

Commissioner Norman Rokeberg
Observations on EPA’s Clean Power Plan and Alaska

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EPA’s proposed Clean Power Plan, or 111(d) rule, establishes mandatory carbon emission “goals” for targeted power plants in each state. By the summer of 2016, each state must develop a plan to achieve an interim carbon emission goal starting in 2020 and a final goal by 2030. The state plans must include specific enforceable measures and responsible parties. Once approved by EPA, the state plans will be federally enforceable – by EPA and through citizen suits – and cannot be changed without prior approval from EPA. The State of Alaska responded to EPA’s proposal with a comprehensive comment letter last year.¹ A legal memorandum attached to the comment letter also outlined how the proposed rule is unlawful and beyond the authority that Congress granted to EPA in the Clean Air Act.

My individual observations here summarize and highlight points raised in that comment letter – particularly the request for an exemption – to support continued dialogue as EPA works to finalize their proposal by this summer.

I. Introduction

The fundamental flaw in EPA’s proposed Clean Power Plan is the rigid application of the same goal calculation formula to every state. Important local and regional variables – such as transmission constraints, fuel availability, or the role individual power plants play in an interdependent utility system – are not accounted for in the formula. EPA relies on “compliance flexibility” to accommodate these variables. But, in turn, state specific circumstances narrow compliance options. For some states, the advertised “flexibility” does not exist at all. Without flexibility, the proposed rule effectively preempts state energy policy while increasing energy costs, compromising the reliability, and exposing states, utilities, and consumers to citizen suits.

Alaska’s situation illustrates the importance of local variables. Our compliance options are so limited that we asked to be exempted from the rule altogether. While some of our concerns may be unique to Alaska, many illustrate broader issues raised by other stakeholders and deserve closer attention nationally.

I. The Clean Power Plan in Alaska.

The Clean Power Plan (CPP) requires each state to develop a plan by 2016 for achieving an assigned carbon emission “goal” – an adjusted statewide average rate of CO₂ emissions from certain electric generating units (“affected EGUs”).² “Affected EGUs,” the sources EPA seeks to regulate, are steam generating units and natural gas combustion turbines that were constructed for the purpose of supplying at least one-third of their potential electric output and more than 219,000 MWh of electricity to a utility each year.³

EPA tentatively identified the following “affected EGUs” in Alaska⁴:

- Unit 1 at Healy Power Plant (Healy) owned by Golden Valley Electric Association (GVEA)⁵;
- George M. Sullivan Generation Plant #2 (Plant 2) owned by Anchorage Municipal Light and Power (ML&P)⁶;
- Beluga Power Plant (Beluga) owned by Chugach Electric Association (Chugach)⁷;
- Southcentral Power Plant (SPP) owned by Chugach and ML&P⁸; and
- Nikiski Co-Generation Plant (Nikiski) owned by Homer Electric Association (HEA).⁹

EPA reports that, in the 2012 baseline year, these “affected EGUs” collectively provided 3,162 GWh of electricity to utilities at a CO₂ emission rate of 1,368 lbs/MWh.¹⁰

Generally, EPA calculated individualized state “goals” by applying the “best system of emission reductions” (BSER) to the “affected EGUs” in each state.¹¹ EPA found that four measures constitute BSER: (1) heat rate improvements at coal-fired generating units, (2) re-dispatch from coal EGUs to natural gas combined cycle (NGCC) turbines, (3) new renewable energy generation (RE), and (4) demand side energy efficiency measures (EE).¹² EPA does not, however, require that state actually use these same measures to meet the calculated goal.¹³

EPA’s goal calculation for Alaska reflects:

- (1) Improving the heat rate of Healy Unit 1 by 6 percent¹⁴;
- (2) Replacing all generation from Healy with generation from Sullivan Plant 2, Beluga, and SPP¹⁵;
- (3) Replacing 123 GWh per year of “affected EGU” generation with new RE generation¹⁶; and
- (4) Escalating energy efficiency efforts to eventually avoid generating 744 GWh each year.¹⁷

EPA’s goal calculation for Alaska sets a target adjusted emission rate of 1,003 lbs/MWh by 2030.¹⁸

