EPA Clean Power Plan (111(d))

Utah Air Quality Board

December 3, 2014

111(b) vs. 111(d)

- The Clean Air Act lays out distinct approaches for new and existing sources under Section 111:
  - Section 111 (b) is the federal program to address *new* sources by establishing standards.
  - Section 111 (d) is a state-based program for *existing* sources.
    - The EPA establishes guidelines
    - The states then design programs that fit in those guidelines and get the needed reductions

Previous proposals: New sources (111(b))

- Proposed Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units
  - Initially proposed April 13, 2012
  - Received 2.5 million comments
  - New proposal on September 20, 2013
  - Sets separate standards for coal and natural gas power plants in lbs CO_2/MWh:
    - Fossil fuel-fired utility boilers and integrated gasification combined cycle (IGCC) units:
      - 1,100 lb CO2/MWh gross over a 12-operating month period, or
      - 1,000-1,050 lb CO2/MWh gross over an 84-operating month period
    - Natural gas-fired stationary combustion units:
      - 1,000 lb CO2/MWh gross for larger units (>850 mmBtu/hr)
      - 1,100 lb CO2/MWh gross for smaller units (≤850 mmBtu/hr)

This year's proposal: Existing sources (111(d))

- Proposed Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (aka Clean Power Plan)
  - Proposed June 2, 2014
    - Issued a supplemental proposal to address power plants located in Indian Country and U.S. Territories on October 28, 2014 (includes Bonanza plant in Utah)
  - Projected to be finalized in June 2015

111(d): Best System of Emissions Reduction (BSER)

- Section 111 of the CAA requires that EPA identify the "best system of emission reduction… adequately demonstrated"
- States then make plans under 111(d) to achieve the reductions that result from the BSER
- For the Clean Power Plan, EPA identified a BSER based on four building blocks:
  - Block 1: average heat rate improvement of 6% for coal steam electric generating units (EGUs)
  - Block 2: dispatch to natural gas combined cycle (NGCC) units to get them to operate at a 70% capacity factor
  - Block 3: dispatch to renewable energy and existing and under construction nuclear generation
  - Block 4: increase demand-side energy efficiency to 1.5% annually

111(d): State Goals

- Using this BSER approach and a 2012 base year, EPA established interim (2020-2029) and final (2030) goals for each state in lbs CO2/MWh
- For Utah:
  - 2012 base year: 1,813 lbs/MWh
  - 2020-2029 interim goal: 1,378 lbs/MWh
  - 2030 final: 1,322 lbs/MWh
    - Current 2030 projected rate is 1,713 lbs/MWh for a compliance gap of 391 lbs/MWh (Source: Energy Strategies)
- Washington, DC, and Vermont do not have fossil plants and have no target
- Other state goals range from 214 lbs/MWh (Washington) to 1,783 lbs/MWh (North Dakota)

111(d): State Plans

- States can develop state-only or multi-state plans to meet their goals
  - Due one year after final rule for state-only plans
  - Due two years after final rule for multi-state plans
- States have the option to convert the rate-based goal to a mass-based goal
  - Useful for states contemplating a cap-and-trade program for compliance
- States don't have to use EPA's BSER building blocks if they can identify other ways meet the goals

111(d): Comment Development

- Comments were originally due October 16, 2014
  - Extended to December 1, 2014
- Office of Energy Development coordinated comments from Utah State with input from:
  - Office of the Governor
  - Department of Environmental Quality
  - Division of Public Utilities
  - Public Service Commission
  - Affected entities (e.g., utilities, generators, ratepayers, etc.)

111(d): Key Utah Comments

- 6% coal plant efficiency goal (Block 1) was based on a nationwide assessment; Utah's coal plants among the more efficient in the nation
- Lake Side 2 plant was erroneously categorized as "existing," but was "under construction"
  - Had the effect of overstating Block 2 redispatch potential
- Block 3 goal includes all Utah non-hydro renewable electricity (RE), but the proposal envisions RE to be credited where consumed
  - Since 60% of Utah RE generation is sold to California, this tightened Utah's Block 3 target without allowing that electricity to be counted towards compliance
  - State is seeking consistency in goal setting and flexible accounting for compliance purposes
    - PacifiCorp recently reported to the Public Utilities Technology Interim Committee (PUTIC) of the Legislature that it could meet its portion of Utah's 2030 goal through its current resource development plans so long as the final proposal allows flexibility in accounting for RE

111(d): Key Utah Comments (cont.)

- Interim goal creates unnecessary hurdles to reach 2030 goal
- Creates a new state plan development burden without explicitly providing resources to support DEQ
  - Comments seek a commitment from EPA to provide adequate resources without impacting existing core air quality programs
- Potentially places compliance tools like RE development and utility demand-side management (DSM) energy efficiency measures in a federally-enforceable "SIP-like" plan
  - Creates potential legal challenges
  - Impinges on Utah Public Service Commission (PSC) regulatory arena
  - State would prefer a "state commitment approach" under which "outside-the-fence" compliance measures like RE and energy efficiency would not be federally enforceable; State would commit to meet the goals associated with these measures
- Plan development and submittal timeframe is unrealistic (1-2 years)

111(d): Next Steps?

- Continue to communicate with EPA, other western states, and stakeholders
  - Colorado State University Center for the New Energy Economy (CNEE) hosting a series of state meetings to evaluate the proposal and potential compliance options
- Stakeholder process to assist in plan development

Questions?

