12.

The ACC’s IRP process allows for evaluation of the various resource portfolio options being considered by the LSEs in Arizona. It is an important state level process that takes into account many factors to ensure that the portfolios of the Arizona LSEs reflect a careful balancing of competing considerations to ensure reliable and affordable electric service in Arizona.

III. THE ACC DOES NOT RECOMMEND THAT THE EPA ADOPT THE PROPOSED CARBON RULE, HOWEVER, IF THE EPA ELECTS TO PROCEED WITH THE RULE, THE ACC RECOMMENDS THE FOLLOWING REVISIONS.

A. EPA Must Revise Arizona’s Final Goal So That It Is Based Upon Realistic And Accurate Assumptions.

1. The final goal for Arizona must recognize that some fundamental changes to the building blocks are necessary.

a. Building Block 1.

Based upon the ACC’s comments in Section II above, a 6 percent improvement in coal plant heat rates is not reasonable for Arizona’s plants. The ACC recommends that EPA reduce Building Block 1 to 1 percent.

b. Building Block 2.

Based upon the ACC’s comments on Building Block 2 in Section II above, the ACC recommends the following changes in applying Building Block 2.

First, the ACC recommends that EPA consider how the system is actually operated in redispatching NGCC generation to displace coal and oil/gas steam. Reliance on an annual capacity factor is not appropriate. Instead, the ACC recommends that the EPA perform an hourly dispatch of the system. However, to be conservative, the ACC has used the maximum monthly

capacity factor for the NGCC generation in performing its analyses contained herein. For Arizona, this would be 49.4 percent, which is comparable to the 70 percent maximum capacity factor.⁹²

Second, the ACC recommends that EPA use the same CO₂ emission limit proposed for new NGCC units by EPA under 111(b) in January 2014, as a minimum emission rate assumption for existing NGCC units when setting the states' goals. That rate would be 1,031 lbs./MWh-net for NGCC units with a capacity greater than 850 MMBtu/hour.

Third, the ACC recommends that EPA use the average seasonal capacity for NGCC generation rather than the nameplate capacity when redispatching the NGCC generation. For Arizona, this would be 9,626 MW.⁹³

Fourth, the ACC recommends that EPA take into account the fact that a significant amount of the merchant owned generation located in Arizona is delivered out of state. This represents approximately 50 percent of the NGCC capacity in 2012 that the EPA assumed would be available for use by Arizona utilities to serve load within the state.⁹⁴

Fifth, based upon the ACC's comments on the need to consider the coal units' remaining useful lives, the EPA's final rules should include any coal units whose remaining useful life and book life extends beyond 2030 as continuing to operate in setting state goals. This should also include coal units that have made recent major investments for prior EPA mandated emissions reductions.

c. Building Block 3.

Based upon the ACC's comments on Building Block 3 in Section II above, the ACC recommends three changes in the calculation of RE for use in Building Block 3.

First, the ACC recommends that EPA revise the calculation of the Western regional goal so that all states, even those with no established state RE rules and hence a zero target now, are included at zero.

Second, the ACC recommends that EPA correct the Arizona goal to exclude the distributed generation portion of the goal.

Third, the ACC recommends that EPA remove the 5.8 percent at-risk nuclear component from states with nuclear generating facilities whose units are not "at-risk".

⁹² EIA 2012 Form 923.

⁹³ EIA 2012 860 data.

⁹⁴ *Id.*

Fourth, the ACC recommends that EPA allow states in their State Plans to establish a threshold capacity factor for existing nuclear plants. To the extent that the nuclear plant is able to operate above that capacity factor, the incremental generation would be included as a component of Building Block 3. Operation below the threshold capacity factor would have no impact on the state's compliance. The ACC is aware that other parties may be suggesting an approach like this may include specific recommendations with respect to the threshold to be used.

d. Building Block 4.

Based upon the ACC's comments on Building Block 4 in Section II above, the ACC recommends that EPA reduce the target annual EE goal to 0.6 percent per year.

2. Arizona's final goal must be recalculated based upon these changes.

If the EPA retains its building block methodology for establishing state goals, the ACC believes that making the corrections to the goal calculations discussed previously in the ACC's comments would accomplish a more realistic and balanced approach.

These changes are summarized below:

1. Use the maximum 2012 monthly capacity factor of 49.4 percent for Arizona as the base when redispatching NGCC generation up to 70 percent capacity factor.⁹⁵
2. Use the average seasonal rating of 9,626 MW for Arizona NGCC units when redispatching to displace coal.⁹⁶
3. Use the 1031 lbs. CO₂/Net MWh for NGCC units as allowed in section 111(b) for new NGCC units.
4. Allow coal units to operate through their remaining useful lives and book lives assuming a book life of 40 years, and allow for an additional 20 year life for older plants where major costs have been incurred for EPA required upgrades or retrofits. (Apache ST3, Coronado 1 & 2, Springerville 3 & 4 in service burning coal to beyond 2030).
5. Remove the at-risk nuclear component of Building Block 3.
6. Reduce the Building Block 1 efficiency improvement to 1 percent.
7. Include states without RE requirements and Arizona at 7 percent in determining the regional 2020 average RE goal of 16.00 percent for the

⁹⁵ EPA document 20140602tsd-state-goal-data-computation_1.xlsx.

⁹⁶ EIA 2012 860 data.

Western Region.

8. Reduce the EE goal to 0.6 percent per year for states that had EE goals in place in 2012.

All of the modifications proposed by the ACC to EPA's goal calculation methodology could easily be applied to all similarly situated states. For Arizona, these changes will result in the following goals as shown in the table below:

Goal Calculations Reflecting ACC Recommended Changes		
Cumulative Changes Reflecting ACC Proposed Changes	Cumulative Effect of ACC Recommended Changes on Final Goal (2030 and thereafter) lbs. CO2/MWh⁹⁷	Percent Reduction from 2012 Actual lbs. CO2/MWh
1. EPA Goal Calculation	702	52%
2. Use Maximum Monthly Capacity Factor	794	45%
3. All Prior Changes Plus Use of Seasonal Ratings	846	42%
4. All Prior Changes plus use 1,031 lbs. CO2/Net MWh emissions for NGCC units	932	36%
5. All Prior Changes plus allow coal units to operate through their remaining useful life and book life	982	32%
6. All Prior Changes plus remove at risk Nuclear component from Building Block 3	1,009	31%
7. All Prior Changes plus reduce efficiency improvements in Building Block 1 to 1%	1,028	29%

⁹⁷ These values shown for the recommended ACC changes are based upon using the maximum monthly 2012 capacity factor for NGCC units in Arizona. As noted in the ACC's comments, the correct way to perform this analysis would be based upon an hourly dispatch of the system. This would result in a higher goal than shown as even using the monthly capacity factor overstates the amount of NGCC generation that could displace coal and oil/gas steam generation.

Goal Calculations Reflecting ACC Recommended Changes		
Cumulative Changes Reflecting ACC Proposed Changes	Cumulative Effect of ACC Recommended Changes on Final Goal (2030 and thereafter) lbs. CO2/MWh⁹⁷	Percent Reduction from 2012 Actual lbs. CO2/MWh
8.All Prior Changes plus include states with no RE goal in the calculation of the regional average RE goal and adjust Arizona RE goal to 7%	1,042	28%
9. All Prior Changes plus reduce EE goal to 0.6% per year for states with EE programs in place in 2012	1,136	22%

Finally, the Proposed Carbon Rule provides that once the final and interim goals are set for a state, the goals cannot be changed. The ACC recommends that EPA reconsider this finding and instead allow states an opportunity to file for relief and for a change to the final or interim goals if necessary, based upon changed circumstances or good cause shown.

B. EPA Must Also Revise The Interim Goal For Arizona, Eliminate It, Or Allow The States To Establish Interim Compliance Targets And A Glide-Path.