A few elements of EPA’s approach in Alaska are worth noting. First, EPA did not identify Unit 2 at Healy as an affected EGU.¹⁹ This omission, together with the re-dispatch calculation, result in a goal that does not provide any allotment for emissions, and therefore generation, from either Healy unit. Second, the rule only covers units larger than 25MW.²⁰ Some residents of Alaska expressed support for the rule because of concerns about the air quality impacts of coal generation in Fairbanks.²¹ However, the only coal-fired steam generating units likely to be “affected EGUs” are at Healy, well outside of the Fairbanks air-shed.²² Third, because oil-fired combustion turbines typically only operate in regions where pipeline natural gas is not available, EPA exempted these units from the rule.²³ Therefore the naphtha and diesel generation units in North Pole and Fairbanks are not covered.²⁴ Fourth, the EPA’s energy efficiency goal is based on statewide generation,²⁵ but many EGUs in Alaska are not connected to an affected EGU. The 744GWh that EPA expects Alaska to avoid generating at “affected EGUs” is 20% of the generation EPA forecasts for those units. A considerably higher level of compliance than the 10 percent EPA calculated using statewide generation.²⁶

Finally, the cost of compliance will unavoidably fall on residents and ratepayers in an area already experiencing some of the highest electric rates in the country.²⁷ According to the Energy Information Administration, in 2012, Alaska ranked second in residential electricity costs with an average price of \$0.18 per kWh as compared to the national average of \$0.12 per kWh.²⁸ In rural communities, power costs can be as high as \$2.16 per kWh.²⁹ Because the Healy provides some of the least expensive generation available to GVEA,³⁰ because the emission rates for the coal steam generating units are substantially higher than the goal and the rates of other “affected EGUs,”³¹ and because EPA’s goal calculation assumes no generation from Healy,³² the brunt of this rule will likely fall on GVEA ratepayers in Fairbanks – where residential rates are already double the national average at about \$0.24 per kWh.³³

II. The “compliance flexibility” advertised by EPA does not exist in Alaska.

EPA’s “compliance flexibility” mantra is a myth. EPA claims to accommodate state-specific circumstances through “compliance flexibility,”³⁴ allowing states to choose:

- (1) the measures used to reduce carbon emissions from “affected EGUs,”³⁵
- (2) implementation timing over the phase-in period from 2020 to 2029,³⁶
- (3) a mass or rate-based goal,³⁷ and
- (4) a single or multi-state plan.³⁸

However, these compliance options have limits and are not universally available.

The mandated emission performance level, or “goal,” is the most obvious limit.³⁹ States must achieve final goals by the 2030 deadline. While there is some flexibility during the phase-in period, the interim goal must be met on average from 2020 to 2029.⁴⁰ EPA will not change these goals, either before or after finalizing the proposed rule, except in very limited circumstances.⁴¹

The focus on specific “affected EGUs” also limits compliance options. Emission reductions from “non-affected EGUs” – units smaller than 25MW, natural gas units producing less than one-third of their potential electric output, combustion turbines using fuel other than natural gas (like diesel or naphtha) – do not count.⁴² This means EE and RE projects in rural communities that are not grid connected to an “affected EGU” may not be eligible for compliance credit. It also means that reductions in emissions from Healy would count, but reductions from the smaller coal units in downtown Fairbanks, for example Aurora Energy’s 20MW coal-fired unit at the Chena Power Plant, would not.⁴³ Regardless of what other opportunities might exist to reduce carbon emissions from the utility sector, EPA is forcing states to target a few specific facilities.

Multi-state plans could open up lower cost compliance options.⁴⁴ But without interstate transmission, islanded states like Alaska and Hawaii cannot reduce emissions in a neighboring state. Just like our islanded rural communities cannot reduce generation at an affected EGU on the Railbelt, Alaska cannot reduce generation in Oregon or Idaho.

Allowing state plans to depart from the approach reflected in EPA’s goal calculation creates flexibility only if other measures are actually feasible and available. But, EPA already concluded

that the four BSER measures are the most technically feasible and cost effective.⁴⁵ Although EPA recognizes that the BSER measures are not universally available, the agency refuses to alter goals on that basis.⁴⁶ EPA also refuses to change the goals based on facility specific circumstances – such as excessive cost or infeasibility – a flexibility EPA usually allows for existing sources.⁴⁷ Permission to use different measures to reduce emissions might allow for variation from state to state – but it does not necessarily create compliance flexibility for individual states.

For example, in Alaska, most the BSER measures are unavailable and both the state and utilities already invested heavily in other non-BSER measures that have reduced carbon emissions. Since 2012, our utilities have made huge investments in new generating units.⁴⁸ These new generating units are more efficient and less carbon intensive than the 2012 baseline “affected EGUs.” There has also been substantial investment in new renewable generation and energy efficiency programs. Still, there is not sufficient room in our goal for GVEA to operate Healy as planned.