STATE OF UTAH

GARY R. HERBERT
GOVERNOR

OFFICE OF THE GOVERNOR
SALT LAKE CITY, UTAH
84114-2220

SPENCER J. COX
LIEUTENANT GOVERNOR

December 1, 2014

Gina McCarthy
Administrator
U.S. Environmental Protection Agency
EPA Docket Center
William Jefferson Clinton Building West, Room 3334
1301 Constitution Avenue, N.W.
Washington, D.C. 20004

Dear Ms. McCarthy:

I am grateful for the opportunity to provide you with feedback regarding the proposed Clean Power Plan and the proposed carbon dioxide regulations for existing electricity generating units. As you are aware, regulation of the vast and complex electricity generating system for carbon dioxide raises serious legal, economic, and reliability concerns. The scope of this proposed regulation is unprecedented, affecting institutions and regulatory processes that have not previously been subject to the Environmental Protection Agency (EPA) under the Clean Air Act (CAA). Such a dramatic expansion of CAA authority warrants clear direction and clear legal authorization from Congress, which has not yet been granted. Understandably, the state of Utah has deep concerns about the legal basis for this proposal.

As you may know, coal is the dominant source of generating electricity in Utah, and has been so for decades. This is an industry, which supports thousands of well-paying jobs throughout the state, particularly in rural areas. Any transition away from this historically low-cost electricity source will have economic repercussions not just for the communities of those employed in the industry but throughout the state in the form of higher electricity prices.

It is also worth noting that Utah has concerns that the proposed rule unfairly penalizes the state because it does not recognize the efficiencies already reflected in its resource mix, or Utah's on-going efforts to advance portfolio diversification and energy efficiency. For example, Utah's coal fleet is among the most efficiently operated in the nation. Additionally, continued development of energy efficiency programs is well established in Utah, and we have realized much success through collaborative planning and deployment of new energy efficiency measures. On June 2, 2014, my Office of Energy Development released the "Utah Energy Efficiency and Conservation Plan," further reflecting the state's ability to collaboratively plan and implement successful energy efficiency opportunities to support deployment of new clean energy resources. Utah is deeply concerned that the

proposed rule will adversely interfere with the most effective and efficient opportunities for meeting its energy and environmental goals.

Aside from the legal and administrative concerns, the time frame allowed for this proposed regulation is extremely limited and will further exacerbate economic and logistic impacts of implementation. The proposed changes to the energy portfolio warrant a time frame that allows for adequate planning, development and deployment of new energy options that insulate the system from reliability shocks and provide for an affordable power supply.

While representatives of the EPA have made themselves available to discuss this proposal, those meetings have not resolved deep questions about fundamental aspects of the proposal. Unresolved questions about the implications of the proposal further impede the ability of the state to anticipate and prepare for the profound changes to the nation's electrical system apparently envisioned by the EPA. In light of the expansive scope, insufficient time frame, and the opacity of this proposal, the state of Utah requests that the EPA withdraw this proposal in preparation for Congressional action or a future proposal that would be more legally and practically sound.

In order to respond more extensively to your request for comments, I have asked Dr. Laura Nelson, director of the Utah Office of Energy Development, to provide a more detailed response on behalf of Utah. Her comments are attached.

Thank you for your receptivity to our concerns. We appreciate your outreach on the Clean Power Plan and any other issues that have a substantial impact on Utah.

Sincerely,

Gary R. Herbert
Governor

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Office of the Governor

CODY B. STEWART
Energy Advisor

DR. LAURA NELSON
Director, Office of Energy Development

December 1, 2014

Gina McCarthy
Administrator
U.S. Environmental Protection Agency
EPA Docket Center
1200 Pennsylvania Avenue Northwest
Washington D.C. 20460

RE: Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, Docket ID No. EPA-HQ-OAR-2013-0602

The State of Utah appreciates the opportunity to comment on the U.S. Environmental Protection Agency's (EPA) proposed Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units. Utah holds the position that state leadership and congressional action, rather than administrative rule, is required to properly address the complex and impactful issue of limiting greenhouse gas emissions. The EPA's proposal for regulating carbon dioxide emissions from existing electric generating units (EGU) is problematic and threatens the affordability, reliability and security of our state's and nation's power supply.

Utah has made extensive efforts to respond effectively to the proposed rule

Utah has expended significant time and resources to respond effectively to the EPA's proposed rule for regulating carbon dioxide emissions from existing power plants. Utah's Office of Energy Development, Department of Environmental Quality, and Division of Public Utilities have worked together to coordinate state efforts to address this extremely

broad proposal. Utah has held eight formal stakeholder meetings focused on Utah's power generation assets that would be covered by this rule. Utah has gathered input from technical, economic and legal experts to understand and analyze the far-reaching proposal. Potentially impacted locations have been toured, and local officials and economic developers consulted. Over forty meetings and teleconferences with affected groups have been held. Utah is working with consultants to develop state-specific modeling to better understand the numerous economic and technical challenges presented by the EPA's proposal.

The legality of the proposed rule is tenuous

The U.S. Environmental Protection Agency is not the appropriate body to develop new greenhouse gas laws of this scope. The unique qualities and widespread impact of new carbon rules require state leadership and congressional action. It is improper and legally defective for the EPA to drive energy policy and wide-spread changes to the U.S. power system. Given that the EPA possesses only the authority given to it by Congress, it is concerning that the EPA has ignored Supreme Court guidance to narrowly interpret its authority under the Clean Air Act (CAA) in developing this rule.[1]

The EPA's proposal is an unprecedented application of the Clean Air Act (CAA). The EPA has generally only applied the CAA Section 111 standards to direct power-plant emissions or "inside-the-fence" measures. These cost-effective actions, such as installing pollution controls, can be implemented directly by the regulated facility. The proposal mandates aggressive targets, which would almost certainly require "outside-the-fence" measures to achieve. These "outside-the-fence" measures include significant redispatch of power from coal to natural gas generation, renewable portfolio standards, and stringent energy efficiency. EPA has not established its legal authority to enforce "outside-the-fence" provisions. EPA also fails to justify its assignment of unequal carbon reduction targets to different states and does not adequately address the implications of this unequal treatment.