The EPA should allow states to establish interim compliance targets and a glide-path as a part of the state’s State Plan filed for approval with EPA. No interim goal should be established by EPA. EPA has repeatedly stated that its goal is to give states flexibility. As explained in the ACC’s comments, the goals set for Arizona do not provide that flexibility; in fact, they provide Arizona with no flexibility as 90 percent of the goal must be achieved by 2020 in order for Arizona to meet the proposed interim goal. Removing the interim goal could restore some flexibility for Arizona.

The timing of the application of Building Block 2 should be moved beyond 2020 to allow adequate time and flexibility for states to use all of the building blocks to comply with the end goal in 2030. By applying Building Block 2 fully in 2020, EPA has not reflected the remaining useful life of coal units, allowed time for replacement resources, or for potential gas pipeline and electric transmission infrastructure improvements that might be needed to increase the use

of NGCC generation.

In addition, and as discussed previously, electric transmission system upgrades would be required if increased generation from the existing NGCC plants located west of the load pockets in Arizona are relied upon as compliance options. By applying Building Block 2 fully in 2020, EPA has not allowed adequate time for the development and construction of such transmission, or for natural gas pipelines, which can take five or more years to develop, permit and construct.

EPA's final rule should also allow the states complete flexibility in identification and inclusion of methods of compliance. In the Proposed Carbon Rule, EPA claims that states are not limited solely to Building Blocks 1 through 4 as a means of compliance. Rather, states may identify and include other compliance methods. EPA should give some indication as to what would qualify as allowable compliance methods in addition to Building Blocks 1 through 4. For example, transmission and distribution projects that reduce system losses should be allowed as an option for compliance. The EPA should include this flexibility as part of the final rule.

There are two options for providing true flexibility when creating the State Plans. The best option is the elimination of the interim goal. The State Plan already requires biennial reporting,⁹⁸ which will provide the EPA with an updated measure of how the states are progressing. There is no legitimate reason to force a state into having a pre-requirement when it already has a final goal to meet. In order to meet the goal, states will need to reduce emissions over time. Allowing states to determine the best path to do that will be in the best interest of the states and the ratepayers who ultimately may have to fund these changes.

The second option is to establish a glide-path towards the goal that will allow states to more effectively reach the target than if they had to abruptly comply with a majority of the goal 10 years prior to the final goal. This would also allow states to take into consideration the remaining useful lives and book lives of coal plants that would reach the end of their book lives during the 2020-2030 time period. The best option is to eliminate the interim goal, allowing a glide-path towards the end goal with biennial check-ins as required by the State Plan.

C. **EPA Must Take Steps to Ensure that the ACC's (and Other States') Role in Ensuring the Provision of Reliable Electric Service, Monitoring National Security Concerns and Overseeing Resource Portfolio Planning Will Not be Adversely Impacted by the Proposed Carbon Rule.**

FERC, NERC and the state public utility commissions must be able to continue to ensure

⁹⁸ Proposed Carbon Rule at 46.

the reliability of electric service. Furthermore, the Proposed Carbon Rule will usurp the responsibility of State Public Utility Commissions to oversee resource portfolio planning. EPA needs to ensure that long existing state and federal processes are not displaced by a hastily devised plan to reduce carbon emissions in the states. Ensuring the reliability of electric service is a complex undertaking involving a myriad of state and federal agencies. Further, the provision of retail electric service in the states varies. Some states have retail electric competition with multiple providers of service and some states participate in Independent System Operators or Regional Transmission Organizations. Arizona, and other states like Arizona, do not have either of these, but rather its utilities are vertically integrated and participate in bilateral power markets. Resource decisions are made and ultimately approved by the ACC through traditional resource planning and ratemaking processes, not through centralized markets as in some RTOs.

In its November 2014 Report, NERC points out that NERC Reliability Standards and Regional Entity criteria must be met at all times to ensure reliable operation and planning of the Bulk Power System.⁹⁹ Arizona supports these standards and expects all the electric market participants in Arizona to comply with any standards applicable to them. NERC also notes that stakeholders have expressed to NERC staff their concerns regarding the need for additional time to mitigate the impacts of the Proposed Carbon Rule.¹⁰⁰ Comments expressed to NERC reflect many of the same concerns the ACC has expressed in these comments: that EPA's proposed time line does not provide adequate time to develop sufficient resources to ensure continued reliable operation of the electric grid by 2020. NERC points out that to attempt to do so would increase the use of controlled load shedding and potential for wide-scale, uncontrolled outages.¹⁰¹ The ACC supports NERC's recommendation that the EPA, FERC, the DOE, and state utility regulators employ the array of tools within their respective regulatory authorities to develop a reliability assurance mechanism, such as a "reliability back-stop." These mechanisms should include timing adjustments and granting extensions where there is a demonstrated reliability need.

D. The ACC Recommends That Smaller Utilities Be Given Special Consideration.

The ACC endorses others' comments that EPA should exercise its authority in this

⁹⁹ NERC 2014 Report at 22.

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

rulemaking to set out a separate category for small public and cooperative electric generating units to limit the impact of the Proposed Carbon Rule on these power providers. Establishing this subcategory would allow these unique utilities to comply with the Proposed Carbon Rule, while lessening the financial impact on them and their unique customer load.

Electric power cooperatives have dramatically different organizational structures and their customer bases are unique in certain respects as well. Cooperatives are member owned, not for profit entities. Arizona's largest electric generation cooperative, Arizona Electric Power Cooperative, Inc. ("AEPCO") owns and operates one generating station, and provides wholesale power to six rural electric cooperatives, which are not for profit systems that serve end use customers.

The end use customers served by the six rural cooperatives are also unique. They serve approximately 150,000 customers (some of which are located in California and New Mexico). Their customers are mostly residential, and have incomes that are approximately 33 percent below the federal poverty level. They include members of seven Native American tribes. Electric power service is extremely vital to the economies and life-styles of the rural communities in which these customers live, and the costs that the proposed rule would impose on AEPCO and the other cooperatives would result in increased rates to the end use customers. Indeed, it is not certain that power could be sustained if AEPCO were to comply with the Proposed Carbon Rule.

Under each of the scenarios that AEPCO has run, its Apache Generating Station, the only generation that it owns and operates, would have to be shut down. It appears, based on AEPCO's evaluation of the carbon emission goal that EPA set for Arizona, that EPA contemplated replacement of AEPCO's coal-fired sources by other existing NGCC generation. There are several problems with these assumptions.

First, it is not clear that gas generation capacity actually exists. EPA may have overstated the amount of capacity available to AEPCO, particularly considering the amount of available capacity in Arizona and the southwest, and considering that other Arizona providers will also be forced to convert to natural gas from coal to comply with the Proposed Carbon Rule. Second, similar to its analysis for other, larger providers, it is not clear that the gas capacity will be available during peak periods when it is most needed, and coal-fired units cannot be used interchangeably for peaking purposes. Third, the cost of acquiring the capacity, even if it is available, would be prohibitively expensive to AEPCO, as it estimates that the cost of natural gas

would be roughly double that of the cost of coal. Thus, the increase in the cost of fuel alone could result in a substantial rise in cost for the end use customers. Fourth, it is not clear that, even if it were able to switch to natural gas units, the required carbon intensity could be achieved, in part due to the design and elevation of the Apache station. AEPCO may then be forced to rely on EE and RE for compliance with the Proposed Carbon Rule. However, AEPCO does not directly participate in EE programs and RE; only its members do.

In summary, EPA has mistakenly assumed that AEPCO can shift its energy mix, in a short period of time, without considering transmission availability, generation limitations, natural gas availability, gas transportation infrastructure, and other factors that are unique to small providers like AEPCO and its member cooperatives.

EPA either did not know, or did not consider the correspondingly limited financial base and resources of AEPCO. AEPCO's capital, for example, unlike the financial capital of larger electric providers, is patronage capital. It is basically earnings contributed by its members that are legally required to be returned to the members in the future. Together with its limited operating revenues and debts, AEPCO's financial resources are extremely limited, precluding, for example, any opportunity to purchase any additional generation at a reasonable cost.