Compliance options are also limited to measures that are enforceable, measureable and verifiable (EM&V).⁴⁹ The need to quantify and verify the impact of RE and EE measures actually limits what measures can be used and the amount of compliance credit given in EPA’s calculations.⁵⁰ Also, because the measures outlined in state plans must be enforceable, state agencies are limited to measures for which they have authority under state law.⁵¹ Alaska’s state agencies lack the statutory authority to carry out many of the options outlined by EPA. We do not have siting authority; we do not have authority to regulate day-to-day dispatch practices; we do not have authority to require consumers to reduce consumption or implement EE measures. The RCA does have ratemaking authority; but, EPA doubts that the powers to deny rate recovery or change utility tariffs are adequate enforcement tools.⁵²

But, it isn’t just state regulators that will be enforcing the state plan. Once a measure is included in an approved state plan it is federally enforceable – by EPA and through citizen suits.⁵³ As a practical matter, states are limited to compliance measures that may be appropriately exposed to citizen suit enforcement. For example, Alaska may be reluctant to include major natural gas or transmission infrastructure projects in a state plan.

Compliance flexibility is limited for Alaska because the BSER measures are largely unavailable.⁵⁴ Heat rate improvements that might be achievable for the Healy units will be promptly reversed by the addition of pollution control technology required by EPA.⁵⁵ Re-dispatch cannot be executed without major infrastructure investments.⁵⁶ New renewable generation could potentially replace affected EGU generation, but only to the extent the resources are within geographic reach of the Railbelt and do not exceed the capacity of the transmission system to integrate non-firm energy.⁵⁷ Based on energy use trends in Alaska over the last few years, the most cost-effective EE measures may have already been implemented.⁵⁸ Ultimately, our initial review suggests that – even after everything we’ve already done to reduce the carbon intensity of electric generation in Alaska – the CPP may require premature retirement of Healy Unit 1, underutilization or premature retirement of Healy Unit 2, as well as significant new investment in transmission capacity, RE & EE.

Compliance options actually available to states will vary depending on factual circumstances. Because EPA has not yet examined the universe of state specific circumstances, EPA should allow modification to the state goals after the rule is finalized. The final rule should also shield affected entities from citizen suits and allow 111(d) compliance credits for reductions of carbon emissions from fossil fuel-fired EGUs that are not “affected EGUs.”

III. EPA expects states to solve an unknown universe of reliability challenges.

There is a growing consensus that EPA’s reliability and resource adequacy analysis is inadequate.⁵⁹ EPA determined that the CPP does not raise any “significant” concerns.⁶⁰ However, this conclusion rests on the analysis conducted in EPA’s Integrated Planning Model (IPM), which the agency acknowledges is “not highly granular.”⁶¹

The lack of “granularity” observed by EPA is the failure of the IPM to account for critical infrastructure within regions. First, for Alaska and Hawaii, EPA did not model the CPP’s impacts on our islanded utilities.⁶² For everyone else, the IPM fails to account for transmission constraints, assuming that “adequate transmission capacity is available to deliver any resources located in, or transferred to, the region.”⁶³ Consequently, EPA does not know the extent to which transmission constraints limit the availability of generation resources to serve load centers within a region. Nor does EPA know the scope of “local” grid reliability issues created by retirement and construction of generation resources.⁶⁴

Even where the IPM does attempt to measure impacts, EPA fails to recognize their significance. For example, the IPM anticipates that the rule will result in the retirement of 50GW of coal-fired and 16GW of oil/gas steam generating capacity by 2020 in just the continental United States.⁶⁵ Construction of replacement generating capacity will be required to maintain adequate reserve margins.⁶⁶ The IPM scenarios predict that the CPP will require construction of new natural gas pipelines – 4 to 8 percent more than what would be constructed without the CPP.⁶⁷ EPA is not fazed by these modeling forecasts.