[1] Utility Air Regulatory Group v. Environmental Protection Agency, 573 U.S., U.S. Supreme Court Case, 2014.

This broad and complex proposal is inconsistent with many Federal Energy Regulatory Commission (FERC) and state utility rules, and its passage would create significant legal uncertainties. The proposed rule interferes with the prime responsibility of FERC and the North American Electric Reliability Corporation (NERC) to protect the reliability of the power system. Recent NERC analysis has questioned the proposal's assumptions and raised numerous concerns regarding the potential rule's impact on grid reliability.[2]

The EPA's broad interpretation of its authority to regulate carbon under the CAA unfairly shifts the cost of designing, implementing and enforcing this proposed federal rule to the states. Since the EPA has no existing carbon dioxide emission program for electricity generating units, the EPA is also shifting to the states the cost, uncertainty and risk of developing a new program. *Any proposal that shifts such burdens to the states must be accompanied by adequate resources for planning and implementation, and these resources should not come at the expense of a state's existing air quality programs.*

The EPA proposes to implement this rule through state implementation plans that would address such far-reaching topics as redispatch of power from coal to natural gas generation facilities, new renewable and nuclear generation, and energy efficiency programs. These state implementation plans, once approved by the EPA, would become federally enforceable. These federally enforceable implementation plans would conflict with the state's ability to pass timely and responsive legislation to protect and enhance its power system.

The enormous time and resources required to get a state implementation plan approved and amended by the EPA, as well as the administrative uncertainty, makes this interference with lawmaking authority all the more problematic. The EPA's proposed regulation of carbon dioxide emissions from EGU's through federally enforceable state implementation plans should be abandoned. *At the very least, the EPA should favor the so-called "state commitment approach" under which "state requirements for entities other than affected*

[2]http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/Potential_Reliability_Impacts_of_EPA_Proposed_CPP_Final.pdf

EGUs would not be components of the state plan and therefore would not be federally enforceable." [3]

States' rights over their resources should be protected

A state's authority to determine how it uses its natural resources is a central component of state sovereignty. The CAA recognizes states' primary authority over state resources. It is the appropriate and lawful precedent for the EPA to defer to states on resource decisions. The EPA should not make any unlawful assertions of authority regarding the allocation of resource attributes located within a state. While a state may choose under certain circumstances to agree to allocate an attribute of its resources to other states, this prerogative belongs to the states and not the EPA. Many factors lead to the development of a state's natural resources, including state tax credits, state infrastructure investment, and other state incentives. *Whenever state resources are involved, the EPA should defer to state authority to develop state agreements and plans that cooperatively address any reallocation of these resources or resource attributes.*

The process for developing the proposed rule has been insufficient

The EPA has not engaged states and Congress sufficiently in developing these proposed rules. Although the EPA has convened many meetings, it has not adequately addressed state concerns regarding this onerously complex, ambiguous and inconsistent proposal. The EPA proposal has officially requested feedback on nearly 150 substantive and interrelated issues. The broad impact and potential conflicts with existing law presented by each of these issues makes effective response difficult. Exacerbating this challenge, all of these issues are connected in such a way as to render adequate analysis of any one issue impossible unless it is known how the EPA will address related issues. While the EPA has made itself available to listen to concerns, it has been unable or unwilling to answer basic questions regarding the proposed rule and its intended meaning. The EPA's stated timetable for finalizing this rule

[3] https://www.federalregister.gov/articles/2014/06/18/2014-13726/carbon-pollution-emission-guidelines-for-existing-stationary-sources-electric-utility-generating#h-146

and the vagueness of the EPA's responses to state inquiries makes meaningful comment on the proposal challenging.

Under existing law, including the Administrative Procedure Act, a proposed rule should be sufficiently clear and consistent to enable a potentially affected entity to reasonably understand how it might be impacted. EPA's proposal fails to meet this requirement. *The State of Utah requests that this proposal be withdrawn and treated instead as a request for information from states and other affected parties.*

The proposed rule would cause significant economic harm without adequately demonstrating a meaningful reduction in targeted emissions

This proposed rulemaking unnecessarily and abruptly undermines the crucial role coal plays in our state's and nation's energy system. Coal is the workhorse of our power system. As the most significant, affordable and reliable source of base-load power, coal supports and enables the development of other energy resources and transportation alternatives such as electric vehicles. Coal became the foundation of our nation's power system because of its many benefits, including availability, affordability, and delivery advantages across a diverse energy system. This resource diversification provides a robust and flexible system for managing energy and environmental considerations. A significant reduction in coal utilization – the combined result of the proposal and several other regulations – in the absence of a viable, complementary and timely replacement, will adversely impact the deployment of energy alternatives, including those specifically identified in the proposal. The EPA has not adequately addressed how these essential advantages of coal power will be replaced.