EPA has assured AEPCO that it, like other electric providers, has wide flexibility to comply with the Proposed Carbon Rule. Without repeating the foregoing comments, it is clear that AEPCO, in reality, has no flexibility to comply with the Proposed Carbon Rule unless it shuts down the Apache Generating Station, with the resulting devastating effects, discussed above, to its end use customers.

At pages 16-19 of its September 29, 2014, comments to the EPA, AEPCO ably detailed what the ACC submits are thoughtful and reasonable alternative measures for small public and cooperative utilities to comply with the Proposed Carbon Rule if EPA exercises its authority to create a small public and cooperative category for compliance with the Proposed Carbon Rule. Instead of "escaping" compliance altogether, AEPCO points out that its proposal, while providing it the ability to continue to serve its end users, would provide for reasonable reductions in the carbon emission rate.

Among other things, the proposal would require reductions in the emissions rate, require certain redispatching to gas units, and require the shutdown of all small public or cooperative units at the earlier the end of their remaining useful lives or December 31, 2039.

In conclusion, considering the size of the small public and cooperative utilities, their

limited financial resources, the proportional amount of the emissions from their facilities, and the potential impact of the Proposed Carbon Rule on their unique customer base, the ACC supports AEPCO's proposal for the creation of a small public and cooperative utility category for purposes of the Proposed Carbon Rule.

E. Federal Enforcement Is Not Appropriate For The "Outside the Fence" Building Blocks.

1. Building Block 2.

Because of the importance of the underlying issues in Building Block 2 to reliable electric service, national security and resource portfolio planning, Building Block 2 should not be subject to federal enforcement. In addition, EPA enforcement is not possible where EPA lacks authority over non-source entities.

2. Building Blocks 3 and 4.

Similarly, a federal enforcement scheme is not appropriate for Building Blocks 3 and 4. For many years, the ACC has had RE and EE requirements in place for electric utilities. The ACC's rules require the utilities to obtain ACC approval for many aspects of these programs on at least a yearly basis. The evolving nature of both programs, including approval of various EE measures and RE projects, makes inclusion of these programs under a federal enforcement scheme highly problematic. If state plans are forced to contain specific requirements on renewables and energy efficiency, the ACC's ability to make appropriate changes to these programs and properly discharge its constitutional authority would be adversely impacted.

3. The final performance period.

The Proposed Carbon Rule defines the final performance period as 2030 and thereafter, when the state must meet the final emission performance level specified in Section 60.5740(a)(3) on a 3 year calendar year rolling average starting January 1, 2030.¹⁰² Defining the final performance period as 2030 and thereafter for the State Plan is unreasonable. Especially for Building Blocks 2, 3, and 4, an EPA enforcement overlay into perpetuity is arbitrary and capricious and is not necessary or appropriate.

F. States Should Be Given Credit For Early Adoption Of Measures Resulting In Reduced Carbon Emission Rates, Rather Than Being Penalized.

As discussed earlier, the ACC has had RE and EE standards in place for many years.

¹⁰² 79 Fed. Reg. at 34,953. Once the final goal is reached a continued EPA enforcement overlay is unreasonable.

Arizona has also taken other actions which had the result of reducing GHGs but has not been given any credit for these actions. Through its IRP process, the ACC has also worked with the electric utilities in Arizona to achieve and ensure a balanced energy portfolio that is not too reliant on any one particular energy source. Further, the Arizona utilities have already taken measures to improve operation efficiencies at their plants. All of these actions have led to reductions in GHGs, but the Proposed Carbon Rule appears to penalize Arizona and its utilities for these actions, rather than reward them.

In the Proposed Carbon Rule, EPA requested comment on proposed alternatives for inclusion of allowing credit for early actions related to EE and other state initiated carbon reduction actions (as early as 2005), or allowing for credit for reductions achieved prior to the performance period. The ACC encourages EPA to give the broadest favorable treatment for state actions taken to reduce CO₂ emissions, and supports a 2005 baseline to facilitate this. Allowing credit for early action will provide a state with increased flexibility in developing its State Plan. Two examples where this would be appropriate are Building Blocks 1 and 4.

G. The Disparate And Unequal Treatment Of The States Needs To Be Remedied.

The Proposed Carbon Rule may accomplish a 30 percent reduction to carbon emissions however, it exacts much greater emission reductions in some states than others and the reductions have no relationship to existing CO₂ state emission levels. This application imposes a heavier burden on some states as opposed to others. Using Arizona as an example, the state has a well-balanced energy portfolio and fairly young fleet of EGUs. However, some states which have a less balanced and more polluting energy mix face significantly less reductions than Arizona. The result is that states like Arizona are being forced to carry a more significant burden than other states because of its diverse energy mix and early implementation of RE and EE. As the ACC has shown, the EPA goal calculation methodology leads to disproportionate and unequal results among the states. States with large coal fleets and little or no NGCC or nuclear generation contribute significantly more to the national CO₂ emissions than states with balanced portfolios and aggressive RE and EE programs. Yet, based upon EPA goal calculation methodology, those states contribute significantly less to the overall 2030 reduction established by EPA. The ACC recommends that the EPA revise its goal calculation methodology to establish a balanced reduction strategy among the states that at least has some relationship to the state's contribution to nationwide CO₂ emissions.

IV. THERE ARE SERIOUS LEGAL ISSUES RAISED BY THE EPA’S PROPOSAL.

The ACC has submitted extensive comments, discussing in detail many ways in which EPA can modify the Proposed Carbon Rule pursuant to which Arizona may continue its progress in reducing GHGs through the proper exercise of its constitutional authority and responsibility. However, although it has submitted extensive comments, the ACC submits that the EPA does not have the legal authority to promulgate and implement the Proposed Carbon Rule under CAA section 111(d) for all of the reasons discussed in its comments in the following section.

A. EPA Does Not Have The Authority To Promulgate These Broad Sweeping Regulations Under The Clean Air Act.

1. EPA is barred from regulating CO₂ under section 111(d) of the CAA because it has already regulated power plant pollutants under section 112.

Section 111(d) of the CAA requires states to submit plans to EPA imposing “standards of performance” for pollutants emitted by existing stationary sources. This section 111(d) mandate is narrow, however, and applies only when the pollutant: (1) is neither covered by a National Ambient Air Quality Standard nor listed as a “hazardous air pollutant” under section 112; and (2) would be regulated under a new source performance standard under section 111(b) if the existing source were a new source.

Section 111(d)(1) provides, in pertinent part:

The Administrator shall prescribe regulations which shall establish a procedure similar to that provided by section 7410 [110] of this title under which each State shall submit to the Administrator a plan which (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) [108(a)] of this title or emitted from a source category which is regulated under section 7412 [112] of this title but (ii) to which a standard of performance under this section would apply if such existing source were a new source, and (B) provides for the implementation and enforcement of such standards of performance.¹⁰³

Under section 111(d), EPA clearly may not regulate CO₂ when it is emitted from a source category that is regulated under section 112. EPA acknowledges this when it says that the “Section 112 Exclusion appears by its terms to preclude from Section 111(d) any pollutant if it

¹⁰³ 42 U.S.C.A. § 7411.

is emitted from a source category that is regulated under Section 112.”¹⁰⁴ EPA also acknowledges that the U.S. Code’s version of section 111(d) can be read as not to encompass GHGs, because GHGs are emitted from EGUs, which are a source category regulated under section 112.¹⁰⁵

Despite the clear language of the statute, EPA concludes that its GHG regulations for existing EGUs are legally authorized under section 111(d).¹⁰⁶ EPA concludes that, because of Congress’ failure to reconcile two conflicting 1990 amendments (one passed by the House, the other by the Senate), section 111(d) authorizes EPA to establish section 111(d) guidelines for GHG emissions from EGUs, even though EGUs are a source category regulated under Section 112 (*Id.*, page 22), (Section III).¹⁰⁷

Under the House amendment, section 111(d) standards of performance are barred for air pollutants “emitted from a source category . . . regulated under section 112.”¹⁰⁸ Because fossil-fuel power plants are a source category regulated under section 112, the House amendment restricts EPA from regulating GHG emissions from existing EGUs. The Senate amendment, on the other hand, places off limits only “air pollutants.” Arguably, there is a conflict between the two amendments.