Regardless of whether an impact is actually modeled and measured by the IPM, EPA simply disregards all of the “local” challenges, reasoning that they may be “managed through standard reliability planning processes.”⁶⁸ EPA relies on the “compliance flexibility” built into the rule to conclude that states will either have the time to construct necessary infrastructure or find alternative compliance pathways.⁶⁹ In the case of natural gas pipeline construction, EPA dismisses the cost and reliability challenges as only a minor departure from business as usual.⁷⁰ Essentially, EPA assumes, without analysis, that states and utilities will find a way to resolve an undefined universe of “local” reliability and resource adequacy issues created by the CPP.⁷¹

Contrary to EPA’s conclusion, these “local” challenges may involve “significant” reliability challenges and costs. For example, the infrastructure projects to bring natural gas to interior Alaska are well beyond the scope of “routine.”⁷² Resolving our “local” transmission constraints would also require extraordinary measures. In particular, replacing Healy coal generation with NGCC generation would require a major infrastructure project upgrading the Railbelt transmission system from southcentral Alaska. Because of imminent retirements of NGCC “affected EGUs” in the Anchorage area, there might not even be adequate NGCC generation in

southcentral Alaska. In the end, re-dispatch as imagined by EPA could require construction of new generation capacity and additional transmission upgrades.⁷³

Forcing premature retirement of generation capacity is not a small matter either; in Alaska, retiring Healy would essentially put Fairbanks on “a 350 mile extension cord”⁷⁴ – raising some obvious reliability concerns. This “extension cord” would cross through remote and difficult to access areas. In light of anticipated retirements in GVEA’s generation fleet,⁷⁵ without Healy, a single outage on the existing Railbelt transmission system would leave the Fairbanks load center without adequate generation resources.

Given the importance of reliable electric service to the U.S. economy as well as health and safety, these issues must be resolved.⁷⁶ Engaging FERC in this inquiry, as the energy committees have done,⁷⁷ is important. These efforts will ensure necessary agency expertise is applied as the CPP is finalized. However, there must be room after the rule is finalized to address reliability issues as they arise as well. The final rule should allow adjustments to state goals in appropriate circumstances.

IV. The Clean Power Plan will increase energy costs nationwide and in Alaska.

The proposed rule will increase the cost of energy.⁷⁸ EPA predicts that the rule will increase retail electricity prices 6 to 7 percent by 2020 and 3 percent by 2030 in the contiguous states.⁷⁹ EPA estimates annual compliance cost of \$8.8 billion by 2030 (2011\$).⁸⁰ However, others estimate that the annual compliance costs will be much greater – \$177 billion by 2020.⁸¹

Either way EPA does not seem to recognize an actual limit on its authority to impose costs. The agency acknowledges that the Clean Air Act requires that the cost of compliance must be “reasonable.”⁸² But the cost ceiling recognized by EPA is where costs are greater than the industry as a whole “could bear and survive.”⁸³ EPA makes a point of noting that “the D.C. Circuit has never invalidated a [§111] standard of performance on grounds that it was too costly.”⁸⁴

The Clean Air Act requires any BSER determination to account for the cost of compliance.⁸⁵ EPA even elected to prioritize cost as a consideration in this rulemaking.⁸⁶ Given potential scope of impacts of the CPP on the U.S. economy and individual consumers, it is important that EPA accurately measures and accounts for all of the costs.

A. EPA expects the Healy Power Plant to be among the coal generating units closed by the Clean Power Plan.

EPA concludes that compliance costs that force the closure of power plants are “reasonable.”⁸⁷ In fact, EPA concludes that the CPP will render 50GW of coal generation capacity uneconomic in the contiguous United States by 2020.⁸⁸ In Alaska, the 1,003 lb/MWh goal does not include any allocation for generation by either Unit 1 or Unit 2 at Healy.

Whether it is reasonable to shut down a particular power plant depends upon other specific circumstances such as regional fuel availability,⁸⁹ the amount carbon reductions at issue, “local”

reliability and resource adequacy concerns, and the degree of compliance flexibility actually available to an individual state. In Alaska, pipeline natural gas is not currently available to Fairbanks, the load center served by Healy. It is this kind of fuel unavailability that led EPA to exempt oil-fired stationary combustion turbines from regulation altogether.⁹⁰ As detailed below, the cost of abandoning Healy would increase energy costs to a far greater extent than EPA assumed – shifting the cost to benefit ratio for our state. But instead of examining state specific circumstances, EPA takes the chance that the rule will not leave consumers in the dark.

B. The cost of implementing the Clean Power Plan in Alaska outpaces EPA’s estimates at nearly every step.

Although EPA did not evaluate the cost of compliance in Alaska,⁹¹ our circumstances illustrate the scale of the underestimated costs.