The U.S. Energy Information Administration (EIA) estimated that coal provided 81 percent of 2013 electricity generation in Utah.[4] As an abundant domestic resource, coal sustains numerous communities through high-paying mining and energy jobs. Coal mining and fossil fuel electric power generation directly accounted for 2,737 jobs and 238 million dollars in wages in Utah in 2013, which were on average 211 percent of the state average.[5] (These

[4] U.S. Energy Information Administration, Electric Power Monthly, February 2014.
[5] Utah Department of Workforce Services data for NAICS categories 212112, 213113, and 221112 analyzed by the Utah Office of Energy Development

statistics reflect only direct employment in coal mining and fossil fuel electric power generation. They do not include employment created indirectly, or induced in other industries as a result of the direct employment.) According to the National Mining Association, coal is responsible for 14,570 direct and indirect jobs in Utah.[6] Fossil-fueled power generation facilities also account for a significant portion of the property tax base in several rural Utah counties.[7] As generally the most affordable power generation resource, coal-fired power supports a vibrant economy, including high-paying industrial and manufacturing jobs. Additionally, coal provides a higher quality of life to everyone through lower energy costs. Utah's average price of electricity over all sectors in 2013 was 8.2 cents per kWh, 19 percent lower than the national average.[8] This proposed rule underestimates and undervalues the critical role coal plays in our power system and economy.

By discouraging the further development and continued utilization of one of our nation's most abundant and affordable energy resources, this proposed rule would reduce the affordability and security of our fuel supply. The proposal has the potential to significantly increase electricity rates, which will negatively impact Utah's industrial, commercial, and residential consumers. National Economic Research Associates (NERA) has estimated that this regulation will cost between forty one and seventy three billion dollars a year.[9] Fourteen states, including Utah, are estimated to incur peak electricity price increases of more than twenty percent.[10] Impacts will be especially severe for economically disadvantaged and rural consumers. Considering these enormous costs, the federal government should consider as an alternative to this proposed regulation investing more heavily in cleaner coal technologies that would enable the further development of this critical national resource. Such investment would also enable the U.S. to become an exporter of advanced coal technology that would further reduce global carbon dioxide emissions.

By significantly reducing coal utilization at existing power plants, this proposed regulation will likely result in more volatile and expensive electricity prices. The EPA does not show,

---

[6] National Mining Association, http://www.countoncoal.org/states/
[7] Power generation and coal mines accounted for 16 & 79% of the property tax base of Carbon and Emery Counties in 2013, Utah State Tax Commission, Property Tax Division, 2013 Annual Statistical Report
[8] Utah Office of Energy Development, Dr. Peter Ashcroft, 2014.
[9] NERA Economic Consulting, *Potential Impacts of the EPA Clean Power Plan*, October 2014
[10] NERA Economic Consulting, *Potential Impacts of the EPA Clean Power Plan*, October 2014

however, that these regulations will significantly reduce global greenhouse gas emissions. While U.S. coal-fired power plants are generally cleaner and more efficient than foreign alternatives, the EPA's proposal would likely make these foreign power producers more attractive to some industries, encouraging greater utilization of unregulated coal power plants abroad. This would shift the economic advantages of coal to foreign markets rather than achieve the EPA's stated goal of reducing global greenhouse gas emissions. Currently in the U.S., 60,104 megawatts of electricity from 381 coal units in 36 states are scheduled for retirement.[11]

The EPA's proposed rate-based target for Utah carbon dioxide emissions contains significant errors

Utah's rate-based target contains serious errors. The Lake Side 2 natural gas power plant should not have been included as an existing unit in the state's building block two calculation because it was still under construction in 2012. *Instead, Lake Side 2 should be classified as "under construction" in calculating Utah's carbon dioxide emissions target.* Preliminary analysis suggests that correctly classifying the Lake Side 2 facility would change Utah's compliance target by 46 lbs CO_2/MWh.[12]

The EPA's proposed rate-based target for Utah carbon dioxide emissions places Utah's coal fleet at significant risk

The EPA's proposed rate-based 2030 carbon dioxide emissions target (1,322 lbs CO_2/MWh) for Utah, based on problematic and, in some instances, incorrect assumptions about Utah's 2012 power generation portfolio, could place enormous costs on Utah's power system, and greatly increases the risk of premature and costly decommissioning of Utah's coal-fired power plants. *EPA should allow the full value of existing coal plants to be realized before retirement.*[13] Utah's coal-fired power plants are among the most efficient and lowest emitting in the country. The EPA's approach of assigning different carbon dioxide emission targets to states could lead to the absurd result of preserving less clean, less efficient power plants at

[11] American Coalition for Clean Coal Electricity, Coal Unit Shutdowns as of Oct 23, 2014. Retirements and conversions are based on public announcements by the coal unit owners.
[12] Energy Strategies Utah 111(d) Compliance Modeling Analysis
[13] 79 Comments requested Federal Register 34926, (June 18, 2014)

the expense of cleaner, more efficient power plants based solely on the state in which the power plants operate. Utah rejects any scheme that would sideline a newer, more efficient Utah coal-fired power plant, while allowing more polluting plants in other states to continue operating.

The EPA must treat renewables consistently in state carbon emission baselines and targets

The EPA's treatment of renewable electricity further complicates the target calculation. The EPA used a state jurisdiction method to include renewable resources located in Utah in the state's rate-based target, but has since suggested allocating credit for Utah's renewables to out-of-state renewable power purchasers. Sixty percent of Utah's renewable electricity generation in 2012 was exported, inflating Utah's building block three target proportionally. Excluding exported renewable electricity from Utah's goal computation would reduce Utah's 2030 compliance gap by 56 lbs CO_2/MWh.[14] Utah is very concerned about this potentially inconsistent approach in allocating credits for renewables. *Consistency is required between how the EPA sets state carbon dioxide emission targets, and how states are allowed to meet those targets.* The EPA's inconsistent and unclear method for calculating the state's carbon dioxide emissions target impedes the State of Utah's ability to provide substantive feedback on the EPA's proposed rate-based target.