Both amendments appear in the Statutes at Large, but only the first was incorporated in the U.S. Code; the other was merely a clerical error. Nonetheless, EPA argues that the second entry, despite being a clerical error, creates ambiguity and thus, it is entitled to deference under *Chevron*.¹⁰⁹ EPA’s position is incorrect. The “Code of Laws of the United States current at any time shall . . . establish prima facie the laws of the United States . . .” 1 U.S.C. section 204(a). The statute on its face is clear. There is no need to resort to legislative history but, even if one does, there is no inconsistency or ambiguity.

EPA is barred from regulating CO₂ under section 111(d) of the CAA because it has already regulated power plants under section 112.

¹⁰⁴ 79 Fed. Reg. at 34,853, Legal Memorandum for Proposed Carbon Pollution Emission Guidelines for Existing Electric Utility Generating Units (“Legal Memorandum”) at 22.

¹⁰⁵ 79 Fed. Reg. at 34,853.

¹⁰⁶ *Id.*

¹⁰⁷ EPA categorized power plants as part of a “source category” under section 112 in 2000. *See* 65 Fed. Reg. at 79,825, 79,830 (Dec. 20, 2000). In 2012, EPA also imposed section 112 restrictions on coal-fired power plants. *See* 77 Fed. Reg. at 9,304 (Feb. 16, 2012).

¹⁰⁸ Legal Memorandum at 24-25.

¹⁰⁹ *Chevron U.S.A. Inc. v. Nat’l Res. Def. Council*, 467 U.S. 837 (1984).

2. EPA’s “outside the fence” approach is an unreasonable interpretation of the CAA and is not entitled to *Chevron* deference.

CAA section 111(d)(1) provides in relevant part that “The Administrator shall prescribe regulations which shall establish a procedure similar to that provided by section 110 under which each state shall submit to the Administrator a plan which (A) establishes standards of performance for any existing source for any air pollutant. . . .”¹¹⁰

An “existing source” is any stationary source other than a new source.¹¹¹ And a “stationary source” is any building, structure, facility or installation that emits or may emit any air pollutant.”¹¹² Clearly, the Proposed Carbon Rule may only apply to specific existing EGUs.¹¹³

EPA has long been deprived of the ability to set plant-wide new source performance standards. In *ASARCO, Inc. v. EPA*, the Sierra Club argued that the CAA defines a “source” as an individual facility, as distinguished from a combination of facilities, such as a plant. EPA argued that the “broad” statutory definition of stationary source gave it discretion to define a stationary source as either a single facility or a combination of facilities. The court disagreed with EPA’s position. “We find this response unpersuasive. The regulations plainly indicate that EPA has attempted to change the basic unit to which the new source performance standards (“NSPSs”) apply from a single building...or installation (the unit prescribed in the statute) to a combination of units. The agency has no authority to rewrite the statute in this fashion.”¹¹⁴ EPA may not define the stationary source for section 111 purposes as an entire plant, much less an entire state or entities over which it has no authority. It is also notable that nowhere in its 104 page Legal Memorandum does EPA attempt to justify its decision to treat non-source entities

¹¹⁰ Under section 111(a)(1), the term ‘standard of performance’ means “a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the **best system of emission reduction** which (taking into account the cost of achieving such reduction and any non-air quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.” (Emphasis added). 79 Fed. Reg. at 34,844.

¹¹¹ 42 U.S.C. § 7411(a)(6).

¹¹² *Id.* at 7411(a)(3).

¹¹³ The EPA’s novel interpretation of the CAA is contrary to the 10th Amendment to the U.S. Constitution which does not provide federal agencies the authority to “commandeer the legislative processes of the States.” *New York v. U.S.*, 505 U.S. 144, 161 (1992), citing *Hodel v. Virginia Surface Mining & Reclamation Assn., Inc.*, 452 U.S. 264, 288 (1981).

¹¹⁴ *ASARCO Inc. v. Envntl. Prot. Agency*, 578 F.2d 319, 327 (D.C. Cir. 1978).

(including the state itself) over which it has no authority as stationary sources, or to square the Proposed Carbon Rule’s definition with the definition in the CAA. In fact, *ASARCO* and section 111(a)(3) are not cited in the Legal Memorandum.

Despite the CAA’s definition of “stationary source,” EPA interprets “**best system of emission reduction**” to give it authority to promulgate state-wide application under the Proposed Carbon Rule and to encompass entities not subject to the EPA’s authority.¹¹⁵ EPA defines “system” by giving the term its ordinary, everyday meaning: “a set of things working together as parts of a mechanism or interconnecting network; a complex whole.”¹¹⁶ EPA then argues that the term as defined is very broad with no constraints other than “best” and “adequately demonstrated.” Thus, according to EPA, the “system of emission reduction” may include anything that reduces emissions, including the measures in Building Blocks 2, 3, and 4 because they are part of the interconnected electricity sector and result in reduced utilization, and therefore, reduced emissions from the higher emitting fossil fuel-fired power plants.¹¹⁷

EPA argues that its reading of its authority under CAA section 111(d) is entitled to *Chevron* deference because of the ambiguity and breadth of the term “system” in the context in which it is found. However, even if CAA section 111(d) is ambiguous – and we believe it is not – as EPA argues, EPA’s “outside the fence” approach is not entitled to *Chevron* deference because it is not a reasonable interpretation. A court gives deference to the agency’s interpretation only if that interpretation is not arbitrary, capricious or contrary to its proposed reading.¹¹⁸ Even under *Chevron’s* deferential framework, agencies must operate within the bounds of reasonable interpretation. Defining “system” as applying to entities other than the source would extend EPA’s reach far beyond any reasonable interpretation.

Further, EPA must consider the statutory provision, viewing the statute as a whole, so that all provisions are considered together and, to the extent possible, reconciled and harmonized.¹¹⁹ Reasonable statutory interpretation by an agency must account for both the specific context in which language is used and the broader context of the statute as a whole.¹²⁰ A statutory provision that, to an agency, may seem ambiguous in isolation is often clarified by the

¹¹⁵ 79 Fed. Reg. at 34,852.

¹¹⁶ Legal Memorandum at 51.

¹¹⁷ 79 Fed. Reg. at 34,852.

¹¹⁸ *Chevron U.S.A. Inc.*, 467 US 837 (1984).

¹¹⁹ *Utility Air Regulatory Group v. Env’tl. Prot. Agency*, 134 S.Ct. 2427, 2441-442 (2014).

¹²⁰ *United Savings Assoc. v. Timbers of Inwood Forest Assoc., Ltd.*, 484 U.S. 365, 371 (1988).

remainder of the statutory scheme because only one of the permissible meanings produces a substantive effect that is compatible with the rest of the law. EPA's new "outside the fence" approach is inconsistent with the CAA's provisions when viewed as a whole.

Nothing in the CAA, including the provisions relied upon by EPA, can be construed to give EPA the broad authority it has assumed. Tellingly, EPA does not rely on any case law to support its position. It relies instead upon several treatises and law review articles to support its position. EPA also relies upon the fact that several states agreed to include EE and RE measures in plans filed with EPA. However, it is one thing to obtain a state's agreement to a plan and quite another to require states to put measures in their plans over which EPA has no authority.