Just the cost of implementing the re-dispatch building block, replacing generation from the Healy Power Plant with generation from NGCC EGUs, would involve major infrastructure projects and stranded costs.⁹² For the 45,000 ratepayers in GVEA’s service area we estimate that this would result in a rate increase of \$0.05 to \$0.07 per kWh, bringing residential rates to \$0.29 to \$0.31 per kWh. Fairbanks residents would be paying an additional \$450 each year for the Clean Power Plan, a 26 percent increase – significantly greater than the 3 or 6 percent increase anticipated by EPA.⁹³

EPA’s analysis of the cost to achieve a 6 percent heat rate improvement (HRI) only looked at units between 200MW to 900MW.⁹⁴ EPA recognizes that smaller units, like the 27 and 52.5MW units at Healy, are likely to experience greater costs to achieve HRI because they lack economies of scale.⁹⁵ EPA also recognizes, heat rate improvements may be accomplished through the use of “best practices” or equipment upgrades only to the extent those measures have not already been implemented at a facility.⁹⁶ EPA also acknowledges that coal-fired units are designed to operate most efficiently at full capacity.⁹⁷ Therefore efficiency improvements may be effectively reversed by implementation of the other BSER measures which aim to decrease coal generation.⁹⁸

In Alaska, GVEA cannot achieve a 6 percent improvement in the heat rates of the 27 and 52.5MW Healy units.⁹⁹ GVEA reports an investment of \$2,986,000 would be required to achieve a possible 2.15% heat rate improvement for Healy Unit 2 and an investment of \$2,122,000 would be required to achieve a 2.11% improvement for Healy Unit 1.¹⁰⁰ The future installation of pollution control technologies, required by a consent decree with EPA, will reverse these gains.¹⁰¹ GVEA anticipates that the required SNCR equipment will degrade the heat rate of Healy Unit 1 by about 0.1% (2017).¹⁰² The installation of SCR equipment (in 2017 and by 2024 for Unit 1 and 2, respectively) will result in a 2.87% degradation of the heat rate at each unit.¹⁰³ So, after investing over \$5 million to achieve a 2% improvement for 80MW of coal generating capacity, GVEA ultimately could not make any progress against the 2012 baseline.

V. The Clean Power Plan expands EPA’s regulatory authority

A. The proposed rule reaches into consumer households.

The “standards of performance” proposed by EPA would regulate a very broad universe of entities. EPA notes that “affected entities in an approvable state plan may include: an owner or operated of an affected EGU, other affected entities with responsibilities assigned by a state (e.g. an entity that is regulated by the state, such as an electric distribution utility, or a private or public third-party entity), and a state agency, authority or entity.”¹⁰⁴ Ultimately, because the state plans must include measures that reduce the consumption of electricity and those measures must be enforceable, the standards of performance will regulate individual consumers.

Measures aimed at reducing energy consumption would regulate the same small entities “including retail stores, offices, apartment buildings, shopping centers, schools, and churches” that the Supreme Court found to be beyond EPA’s authority in *Utility Air Regulatory Group*.¹⁰⁵ In that case, published five days after this proposed rule appeared in the federal register, the Court observed that EPA’s expansive interpretation of the Clean Air Act would place unreasonable compliance burdens on small entities, expose small entities to citizen suits, and place excessive demands on limited governmental resources.¹⁰⁶ The Clean Power Plan raises the same issues.

B. The Clean Power Plan effectively overrides Alaska’s energy policy.

EPA’s proposal would subject central components of state energy policy to EPA oversight and enforcement.¹⁰⁷ EPA reasons that the “compliance flexibility” permitted by the rule effectively leaves energy policy decisions in state hands.¹⁰⁸

However, again, the compliance flexibility envisioned by EPA does not necessarily exist in state specific circumstances. State energy policy will be constrained by the available 111(d) compliance pathways. Second, the rule requires that states prioritize reducing generation from “affected EGUs” over reducing carbon emissions from non-affected EGUs, cost, reliability, or the diversification of resources. Third, the EM&V requirements may narrow the universe of EE projects that might be considered. Most significantly, once the measures constituting state energy policy are included in an approved state plan – they become subject to EPA oversight and enforcement, subject to citizen suits, and cannot be changed without EPA’s prior permission.¹⁰⁹