Many factors lead to construction of renewable electricity resources. Projects often receive numerous tax credits and other incentives in the state in which they are located. Additionally, renewable electricity generation represents the use of the state's natural resources that are then not available for other purposes. The EPA should be receptive to state plans that cooperatively allocate credit for such resources through mutual agreement between states that generate and use renewable electricity.

[14] Energy Strategies Utah 111(d) Compliance Modeling Analysis

The EPA determined baselines and available compliance options are unclear

The EPA does not provide adequate justification for using a single year of data, 2012, as the baseline for state carbon dioxide emissions. In the recently released EPA Notice of Data Availability, the EPA suggests other years, including 2010 and 2011, as potential baseline years. A single year will almost never be truly representative of a state's electric generating operations being subject to annual variations due to weather, outages, and other factors. *If the EPA is going to establish a representative baseline, states should be given the opportunity to choose representative baselines established from averaging various years, including three to five year averages.*

The EPA's compliance options are unclear

Although the EPA has provided examples of how a rate- or mass-based target might be calculated, the agency has not provided sufficient guidance on how it would implement either approach. *Despite the considerable legal and technical issues raised by a rate-based approach, states should be allowed the option of including new natural gas power plants as part of meeting rate-based requirements.*[15] *The EPA should clarify and justify how power generation facilities permitted under its proposed carbon dioxide emission rule for new power plants would be treated for purposes of complying with its proposed rule for existing power plants.* The EPA provides little guidance on this crucial issue, creating confusion about how its proposals for regulating carbon dioxide emissions from new, modified and reconstructed, and existing fossil fuel power plants will jointly operate.

The EPA's plan development and submittal timelines are unrealistic

The EPA's requirement that states submit a compliance plan one year after the rule is finalized is unrealistic. Traditional state implementation plans (SIPs) – analogous planning exercises with which states have considerable experience – have historically taken several

[15] Comments requested 79 Federal Register 34923-34924, (June 18, 2014)

years to develop. In addition, the proposed one-year planning horizon puts states in the position of including potential compliance measures in their plans that have not been approved by utility regulators. Furthermore, some potential compliance measures could require additional state legislative actions that would extend beyond the one year submittal deadline. *For these reasons, in the event that the EPA moves forward with the proposal, the agency should provide a more realistic timeframe for state plan development and submittal. The EPA should also allow states to establish their own path to achieving the 2030 goal. In addition, the EPA should allow states flexibility in establishing and reporting on milestones along this path. Finally, the EPA should allow states the flexibility to amend plans as needed to reflect new developments and changing conditions in the electricity market*.

The EPA's proposed compliance timelines are unreasonable

The implementation of the EPA's compliance tools, including heat-rate improvements and redispatch, is unrealistic and requires more time than is allowed under the proposed rule. This problem is particularly acute with respect to the interim compliance period (2020-2029), which may begin within a year of an approved plan. The proposed rule does not adequately address the time needed to facilitate new power generation, including natural gas, nuclear, and/or renewable power generation, nor does it address additional costs necessitated by the abrupt implementation schedule. The proposal also does not comport with the time required for state legislative and regulatory processes, in addition to the time required to comply with other federal regulations. Taken together these constraints make the time allowed for installing new technology, equipment and infrastructure unrealistic.

The EPA has not addressed the particular challenges in the West of developing new infrastructure such as transmission lines. Compared to other parts of the country, utilities in the West have large service territories with unique geographical challenges. Federal lands cover vast portions of Utah and other Western states, triggering additional planning and permitting requirements under the National Environmental Policy Act (NEPA), Endangered Species Act (ESA), and other laws. The EPA's proposal does not appropriately consider these issues.

The EPA's assumptions in building Utah's rate-based target are problematic and inadequately supported

The EPA has built Utah's carbon dioxide emissions target using problematic assumptions that do not take into account the unique attributes of Utah's power generation system. These unsupported assumptions are included in the EPA's proposed building blocks. Taken as a whole, the EPA contends that these proposed building blocks constitute the best system of emissions reduction (BSER). The EPA does not justify this unprecedented expansion of the definition of a BSER under the Clean Air Act.

Building Block One issues

The EPA incorrectly assumes that coal plants can operate six percent more efficiently although they already have every reason to operate as efficiently as possible. The EPA has not sufficiently supported its assumption that a fleet-wide six percent heat rate improvement is possible.[16] The EPA's application of a six percent improvement to Utah is not based on any specific analysis of potential heat-rate improvements at Utah coal plants. Utah's coal plants have little, if any, room for significant additional improvements in efficiency. Consistent with a recent EPRI study, six percent efficiency improvements at Utah coal plants are not attainable.[17][18] Conducting their own unit-by-unit assessment of potential efficiency gains, Utah's plant operators concluded that potential improvements would be minimal at best.[19] Preliminary modeling suggests that a heat rate improvement of 1 percent across the Utah coal fleet will result in an overall reduction of the state's carbon dioxide emission rate of only 15 lbs CO_2/MWh, rather than the 100 lbs CO2/MWh projected by EPA.[20] In addition, many heat-rate improvement measures are simply recovering efficiency lost due to degradation from the original operating condition. According to Utah's plant operators,

[16] In its comments on EPA's Clean Power Plan, Edison Electric Institute (EEI) disagrees with EPA's estimate that a six-percent across the board heat-rate improvement is achievable. EEI represents all U.S. investor-owned electric companies.
[17] Comments requested 79 Federal Register 34860, (June 18, 2014)
[18] Comments requested 79 Federal Register 34862, (June 18, 2014)
[19] The 2014 PacifiCorp *Fossil Fuel Heat Rate Improvement Plan*, filed with the Public Service Commission, finds that a heat rate improvement of 1.3 percent is achievable between 2014 and 2023.
[20] Energy Strategies Utah 111(d) Compliance Modeling Analysis

achieving additional heat-rate improvements will be very costly and subject to the law of diminishing returns.