Over the last forty years, EPA has regulated only four pollutants, from five source categories, under section 111(d) (i.e., phosphate fertilizer plants (fluorides) [in 1977], sulfuric acid plants (acid mist) [also in 1977], primary aluminum plants (fluorides) [in 1980], Kraft pulp plants (total reduced sulfur) [in 1979], and municipal solid waste landfills (landfill gases) [in 1996]. *See*, EPA Legal Memorandum at 9-10. This limited history-imposing technology-based limits for a few specific emission points within narrowly based industry categories that emit otherwise unregulated pollutants significantly emitted by few industries-is consistent with EPA's limited use of section 111(d). In contrast, EPA will now use section 111(d) in a manner and scope that is unprecedented. For example, up until now, EPA has set performance standards, which section 111(d) requires for an actual source of emissions, for a stationary source, such as an EGU. And, never before has EPA issued regulations that include a statewide approach that goes "beyond the fence line," outside the area occupied by the actual source of emissions, and thereby, in effect, attempting to regulate an entire state under section 111(d).

In *Utility Air Group v. EPA*, 134 S.Ct. 2427 (2014), the Supreme Court, in an opinion by Justice Scalia, cautioned against the EPA's bold use of the CAA in its regulation of GHGs. In rejecting EPA's conclusion that the Act compels GHG to be treated as a trigger to its stationary source permitting programs, **Justice Scalia warned against finding big programs in small nondescript packages.**

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 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.... The power to require permits for the construction and modification of tens of thousands, and the operation of millions, of small sources nationwide falls comfortably within the class of authorizations that we have been reluctant to read into ambiguous text. An agency has no power to tailor legislation to bureaucratic goals by rewriting unambiguous statutory terms. (Emphasis added).¹²¹

The only measure that EPA has authority to implement under a reasonable reading of the CAA is Building Block 1. EPA is without any authority to require the employment of Building Blocks 2, 3 or 4 for any purpose, particularly when those purposes may actually contradict the goals prompting a given state's adoption of the state requirements on which the building blocks depend.

B. EPA's Interpretation Is Not Reasonable In Light Of The Regulatory Framework Congress Has Carefully Crafted For EGUs.

Moreover, even if EPA's interpretation of section 111(d) was an acceptable interpretation of the CAA standing alone, it would not be a reasonable interpretation in light of the federal regulatory framework that Congress has carefully established for EGUs over the past one hundred years. The reasonableness of EPA's interpretation of section 111(d) cannot be assessed in a vacuum. In this case, EPA's statutory interpretation is not reasonable because the practical consequence of EPA's proposed rule is that EPA will engage in oversight of activities that Congress has, heretofore, either given to other federal entities, principally the FERC in partnership with the NERC and/or reserved to the states.¹²²

An otherwise acceptable interpretation of a statute is not entitled to *Chevron* deference if it is not a reasonable interpretation of the statute in light of external factors. For example, a statute is not entitled to *Chevron* deference if it raises serious constitutional issues.¹²³

In the Proposed Carbon Rule, EPA is claiming de facto authority to perform resource portfolio planning (Building Block 2), establish RE standards (Building Block 3), and establish a national EE standard (Building Block 4). These are all policy decisions that Congress has heretofore reserved to the states. Moreover, if Congress ever acts to federalize these types of

¹²¹ *Utility Air*, 134 S.Ct. at 2445.

¹²² 16 U.S.C. § 824.

¹²³ See *Solid Waste Agency of Northern Cook Cty. v. Army Corps of Engineers*, 531 U.S. 159 (2001) (declining to extend *Chevron* deference to EPA's Migratory Bird Rule due to the serious constitutional and federalism questions created thereby).

energy policy decisions, surely it will do so under the Federal Power Act, not the CAA. It is not reasonable to believe that Congress gave EPA this authority under the CAA when it otherwise has given FERC such extensive authority in energy policy.¹²⁴

The ACC also notes that, by including Building Blocks 3 and 4, the Proposed Carbon Rule inappropriately extends EPA's authority into areas that are unquestionably beyond what has been approved by Congress. Building Blocks 3 and 4 substantially do not involve resources that generate air emissions. Generally, Building Blocks 3 and 4 encompass nuclear, solar, and wind generation and EE programs. Consequently, they are not covered by any permitting authority EPA has with respect to air emissions. Building Block 3 encompasses both renewable generation and nuclear generation, neither of which produces CO₂ or any other noxious emission covered by the CAA. Building Block 4 involves an assortment of measures as varied as building code changes for residential construction to demand reduction programs and conservation education to replacing incandescent light bulbs with CFL and LED light bulbs.

Because EPA maintains that it has the authority to implement a federal plan in the event that the state does not produce a compliant plan within the proposed rule's timeframe,¹²⁵ and because compliance with both the Arizona interim and final goals is impossible without resort to not only Building Block 2 but also Building Blocks 3 and 4, any plan produced by EPA utilizing the stated compliance targets will necessarily require EPA to venture into regulating renewables, demand side management, and resource portfolio planning. None of these measures involve the emission of any sort of air pollutant and are, therefore, beyond EPA's authority to regulate under the CAA.

At present, ignoring cost and time constraints and the impact on reliability of electric service and on national security, Arizona can only meet the compliance targets under one of two scenarios. Either Arizona completely retires all coal generation in 2020, replaces that lost generation with NGCC production and continues aggressive adoption of RE and EE through 2030, or Arizona maintains some small degree of coal-fired generation with an elevated degree of NGCC generation¹²⁶ and radically increases the adoption of RE and EE programs. Each of the respective scenarios, assuming technical feasibility, which is doubtful in light of difficulties in

¹²⁴ 16 U.S.C. § 824.

¹²⁵ 79 Fed. Reg. at 34,951.

¹²⁶ As noted above, the ACC does not believe either of these approaches is achievable without jeopardizing the reliability of electric service and national security.

increasing NGCC output and EE discussed elsewhere, still results in a upheaval of the Arizona energy mix.

Under the first scenario, the Arizona statewide resource mix results in an imprudent over commitment to natural gas-fired generation. Under the second scenario, the influx of renewables, which have intermittency issues that will most likely be met with natural gas peaking facilities, still results in a resource portfolio that is highly leveraged toward natural gas (an undesirable result considering the ongoing debate of hydraulic fracturing and the attendant impact on natural gas production cost). Therefore, the Proposed Carbon Rule places EPA in the position of adjusting portfolio requirements toward economically ill-advised standards, as well as the aforementioned security and reliability problems that will immediately be realized by trying to comply. Resource planning selections are not within EPA's authority to determine.

Since the adoption of the CAA, EPA has been the enforcement authority, in connection with state and other local governmental units, as the principal regulator of the nation's clean air. Its proposal under section 111(d) of the CAA would move the EPA to the role of an energy regulator. The regulation of energy, including the transmission and delivery of electric power, has traditionally belonged to the states and other federal agencies, now, principally, the FERC.¹²⁷ Under EPA's proposal, the dispatch of power from EGUs, both interstate and intrastate, rather than being on a cost, reliability, and national security basis, would be based on an environmental function. This would imperil a regulatory system that Arizona, FERC, and the other 49 states have historically carried out in an efficient and necessary way. Moreover, section 215 of the Federal Power Act gives states the authority over their electric systems regarding safety, adequacy, and reliability of electric service within the state.¹²⁸

Federal authorities also recognize the lack of analysis that EPA employed. In testimony before the House Subcommittee on Energy and Power, FERC Commissioner Tony Clark noted that FERC, an economic and reliability regulatory responsibilities under the Federal Power Act, is in conflict with the broad responsibilities EPA proposes to assume under its Proposed Carbon Rule. As Commissioner Clark aptly put it, EPA's self-determined role as an environmental dispatcher of energy in a wholesale energy marketplace has placed FERC and EPA on track for a jurisdictional "train wreck" absent Congressional intervention. EPA clearly does not have the jurisdiction to perform the economic and reliability regulation it is engaged in.

¹²⁷ 16 U.S.C. § 824.

¹²⁸ *See id.*

The conflict does not end at the FERC because state utility commissions also bear responsibility for the intrastate operations of the same utilities. The jurisdictional conflict is the same between EPA and state commissions, as state commissions like the ACC are the economic, safety, reliability, and adequacy regulators of the utilities and their transactions with consumers.