Like many states, Alaska is already investing in its own energy policy – a policy tailored to our state’s specific circumstances. Our state energy policy encourages new renewable generation and energy efficiency.¹¹⁰ In 2013, 26% of our electric generation already came from renewables, primarily hydroelectric.¹¹¹ Today, within the Railbelt, the 167 GWh of renewable energy generation eligible for compliance credit already exceeds EPA’s forecast of 163 GWh (excluding pre-2012 hydroelectric capacity) for Alaska by 2030.¹¹² The state, utilities, and private investors continue to evaluate other RE opportunities.¹¹³ The high cost of electric power in Alaska already provides strong incentives to use electricity efficiently and to take advantage of state (or federal) financial support to implement those EE measures.¹¹⁴ With respect to renewable energy and energy efficiency, EPA’s rule doesn’t accomplish anything in Alaska that we aren’t doing ourselves without an EPA approved state plan that opens the door to citizen suits.

Instead, the proposed rule may inhibit RE/EE progress. For example, Alaska's EE measures often focus on thermal energy efficiency measures that would not be eligible for compliance credit under EPA's proposed rule because of its focus on electric efficiency. Given the importance of heating to health and human safety in our arctic and subarctic climate – this focus on thermal efficiency is appropriate. Also, many of Alaska's EE and RE projects focus on rural communities that rely on diesel generation and bulk fuel tanks. These EE and RE projects result in demonstrable carbon reductions. However, these communities are not connected to an “affected EGU.” Disconnected from any regulated source, rural projects would not qualify as standards of performance “for” an “affected EGU” and likely would not count toward compliance.¹¹⁵ EPA's proposal would pressure the state to focus on electric energy efficiency and urban areas.

Alaska has also already made significant strides in reducing carbon emissions by installing new and more efficient generation resources since 2012 – without any EPA approved state plan.¹¹⁶ And, Alaska is already actively evaluating several natural gas projects that would bring this less carbon intensive fuel to interior Alaskan communities that rely heavily on diesel and coal.¹¹⁷ We also are already actively examining the transmission constraints that impede our ability to replace diesel and coal generation with hydroelectric and NGCC generation.¹¹⁸ While these projects would achieve the same ends as EPA's 111(d) rule, and bring a multitude of other benefits to the state, they are not suitable for inclusion in a state plan that would be subject to citizen suits.

The impact of this rule on state energy policy is also particularly dramatic in Alaska, where the transmission and consumption of electricity generated by “affected EGUs” is entirely intrastate and FERC's presence is limited (generally to hydroelectric projects and PURPA oversight).

Alaska is not insensitive to climate change. But EPA's regulations will require Alaska to expend limited government resources on developing, implementing, and enforcing a state plan that is ill-suited for our state or merely duplicates existing programs. This rule will accomplish very little in Alaska at a great cost.

VI. Alaska requested an exemption from any final 111(d) rule regulating carbon emissions from power plants.

Alaska requested an exemption from any final rule regulating carbon emissions from existing EGUs. An exemption is necessary because our electric utility sector is fundamentally different from the industry for which EPA designed the rule – in particular, our utilities lack the connectivity EPA describes as “central” to the proposed rule.¹¹⁹ Without the presumed availability of generation resources through an interconnected grid and wholesale power market, Alaska cannot reasonably execute the BSER measures that underlie the emission goals. Finally, the carbon emissions at issue in Alaska are a minuscule proportion of carbon emissions from power plants in the U.S. In 2005, fossil fuel-fired electric generation CO₂e emissions totaled 2,402.1 million metric tons, only 0.13 percent of those emissions are attributed to Alaska's entire utility sector.¹²⁰ Alaska's “affected EGUs” represent less than half of the utility sector's total generation.¹²¹ Given our transmission limits, the incredible costs associated with any attempt to

execute the BSER measures, the unexamined reliability and resource adequacy concerns, and the small amount of carbon emissions at issue – EPA should exempt Alaska from the final rule.

VII. Conclusion

Many of the concerns raised by our comments relate broadly to concerns raised by other states and stakeholders. In particular, EPA’s reasoning for this rule relies very heavily on the availability of electrical power on the interconnected North American grid. Yet, EPA did not examine interconnectivity within regions or the demands that transmission physics might make of individual generating resources – leaving those challenges, along with a fixed, mandatory emission goal, for states to figure out. Repeating the “compliance flexibility” refrain, EPA theorizes that states will be able to resolve “local” challenges within the scope of the rule. But this flexibility is largely illusory. EPA may rely exclusively on nation-wide analyses in other contexts, but more attention to regional and state circumstances must be given when regulating electric utilities providing essential services.