The proposed rule does not give credit for existing plant efficiencies. This approach penalizes power plants that have already made significant investments in cleaner, more efficient processes and technologies. Utah's coal-fired power plants are among the most efficient in the nation. Utah has the third best coal fleet in the country for emissions rate and should be rewarded for its investment in plant efficiencies.[21] Even after making the efficiency improvements proposed in block one, (improvements that are not feasible), twenty nine states would still have higher emission rates than Utah does today.[22] This result is patently unfair, resulting in less efficient power plants receiving unfair preference over Utah's more efficient power plants. The EPA's one-size fits all efficiency assumptions, and its assignment of different carbon reduction targets to each state will result in less efficient coal-fired power plants being preferred over Utah's more efficient coal-fired power plants. Along with the inherent unfairness of this approach, it is inconsistent with the EPA's stated goal of reducing overall greenhouse gas emissions.

There is not sufficient time to make the efficiency improvements envisioned under block one. Turbine upgrades are major undertakings requiring significant lead time. Based on the current time needed to site, permit and modify power plants, the EPA's timelines for heat-rate improvements are unreasonable.

Environmental controls such as selective catalytic reduction (SCR) actually reduce plant efficiency by creating additional parasitic load. Utah's affected EGUs already have environmental controls that reduce their efficiency, and face additional controls under current and future environmental requirements, including PM 2.5, mercury and ozone rules. It is important that proposed power plant improvements for carbon dioxide emissions do not conflict with or penalize power plants for compliance with other environmental regulations. *EPA should recognize that existing and pending environmental controls can decrease coal unit efficiency and should adjust targets to reflect this reality.*

[21] 20140602tsd-plant-level-data-unit-level-inventory, EPA
[22] 20140602tsd-plant-level-data-unit-level-inventory, EPA

The redispatch of natural gas plants ahead of coal plants envisioned under block two will negatively impact coal plant efficiency by requiring them to run at less than optimal capacity.[23] Coal-fired power plants heat-rate efficiency would be undermined by intermittently running at lower capacity factors and/or shutting down to comply with the proposed rule. For example, the net unit heat rate curve of one Utah EGU indicates that reducing the output of the unit by 20 percent as a result of redispatch will increase the heat rate (and reduce the unit efficiency) by almost 2 percent. *EPA should recognize that the redispatch of NGCC plants ahead of coal plants can negatively impact coal plant efficiency and should adjust the block 1 target accordingly.*

Heat rates will vary over time depending on capacity factors, maintenance, season, temperature and other factors, including dispatch. Dispatch may also be driven by out-of-state demand that is outside of Utah's control. *The EPA should determine appropriate heat rates based on unit-specific calculations that allow for reasonable adjustments over time to recognize and reward power plants that have already invested in efficiency upgrades.*

Building Block Two issues

The EPA's assumptions for redispatching power from coal to natural gas power plants are problematic. The EPA assumes that every natural gas combined-cycle power plant could operate at seventy percent capacity although only ten percent of these power plants operated at that level in 2012 during a time of historically low natural gas prices. Utilities add new resources as needed to meet load. The EPA's redispatch assumptions fail to properly account for the fact that recently-added NGCC facilities were constructed to meet projected load growth, rather than to serve as additional available capacity. There is little surplus capacity to reduce coal generation when growth projections are taken into account. *The EPA should use a lower targeted capacity factor (i.e., <70%) in developing block two targets to account for anticipated load growth.*

[23] Comments requested 79 Federal Register 34862, (June 18, 2014)

The EPA's use of nameplate capacity when developing block two targets is inappropriate, overstating the potential for redispatch to natural gas power plants. A power plant's actual operating capacity can be significantly lower than its name plate rating, especially at higher elevations or during high ambient temperatures. *The EPA should use the operating capacity of Utah NGCC units rather than nameplate capacity in evaluating the potential for redispatching NGCC ahead of coal.*

Redispatching power from coal to natural gas will create heat-rate inefficiencies at coal-fired power plants, thus reversing other heat-rate improvements. "Moving" units between operating points leads to additional heat rate penalties. In its assumptions on the carbon reductions possible from redispatch, the EPA has not accounted for the heat rate penalties created by moving to more natural gas generation. *The EPA should accurately account for heat rate penalties associated with the redispatch of NGCC ahead of coal.*

The EPA's plan for increasing the utilization of natural gas may place a significant strain on system reliability, including reserve requirements. Coal serves a crucial role in meeting system reserve requirements. Moreover, significant amounts of coal reserves can be stored on-site to ensure a dependable fuel supply. Increased reliance on natural gas will subject the power system to increased risk of fuel interruptions and pricing volatility because of the technical and economic challenges of storing natural gas.

The EPA has not addressed what additional natural gas infrastructure will be needed to supply the natural gas required for dramatic increases in natural gas power generation. Redispatch of natural gas for base load will likely require construction of new natural gas facilities and infrastructure in order to track demand and maintain system reserve requirements. As noted above, in the West this likely means significant additional environmental reviews to permit infrastructure projects on public lands.