Many of these traditionally state functions are supported by parallel federal regulatory bodies where federal regulation has been found to be appropriate. For instance, FERC and, by extension NERC, participate in ongoing evaluations of transmission reliability and the attendant national security considerations that come from a highly integrated grid. The consequences of poor decisions made with regard to the issues of grid reliability, economic feasibility, resource planning and national security are obvious and stark.

Meeting the projected compliance targets, even with full utilization of Building Blocks 1 and 2, will still necessitate the shuttering of all coal-fired generation by 2020 *and* the accelerated construction of new renewable generation, as well as associated new natural gas peaking facilities, to provide standby power and associated support infrastructure. Not only does this place EPA in the position of setting requirements for RE and EE programs that it has no jurisdiction to regulate, it also interferes with state authority to adequately plan for prudently diversified resource portfolios.

C. The Proposed Carbon Rule And The Four Building Blocks Are Not “BSER” For Arizona.

According to the CAA, an emission limitation is “a requirement established [foremost] by the state or [if a state fails to submit a plan] Administrator which limits the quantity, rate or concentration of emissions of air pollutants on a continuous basis.”¹²⁹ EPA is given broad authority in determining the appropriate level for the emission standards, but must use “the best system of emission reduction...adequately demonstrated.”¹³⁰

The BSERs in the Proposed Carbon Rule do not meet any of these standards as set forth in *Ruckelshaus*.¹³¹ The emission standards must be achievable, or technically feasible. EPA “may make a projection based on existing technology, though that projection is subject to the restraints of reasonableness.”¹³² However, EPA may not direct the specific means by which a

¹²⁹ 42 U.S.C. § 7602.

¹³⁰ 42 U.S.C. §7411(a)(1).

¹³¹ See, e.g., *Essex Chemical Corp. v. Ruckelshaus*, 486 F.2d 427, 433 (D.C.Cir. 1973).

¹³² *Id.*

state is to achieve its emission standards.¹³³ To be “adequately demonstrated,” the “system of emission reduction” must be “reasonably reliable, reasonably efficient, and reasonably expected to serve the interests of pollution control without becoming exorbitantly costly in an economic and environmental way.”¹³⁴

The ACC agrees, as set forth in ADEQ’s comments filed on November 21, 2014, that strict application of Building Block 2 to Arizona by 2020 would not constitute BSER for four reasons:¹³⁵

First, requiring the retirement of Arizona’s entire coal fleet by 2020, which would be the effect of imposing BB2 as a stand-alone requirement, would impose unreasonable costs in the form of stranded investments.

Second, EPA modeling of the cost impacts of redispatch pursuant to BB2 appears to be flawed.

Third, the assumption of a 2020 implementation date for BB2 fails to adequately account for the need to develop the infrastructure required for redispatch.

Finally, ... full imposition of BB2 by 2020 or even 2030 could jeopardize the reliability of Arizona’s grid and would be inconsistent with EPA’s obligation to consider “energy requirements.”¹³⁶

However, the problems with the building blocks extend beyond the interim goal. With respect to the final goal, EPA has not considered remaining useful life or book life. In addition, its cost analysis is lacking because it did not consider many costs associated with implementation of the Proposed Carbon Rule in Arizona. In addition, the EPA lacks authority with respect to the subject matter of Building Blocks 2-4 and, therefore, they are an invalid basis for BSER. Application of the building blocks to Arizona does not constitute BSER adequately demonstrated.

D. The Underlying Assumptions Contained In The Building Blocks, Upon Which The State Goals Are Calculated, Are Arbitrary And Capricious, Unlawful And Not Based Upon Any Evidence In The Record.

Under the Administrative Procedures Act (“APA”) an agency’s actions must not be

¹³³ *Commonwealth of Virginia v. U.S. Evt’l Prot. Agency*, 108 F.3d 1397, 1413 (D.C.Cir. 1997).

¹³⁴ *Ruckelshaus*, 486 F.2d at 433 (D.C.Cir. 1973).

¹³⁵ Arizona Department of Environmental Quality November 21, 2014 Comments on Building Block 2, EPA-HQ- OAR-2013-0602.

¹³⁶ *Id.* at 8.

arbitrary and capricious, unlawful or otherwise not based upon substantial evidence. As outlined above, the assumptions underpinning the Proposed Carbon Rule's compliance targets for Arizona are based on flatly incorrect assumptions. Moreover, the Proposed Carbon Rule produces inconsistent goals across the many states with contradictory results from the asserted goals that motivated its issuance. Finally, EPA's promises of flexibility under the Proposed Carbon Rule is contradicted by the unrealistic interim and final goals for Arizona which effectively mandate certain measures in order to comply with the rule.

1. State goals.

EPA employed flawed assumptions in the modeling that produced the individual state compliance targets. Enforcing requirements on the basis of a demonstrably flawed analysis is *per se* arbitrary and capricious.

The basis for the individual state compliance targets is premised on the EPA's assumptions of what measures can be taken within the state in order to reduce per kWh carbon output. EPA set the compliance targets based upon its understanding of the potential viability of each of the building blocks in each state. However, in determining the efficacy of each building block, EPA utilized averages without considering the actual potential improvements possible for each state. For example, with respect to Building Block 1, EPA determined an average heat rate improvement at existing coal facilities and assumed that all states can achieve that goal. The rationale unravels in its application because not all coal-fired generation is of equal vintage or efficiency. Consequently, the EPA assumption that an average degree of improvement is possible is wholly without support and untenable. A newer coal power plant or a plant that has made improvements will simply not have much opportunity to improve efficiency.

As discussed extensively throughout this document, EPA's Building Block 2 does not apply adequate analysis to determine the feasibility of altering operational profiles for dispatch of lower carbon emitting resources. EPA did not consider the ownership of such facilities, existing contracts for output, or access to adequate fuel supplies in order to operate at a higher capacity factor. Furthermore, EPA did not consider whether the type of gas generator operates efficiently at the necessary capacity factors to offset the lost coal generating units that will be shut down for environmental dispatch. All of these issues directly impact the viability of Building Block 2 as a compliance measure.

The credit for at-risk nuclear generation is similarly unsupported as a basis for compliance and for the establishment of a compliance target. EPA's modeling adopted the

blanket assumption that *all* nuclear generation is at risk for shut down during the compliance term and that all nuclear operators can obtain operating license extensions as an offset. As with coal generation, not all nuclear facilities are of an equal vintage and not all are facing the same risk for shut down. EPA's failure to isolate the risk for each installation penalizes facilities that are not exposed to this risk.

With respect to both RE generation and EE programs, EPA also made unjustified assumptions about the viability of such measures for attaining compliance with the interim and final goals. First, many states have rules or statutes that require the adoption of some amount of RE or installation of a set degree of EE. However, these requirements also establish timeframes for compliance and sunset thereafter. In crafting the goals, state utility commissions considered that program adoption would likely favor "low hanging fruit" in the earlier stages and then gradually dissipate as diminishing returns set in. EPA's conclusions regarding Building Blocks 3 and 4 make the arbitrary assumption that new programs can perpetually impact the energy grid to a set degree, well beyond the horizons carefully planned for by state utility commissions. EPA has supplied no analysis to corroborate this assumption. To the extent that many state requirements will sunset at some point, there is no basis for the assumption that investments in RE and EE programs will continue apace.

Further exacerbating matters is EPA's modeling, which effectively penalizes states for pre-existing RE and EE. The same is true for EPA's assumptions regarding the viability of lower emission natural gas generation supplanting coal-fired generation under Building Block 2. States that have substantially *more* coal generation in their energy mix, and *higher* carbon output per kWh, are nonetheless given lower compliance targets under the EPA rule than states with more balanced energy portfolios. Under the Proposed Carbon Rule, this outcome is driven by the rationale that states that have not diversified their energy mix do not have ready means to reduce their carbon output. Effectively, this penalizes states that have already diversified their resource mix to include lower carbon emitting resources such as NGCC, hydro, nuclear, renewables and energy efficiency. Consequently, the Proposed Carbon Rule punishes states that have developed diversified resource portfolios and regulatory processes that encourage the same low-carbon emitting resources that EPA asserts should be promoted under the proposed rule.