¹ The comment letter is available at www.regulations.gov as document number EPA-HQ-OAR-2013-0602-23855.

² *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Generating Units, Proposed Rule*, 79 Fed. Reg. 34830, 34837 (June 18, 2014) (“Proposed Rule”).

³ *See Proposed Rule*, 79 Fed. Reg. at 34854, 34954/1-2 (Proposed 40 C.F.R. §60.5795). There is some ambiguity in EPA’s “affected EGUs” criteria in this docket. The criteria for steam generating units (like Healy Unit 1) in the proposed regulation excludes “and supplies” term. The preamble to the proposed regulation, by contrast, suggests that EPA intended the criteria to be the same as proposed for new EGUs, which does include the “and supplies” language. Whether the “and supplies” language is included in this proposed rule may determine whether Healy Unit 1 is an affected EGU. *See State of Alaska comment letter on Proposed Rule*, at 40-43 (Dec. 1, 2014). The preambles to the proposed rules for new EGUs and modified and reconstructed EGUs also discuss the import of the “and supplies” term. *See Proposed Rule for New EGUs*, 79 Fed. Reg. at 1445/3, 1459/1-1461/2 (discussing the rationale for adding “and supplies” to the criteria); *Proposed Rule for Modified and Reconstructed EGUs*, 79 Fed. Reg. at 34979/1-3, 34972/1-2 (discussing the removal of the “and supplies” language from the criteria for steam generating units and IGCC facilities).

⁴ *See EPA, Goal Computation TSD, Appendix 7: 2012 Plant-Level Data for Likely Covered Fossil Sources*, EPA-HQ-OAR-2013-0602-0256; *EPA, 2012 Unit Level Data Using the eGRID Methodology*, EPA-HQ-OAR-2013-0602-0254. EPA cautions that this may not be the universe of “affected EGUs,” and does not constitute an applicability determination for any particular EGU. *EPA, Goal Computation TSD, EPA-HQ-OAR-2013-0602-0460*, at 5 n.3. Additionally, because of the actual sales criteria, the stationary combustion turbines covered by the rule may change each year. *See Proposed Rule for Modified and Reconstructed EGUs*, 79 Fed. Reg. at 34973/1.

⁵ EPA identified Unit 1 as a “likely covered fossil source.” *Goal Computation TSD, Appendix 7, 2012 Plant-Level Data for Likely Covered Fossil Sources and Unit-Level Inventory*, C1547. The emission data recorded by the CEMS on Healy Unit 1 reflects a considerably higher emission rate than EPA used in the baseline and goal calculation. *GVEA Supplemental Response, Revised Exhibit B-1, RCA Docket I-14-007* (Oct. 31, 2014) (reporting 215,406MWh of net generation and 379,232.3 tons of CO₂ emissions for Healy Unit 1 in 2012); *2012 Unit Level Data Using the eGRID Methodology* (reporting 215,407MWh of net generation and 307,155.7 tons of CO₂ emissions for Healy Unit 1 in 2012). EPA calculated emission rates by applying a generic emission factor applied to the amount of fuel consumed. *Goal Calculation TSD, Appendix 6: Description of State-level Data Development*. *GVEA tentatively anticipates retiring Healy Unit 1 in 2024. GVEA Supplemental Response, Exhibit D, RCA Docket I-14-007* (Oct. 31, 2014). However, the utility has also noted that depending upon future energy availability

Healy Unit 1 may continue operating beyond 2030. GVEA Comment on Proposed Rule for Modified and Reconstructed EGUs, EPA Docket EPA-HQ-OAR-2013-0603 (Oct. 15, 2014).

⁶ EPA identified units 5, 6, and 7 as affected NGCC EGUs at Sullivan Plant 2. Goal Computation TSD, Appendix 7, 2012 Plant-Level Data for Likely Covered Fossil Sources; 2012 Unit Level Data Using the eGRID Methodology. Unit GT8 was excluded from Alaska's baseline as a "low generation." 2012 Unit Level Data Using the eGRID Methodology. Although the nameplate capacity of Unit GT8 is over the 25MW threshold, in 2012, the unit generated only 182,660 MWh and therefore did not meet the "affected EGU" criteria of providing at least 219,000MWh to a utility. *See id.*; Proposed Rule 79 Fed. Reg. at 34895 n. 260.