The EPA has suggested that the Northern Tier Transmission Group (NTTG) could manage the regional redispatch of power envisioned under block two. However, NTTG has written

to the EPA to explain that NTTG has no authority or capability to implement building block two requirements.[24]

The EPA's assumptions regarding natural gas utilization may inhibit Utah's ability to effectively manage its air sheds. The EPA's assumptions for redispatching power from coal to natural gas generation may conflict with Utah's ability to comply with other CAA requirements. Utah's four NGCC plants are located in and adjacent to urban areas, including some currently designated nonattainment areas. While these plants are permitted – and not constrained by existing SIPs – to operate at the levels envisioned by the EPA under block two, they nonetheless contribute NOx emissions that are an important precursor to PM2.5. Moreover, the EPA is considering a more stringent ozone standard, creating additional uncertainty and constraints on meeting the EPA's assumptions regarding NGCC capacity factors. The EPA also fails to properly account for the efficiency penalties caused by NGCC emission reducing technologies. For example, some of Utah's NGCC plants include selective catalytic reduction (SCR) for NOx emissions control, which can further reduce plant efficiency. *The EPA must ensure that block two targets do not interfere with the ability of Utah to protect its air sheds and address existing and future air quality regulations.*

Redispatching to natural gas from coal will create winners and losers since not all utilities and/or generators in Utah own both types of plants. For example, one Utah utility operates the three largest NGCC plants in the state. Thus, redispatching to NGCC would require a large shift in generation from coal plants owned by several stakeholders to NGCC plants operated by a relative few. *The EPA should favor compliance mechanisms that don't create "winners and losers."*

The proposed rule assumes that most of the reductions in carbon dioxide emissions from redispatch can be realized by 2020. Recognizing that the EPA's assumptions regarding the gains achievable through redispatch are questionable, this timeline for redispatch is unrealistic. Specifically, the EPA has not adequately analyzed the technical or legal requirements of large-scale redispatch, nor has it addressed the infrastructure required to

[24] Comments requested 79 Federal Register 34910, (June 18, 2014)

support the increased fuel requirements. The time needed to site, permit and build the infrastructure and power plant projects suggested by the proposed rule far exceeds the EPA's proposed timelines. Furthermore, many generation resources provide support for system reliability by their very location. Reducing their operations or eliminating them altogether could cause significant reliability concerns to the grid, particularly in the West's sparsely populated areas.

The enormous challenge of meeting the EPA's timeline is further complicated by compliance with other federal requirements, including the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA). The EPA has not presented any plan or solution to address these issues.

Dispatch on a basis other than reliability and economics, as proposed by the EPA, is likely incompatible with current Utah law. Reconciling legal inconsistencies and responding to a variety of potential legal actions will further increase timelines.

Building Block Three issues

The assumed contribution of renewables to Utah's final carbon dioxide emission target is based on policy decisions, including renewable portfolio standards, made in other states that are outside Utah's control. These assumptions do not reflect the technical potential of renewable generation in Utah, and are not appropriate for Utah[25].

The proposed rule includes renewables located in Utah in setting Utah's 2030 target, but opens the possibility of allowing other states the ability to claim credit for Utah's renewable resources for compliance purposes. Inconsistency in how the EPA treats renewable resources results in a significant divergence between goal development and state compliance. *The EPA should adopt an approach that is consistent with regard to goal setting and compliance, while allowing states flexibility to establish agreements to utilize out-of-state renewable generation for compliance purposes.*

[25] Comments requested 79 Federal Register 34869, (June 18, 2014)

Most of Utah's customers are served by PacifiCorp, an investor-owned utility that operates in several Western states. Accounting for renewable credit based upon where the electricity is consumed is a very complex issue with many stakeholders and regulatory layers in multiple states. The EPA has been inconsistent in the proposed rule and subsequent guidance regarding how renewable energy will be credited, impeding Utah's ability to address options for different utility systems operating within the state. *In consultation with states, the EPA must adopt an approach that consistently and adequately addresses the legal, economic and technical implications of the renewable energy compliance option and preserves states' authority over the resources located within the states.*

The EPA has also been unclear on how other types of generation, including hydro and nuclear will be credited to states in meeting carbon dioxide emission targets. The EPA should provide clear standards for how each type of generation resource will be credited, and ensure that credit is consistent with goal setting.

Along with not providing sufficient clarity, the EPA has failed to justify allocating credit differently for various types of power generation. Uncertainty around this unequal and legally suspect treatment of different generation sources makes effective state regulation of an interconnected power system extremely challenging.

Building Block Four issues

The EPA's approach for calculating achievable efficiency savings is problematic.[26] The EPA's calculation of achievable efficiency savings are based on EIA-861 data, which include values reported by many different entities that may not be using consistent definitions of baselines or efficiency savings. EIA-861 historical data provides an unreliable basis for forecasts of future energy efficiency savings potential. *If energy efficiency savings are to be incorporated into the calculation of rate-based performance, the EPA must provide clear guidelines of acceptable evaluation, measurement and verification protocols.*[27] *In considering qualifying energy efficiency resources, the EPA should justify excluding any effective and commercially viable technology, such as combined heat and power.*

[26] Comments requested 79 Federal Register 34875, (June 18, 2014)
[27] Comments requested 79 Federal Register 34909, (June 18, 2014)

Although the persistence of energy savings will vary dramatically among different efficiency measures, the EPA assumes all measures will depreciate linearly over 20 years. This uniform rate is not representative of all efficiency measures. The proposal does not clearly recognize efficiency savings between 2012 and 2017,[28] which could create a disincentive for efficiency investments during these years. The proposal also effectively penalizes early actions taken before 2012. In many cases, these actions represent the most cost-effective efficiency savings opportunities. *The EPA should clearly recognize and reward energy efficiency savings between 2012 and 2017, and should recognize early actions on energy efficiency taken before 2012.*