As a result, the Proposed Carbon Rule applies inconsistently among states. EPA may suggest that there is a rationale; nonetheless, to the extent that better prepared states may shoulder a greater burden even though they already emit less carbon per MWh than the less

diversified states, the rule is arbitrary. As explained above, the modeling that EPA performed to substantiate its rationale is inherently flawed. Persisting in the issuance of the Proposed Carbon Rule without adjusting the proposed compliance targets, in light of the erroneous assumptions, is arbitrary and unlawful.

Finally, EPA's reliance on state authority to require the implementation of Building Blocks 2, 3 and 4 to support the viability of these options under the Proposed Carbon Rule is without legal merit. EPA suggests that Building Blocks 2, 3 and 4 are suitable measures for the reduction of carbon emission intensity insofar as they displace or avoid the need for generation because the electricity grid is integrated, and electricity and electricity services are fungible.¹³⁷ However, many states that have adopted requirements regarding Building Blocks 2, 3 and 4 did so for economic reasons in order to mitigate over-reliance on a limited variety of fuel sources and the consequent vulnerability to fuel price fluctuations. EPA's co-opting of these measures for environmental purposes conflicts with the bases on which such provisions were adopted. For example, Building Block 2 as applied in developing the Arizona compliance target is used as a basis for the complete elimination of coal generation and substitution with gas generation, thereby doubling the exposure of the Arizona electric grid to fluctuations in natural gas prices.

Many states issued EE and RE requirements under their power to economically regulate utilities. Use of these provisions in the fashion that EPA suggests through the Building Blocks 2, 3 and 4 actually run counter to the ends that drove the issuance of those state requirements (i.e. by fostering greater dependencies on a more limited range of fuel sources). EPA would have states imprudently utilize prudently issued state rules to cause the very resource mix imbalances that their RE and EE requirements were designed to combat. Therefore, such uses of these provisions would likely not survive scrutiny for arbitrariness and capriciousness.

More troubling is EPA's recognition in its Legal Memorandum that it could not order the utilization of Building Blocks 2, 3 and 4 in the way it suggests.¹³⁸ Rather, it postulates that since states may require the use of such measures, (even if it would be contrary to the objectives of the state requirements), state compliance can involve a mix of such measures to attain compliance.¹³⁹

¹³⁷ 79 Fed. Reg. at 34,852.

¹³⁸ Legal Memorandum at 14.

¹³⁹ EPA cannot force the states to do what it lacks the power to do under the guise of an illusory notion of flexibility, especially in light of the cooperative federalism intended by Congress under section 111(d).

2. Arizona goals.

Arizona's compliance goals illustrate the logical shortcomings in EPA's formulation of compliance targets for states and its misuse of state provisions regarding RE generation and EE. Likewise, Arizona's example illustrates that it is one of the states that is penalized even though it has already undertaken to implement EE and RE generation requirements.

Arizona has one of the youngest coal fleets in the United States, currently, the sixth youngest out of all the states. The blanket assumption that Arizona could attain the same degree of heat rate improvement as the older, less efficient plants in other states is clearly untenable. Likewise, Arizona has the largest and one of the newest and most efficient nuclear generating facilities in the United States. The only reactor unit to be subject to potential lapsing of its operating license has already obtained a license renewal from the NRC. Consequently, EPA's failure to consider the particulars of Arizona's nuclear fleet improperly overlooks the significance of this measure as an attainable means for compliance.

One of the most troubling aspects of EPA's proposal is EPA's complete disregard for the specifics of Arizona's natural gas fired generation for purposes of evaluating the viability and impact of Building Block 2. EPA made no evaluation about how the natural gas facilities in Arizona are used to meet existing loads or the seasonal nature of Arizona's loads. EPA failed to consider whether there is access to sufficient gas transportation to operate all facilities to the degree EPA modeled for purposes of establishing the compliance targets, or whether Arizona utilities even have the legal right to use the power generated by all of the facilities considered. In fact, many of the natural gas generators in Arizona are merchant facilities that sell most of their power into California. Likewise, due to the severe seasonal peaking issues faced by Arizona, nearly all available natural gas *and* coal-fired generation is required to meet peak demands during the summer months. EPA's failure to account for these constraints undermines the appropriateness of compliance targets adopted on the basis of such faulty modeling.

As a final point, while the ACC certainly does not suggest that other states should be penalized more severely with more stringent goals, ACC would note that Arizona already has one of the lowest per capita rates of carbon emission. Arizona also has a quickly growing population. By contrast, many states with less stringent goals have older coal generation, declining populations and consequently *higher* per capita generation of carbon emissions. Plainly, Arizona is contributing significantly less GHG emissions than many other states. Under such circumstances, placing more burdensome compliance targets on Arizona is illogical,

unreasonable, arbitrary and capricious.

For instance, Arizona is already a net exporter of renewable energy and is an exporter of natural gas-fired generation.¹⁴⁰ As discussed above, in the EPA's IPM analysis, it projects Arizona could instead be a net energy importer. Natural gas-fired combined cycle generation produces higher carbon emissions than the compliance rates (interim and final) permit (approximately 900 lbs. per MWh). To the extent that other states rely on Arizona gas-fired generation to already meet their goal requirements, the Proposed Carbon Rule conceals the export of pollution into Arizona by states importing power from Arizona. EPA's failure to recognize this deficiency in the modeling that shaped the compliance goals is inappropriate.

Moreover, the EPA's inclusion of a 5.8 percent "at risk" estimate for states with nuclear generating stations was derived in an arbitrary and capricious manner, contrary to the most fundamental administrative law tenants for valid rulemaking: EPA assumes that the Proposed Carbon Rule will save 5.8 percent of existing nuclear capacity that is "at risk," and that states can increase generation from renewables. EPA's method of deriving the 5.8 percent at-risk estimate credits each state (with a nuclear power mix) with similar reductions associated with saving the at-risk nuclear plants in each state. This "one-size fits all" methodology makes no sense given the unique orientation of each state. The Palo Verde Nuclear Generating Station is not at risk, and in fact, just received an extension of its operating license to 2047. The inclusion of at-risk nuclear in the baseline emission rate calculation is unique: it is the only part of the baseline equation that projects future activity (i.e., loss of nuclear power capacity). Thus, if states do not maintain their existing nuclear generation, their emission rates will increase (all else being equal). The at-risk nuclear generation apparently lowered the (unadjusted) baselines in some states by as much as 7 percent, thus having a stronger impact than Building Block 1.

Finally, with respect to the state authority that EPA would rely upon for purposes of establishing compliance targets, EPA did not account for the fact that in Arizona's case, the REST as well as the EE Rules both have finite durations and actually terminate coincident with the interim compliance target set in the proposed rule. It would be exceedingly premature for EPA to presume that Arizona will perpetuate, much less surpass the standards set for 2020 by Arizona's rules for purposes of setting either an interim compliance target or a final target.

For instance, with regard to RE, Arizona has experienced numerous challenges that may

¹⁴⁰ <http://www.eia.gov/state/?sid=AZ>.

impact the ongoing development of renewable generation in the state. The interaction of residential DG solar with the ACC's net-metering rules and the resulting cost-shifting debate has triggered substantial controversy and ongoing discussions regarding revised rate designs for electric utilities. It is the ACC's impression that other states are facing similar issues.

Likewise, the utility scale renewable generation that would generate power in sufficient quantity to affect the average MWh to carbon emission ratio in Arizona is also facing an uncertain future. Utility scale solar projects with outputs appropriate for consideration in this regard are likely to be concentrating solar thermal generators rather than PV. Climate constraints are a significant factor in the viability of such technologies, even in a sun-rich environment such as Arizona. For solar thermal facilities to be cost effective in a hot desert environment, they require water cooling to optimize operating efficiency. However, Arizona is a water-constrained state. Solar thermal projects have already tapered substantially due to cooling water access issues. Such was the case for the Hualapai concentrating solar thermal facility that was approved to be constructed in the vicinity of Kingman, Arizona, but was never constructed because of cooling water limitations.