The EPA's position on allocating credit for energy efficiency lacks clarity. Building block four is based on electricity generation within the state, rather than electricity use, despite the fact that state programs can only affect electricity use within the state. The EPA's approach would make states' ability to achieve efficiency targets dependent on efficiency measures implemented in other states. It would also impose higher efficiency savings requirements on electricity-exporting states as compared to electricity-importing states.[29] *The EPA should base efficiency goals on electricity use, not generation, to avoid penalizing electricity-exporting states.*

Energy efficiency measures are ultimately voluntary and cannot be used to specify future savings with the same certainty as other building blocks. The EPA should not interfere with a state's ability to encourage energy efficiency measures through state-led programs. Energy efficiency does not belong in federally enforceable state plans, which create significant legal conflicts and are, ironically, a very inefficient vehicle for delivering successful efficiency programs.

[28] Comments requested 79 Federal Register 34918, (June 18, 2014)
[29] Comments requested 79 Federal Register 34897, (June 18, 2014)

Utah asks the EPA to withdraw or reconsider its proposed rules for regulating carbon dioxide emissions from existing EGUs

The EPA does not have sufficient authority to drive transformative changes to the power system through administrative rule. The complex and far-reaching issue of reducing green-house gas emissions is best addressed by Congress and the states. The proposal is legally and technically problematic. The EPA's carbon reduction assumptions are thinly supported and inappropriate for Utah. The proposals unprecedented application of the CAA to the power sector is inadequately justified, and unfairly seeks to shift the enormous burden and risk of the proposal to the states.

The proposal undermines the crucial role coal plays in ensuring an affordable, reliable and secure power supply. It would cause significant harm without adequately showing a meaningful reduction in global green-house gas emissions. The proposal could significantly raise power costs harming the competitiveness of Utah's industry and economy. Consumers will face higher utility costs, disproportionately affecting lower-income and rural families. The State of Utah requests that this proposal be withdrawn or considered a request for information from states and other affected parties. Utah invites the EPA to engage in a more constructive process led by states and Congress to find legally sound, affordable, practical and effective approaches to reducing green-house gas emissions.

Sincerely,

Cody Stewart

Cody B. Stewart
Energy Advisor
Governor Gary R. Herbert
State of Utah

Summary of Key Recommendations

1. EPA should provide states resources for planning and implementation, and these resources should not come at the expense of states' existing air quality programs.
2. EPA should favor the so-called "state commitment approach" under which "state requirements for entities other than affected EGUs would not be components of the state plan and therefore would not be federally enforceable."
3. Whenever state resources are involved, the EPA should defer to state authority to develop state agreements and plans that cooperatively address any reallocation of these resources or resource attributes.
4. Lake Side 2 should be classified as "under construction" in calculating Utah's carbon dioxide emissions target.
5. EPA should allow the full value of existing coal plants to be realized before retirement.
6. Consistency is required between how the EPA sets state carbon dioxide emission targets and how states are allowed to comply with the targets.
7. If the EPA is going to establish a representative baseline, states should be given the opportunity to choose representative baselines established from averaging various years, including three to five year averages.
8. States should be allowed the option of including new natural gas power plants as part of meeting rate-based requirements.
9. EPA should clarify and justify how power generation facilities permitted under its proposed carbon dioxide emission rule for new power plants would be treated for purposes of complying with the proposed rule for existing power plants.
10. EPA should provide a realistic timeframe for state plan development and submittal.
11. EPA should modify the interim goal timeframe to allow a smooth glide path to achieving the 2030 goal.
12. EPA should allow states flexibility in establishing and reporting on milestones for the interim goal period.
13. EPA should allow states the flexibility to amend plans as needed to reflect new developments and changing conditions in the electricity market.
14. EPA should recognize that existing and pending environmental controls can decrease coal unit efficiency and should adjust targets to reflect this reality.
15. EPA should recognize that the redispatch of NGCC plants ahead of coal plants can negatively impact coal plant efficiency and should adjust the Block 1 target accordingly.
16. EPA should determine heat rate improvement potential based on unit-specific evaluation to recognize and reward plants that have already invested in efficiency upgrades.
17. EPA should use a lower targeted capacity factor (i.e., <70%) in developing Block 2 targets to account for anticipated load growth.
18. EPA should use the operating capacity of Utah NGCC units rather than nameplate capacity in evaluating the potential for redispatching NGCC ahead of coal.
19. EPA should accurately account for heat rate penalties associated with the redispatch of NGCC ahead of coal.
20. EPA must ensure that Block 2 targets do not interfere with the ability of Utah to address existing and future air quality regulations.
21. EPA should favor compliance mechanisms that don't create "winners and losers."

22. EPA should adopt an approach that is consistent with regard to goal setting and compliance, while allowing states flexibility in utilizing out-of-state renewable generation for compliance purposes.
23. EPA must adopt an approach that consistently and adequately addresses legal, economic and technical implications of renewable energy compliance options.
24. EPA should provide clarification on how renewables will be credited among states.
25. EPA should provide clarification on how new nuclear will be credited among states.
26. If energy efficiency savings are to be incorporated into calculation of rate-based performance, EPA should provide clear guidelines on acceptable evaluation, measurement, and verification protocols.
27. In considering qualifying energy efficiency resources, EPA should justify excluding any effective and commercially viable technology, such as combined heat and power.
28. EPA should clearly recognize and reward energy efficiency savings between 2012 and 2017 and should recognize early actions on energy efficiency taken before 2012.
29. EPA should base efficiency goals on electricity use, not generation, to avoid penalizing electricity-exporting states.