EPA's assumption in Arizona's case that the future of renewable generation is invariably aimed toward unfettered expansion is, therefore, entirely unsupportable and is contradicted by the emerging regulatory challenges that have already been experienced. For all these reasons, the Proposed Carbon Rule sets compliance targets on faulty bases and should be revised to account for these issues.

If EPA were granted legislative authority by Congress to preempt state regulation of these matters, the method of implementation presented within the Proposed Carbon Rule would be deficient because it thrusts the burden of regulation back upon the states.¹⁴¹

E. EPA's Proposed Rule Is Unlawful Because As Applied To Arizona, It Is Highly Prescriptive And Give Arizona No Flexibility To Fashion A Plan Of Its Own.

- 1. The EPA's Proposed Carbon Rule violates the CAA because it does not allow the state to consider remaining useful life as required by section 111(d).**

¹⁴¹ See, e.g., *New York v. U.S.*, 505 U.S. 144, 161 (1992)(States are not compelled to enforce a federal standard, expend state funds or participate in a federal regulatory program and may thereby leave the burden of enforcement on the Federal Government)(quoting *Hodel v. Virginia Surface Mining & Reclamation Assn., Inc.*, 452 U.S. 264, 288 (1981)).

Section 111(d)(1) requires that “Regulations of the Administrator under this paragraph shall permit the State in applying a standard of performance to any particular source under a plan submitted under this paragraph to take into consideration, among other factors, the remaining useful life of the existing source to which such standard applies.”

EPA has communicated extensively that there is sufficient flexibility in establishing a State Plan to allow states to meet the required goals. However, EPA did not consider remaining useful life as required under the CAA, nor does its proposal allow the states to consider it.¹⁴² EPA, instead, cites to the vast flexibility afforded states under its Proposed Carbon Rule.¹⁴³ However, not all states have the same degree of flexibility under the Proposed Carbon Rule. As previously demonstrated, Arizona has virtually no flexibility under the Proposed Carbon Rule.

2. The cliff effect and the lack of flexibility for Arizona are inconsistent with the state’s role to develop a state plan.

EPA has indicated the states will be required to submit a State Plan in order to demonstrate a state’s compliance with section 111(d) of the CAA. However, the prescriptive nature of the Proposed Carbon Rule and general lack of flexibility is inconsistent with the state authority granted to states under the CAA to develop those State Plans. Additionally, the State Plan differs significantly from the more familiar SIP outlined in CAA section 110.

In the Legal Memorandum, the State Plan is listed as the vehicle by which the states will outline how they will achieve the requested emission performance.¹⁴⁴ As the framework to establish the State Plans, the EPA relies on the CAA sections 111(d)(1), and 111(a)1:

111(d)(1): The Administrator shall prescribe regulations which shall establish a procedure similar to that provided by section 7410 of this title under which each State shall submit to the Administrator a plan which (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) of this title or emitted from a source category which is regulated under section 7412 of this title but (ii) to which a standard of performance under this section would apply if such existing source were a new source, and (B) provides for the implementation and enforcement of such standards of performance. Regulations of the Administrator under this paragraph shall permit the State in applying a standard of performance to any particular source under a plan submitted under this paragraph to take into consideration, among other factors, the

¹⁴² While in the NODA, the EPA asks for comment on the use of book life, it has not yet adopted any changes in this regard.

¹⁴³ 79 Fed. Reg. at 34,925.

¹⁴⁴ Legal Memorandum at 93-94.

remaining useful life of the existing source to which such standard applies.¹⁴⁵

While EPA indicates it has modeled to some extent the State Plans for section 111(d) on the SIP from section 110, the EPA points out that the two are not the same. EPA addresses the differences between the two in the following passage:

A CAA section 110 SIP must be designed to meet the NAAQS for a criteria air pollutant for a particular area - not for a source category - within a timeframe specified in the CAA. The NAAQS itself is based on the current body of scientific evidence and, by law, does not reflect consideration of cost. By contrast, a CAA section 111(d) state plan must be designed to achieve a specific level of emission performance that has been established for a particular source category within a timeframe determined by the Administrator and, to some extent, by each state. Moreover, the emission levels for the source category reflect a determination of BSER, which incorporates consideration of cost, technical feasibility and other factors.¹⁴⁶

It is important to recognize that a section 111(d) State Plan must be designed to reflect a specific level of emission performance that reflects a determination of BSER that incorporates considerations of cost and technical feasibility. A consideration of cost and technical feasibility clearly does not apply to the EPA analysis done for Arizona. As noted in the technical analysis of these comments, BSER as defined by EPA is not technically feasible given the goals that Arizona has been assigned. Even if the goal assigned were technically feasible, the costs to the providers and the ratepayers would outweigh the benefits produced because EPA has failed to consider significant costs that Arizona would incur to implement the Proposed Carbon Rule.

In addition, EPA is to establish a procedure under section 111(d) for states to submit plans. But, if a State Plan is not satisfactory, the EPA may step in and impose a plan. The states are given the ability under the CAA to consider remaining useful life and other factors in devising their plans. Under the Proposed Carbon Rule, all of Arizona's decisions have been effectively made by EPA. This is clearly contrary to the intent of the CAA.

3. Section 111(b)'s dual applicability is impermissible.

EPA's 111(b) proposal has major implications for its section 111(d) proposal. Primarily, an EGU that was initially governed by section 111(d), which later becomes subject to section 111(b) criteria, would be governed by both standards instead of just section 111(b).¹⁴⁷ Further, the ACC does not support EPA's contention that a "reconstructed facility" is still an existing

¹⁴⁵ 42 U.S.C. § 7411

¹⁴⁶ 79 Fed. Reg. at 34,834.

¹⁴⁷ *Id.* at 34,974.

facility.

A “new source” is defined as “any stationary source, the construction or modification of which is commenced after the publication of regulations (or, if earlier, proposed regulations) prescribing a standard of performance under this section which will be applicable to such source.”¹⁴⁸ An “existing source” is “any stationary source other than a new source.”¹⁴⁹

Ultimately, there should be an election made between the New Source Performance Standards and Existing Source Performance Standards. If a facility owner elects to incur the expense of modifying or reconstructing an EGU, then it should be entitled to the benefit of such an election.

The EPA proposes in section 111(b) that “all existing sources that become modified or reconstructed sources and which are subject to a CAA section 111(d) plan at the time of the modification or reconstruction, will remain in the CAA section 111(d) plan and remain subject to any applicable regulatory requirements in the plan, in addition to being subject to regulatory requirements under CAA section 111(b).”¹⁵⁰ In section 111(b), the EPA has proposed a limit that is more stringent than BSER by forcing an EGU to comply with both sections 111(b) and 111(d). With no relief provided on 111(d) for the modification/reconstruction of an existing source, the economics of doing so become even more difficult. Ultimately, such a standard will only cause the ratepayers to incur even higher costs.

Further, should conflicts arise between sections 111(b) and 111(d), EPA has provided no indication of which standard would take precedence, just as EPA has provided no support for applying both standards.

CONCLUSION

For all the above reasons, the EPA should not proceed with this rulemaking. If EPA proceeds with this rulemaking contrary to the ACC’s position, EPA should at a minimum, modify the rule as set forth herein and Arizona’s final goal should be no lower than 1,136 lbs. of CO₂ per MWh. Even though the ACC is submitting extensive comments, including the many ways the EPA must modify the Proposed Carbon Rule, if it proceeds in this matter, the ACC submits that the EPA does not have the legal authority to promulgate and implement the Proposed Carbon Rule under the CAA section 111(d).

¹⁴⁸ 42 U.S.C § 7411(a)(2).

¹⁴⁹ *Id.* at 7411(a)(6).

¹⁵⁰ Fed. Reg. 34,963, col. 1.