ML&P anticipates that new Plant 2a units will replace Plant 2 units to provide baseload power in the near future; the Plant 2 units will be retained for backup purposes. ML&P, TA332-121, Prefiled Direct Testimony of Eugene A. Ori, at ¶¶A11-A12 (Sept. 9, 2013) available at <http://rca.alaska.gov/RCAWeb/ViewFile.aspx?id=BE90767C-95B2-4685-B33D-0E874BBFAEEC>. Although not accounted for in the 2012 baseline, two of the new Sullivan Plant 2a units (6 and 7) may be "existing" EGUs covered by this 111(d) rule.

⁷ EPA identified Beluga Units 6, 7, and 8 as NGCC units and included the 2012 baseline data in the goal calculation. Units 1 and 2 are 16 MW units and fall under the 25MW threshold; Units 3 and 5 provided 233,233MWh and 269,540MWh respectively in 2012, and were listed as affected simple cycle combustion turbines. *See* Goal Computation TSD, Appendix 7, 2012 Plant-Level Data for Likely Covered Fossil Sources; 2012 Unit Level Data Using the eGRID Methodology.

Chugach anticipates retiring Units 3 and 8 in 2015 and Units 5, 6, and 7 by 2021. With the construction of SPP, to the extent these older (and more carbon intensive) units continue to operate, they will most likely be used for peaking power and may fall under the 219,000MWh threshold. Chugach Response, RCA Docket I-14-007, at 11 (table 3) (Oct. 31, 2014).

⁸ EPA identified four units at SPP as NGCC "affected EGUs." 2012 Unit Level Data Using the eGRID Methodology. EPA labeled these units 1-4; Chugach labels them 10-13. 2012 Unit Level Data Using the eGRID Methodology; Chugach Response, RCA Docket I-14-007, Attachment 1 (Oct. 31, 2014). SPP commenced commercial operations in 2013. Chugach Response, RCA Docket I-14-007, at 11 (table 3) (Oct. 31, 2014). Thus, while EPA nominally included SPP in the 2012 baseline, there is neither generation nor emissions attributed to the plant. *See* Goal Computation TSD, Appendix 7, 2012 Plant-Level Data for Likely Covered Fossil Sources; Goal Computation TSD, at 6 ("... EPA's BSER methodology also included under construction ... NGCC capacity that was not operating in 2012.").

⁹ *See* Goal Computation TSD, Appendix 7, 2012 Plant-Level Data for Likely Covered Fossil Sources; 2012 Unit Level Data Using the eGRID Methodology. The Nikiski unit is now an NGCC unit with greatly improved efficiency. HEA Response, RCA Docket I-14-007, at 10 and Exhibit 1 (Oct. 16, 2014).

¹⁰ Goal Computation TSD, Appendix 5 at 26; Goal Computation TSD, Appendix 7, 2012 Plant-Level Data for Likely Covered Fossil Sources.

¹¹ *See* Proposed Rule, 79 Fed. Reg. at 34834/3, 34892/3, 34836/3-34837/1.

¹² *See* Proposed Rule, 79 Fed. Reg. at 34895/1-34897/1, 34898, 34895/1.

¹³ *See infra* note 34.

¹⁴ EPA, Goal Computation TSD Appendix 1-Proposed Goals, EPA-HQ-OAR-20130-0602-0255. The application of building block 2 assumes no generation at Healy. Therefore, this step does not have a direct impact on the goal set for Alaska.

¹⁵ EPA, Goal Computation TSD Appendix 1-Proposed Goals ("re-dispatched NGCC Gen" in step 3a & 3b matches the total historical (2012) NGCC and coal generation in Step 1).

¹⁶ GHG Abatement Measures TSD at 4-18 (describing the growth factor applied in the goal calculations for Alaska and Hawaii as the “growth between each states’ individual historical 2002 and 2012 RE generation”), 4-29 (identifying proposed interim and final targets); Proposed RE Approach Data File, EPA-HQ-OAR-2013-0602-0240, “Input-EIA 2012 Generation Data” worksheet at cell C72 (showing 11.43% growth rate), “Calc Method Using MWh” worksheet at W16 (showing 163,089 MWh of additional renewables by 2029).

¹⁷ GHG Abatement Measures, Chapter 5 Supporting Data & Analysis, Scenario 1, “Sorted_by_State” worksheet, cell W1078 and W1097; Goal Computation TSD, Appendix 1 (step by step goal calculation).

¹⁸ Proposed Regulation 34957 table 1; Goal Computation TSD, Appendix 5 at 26.

¹⁹ EPA listed Healy Unit 2, or the Healy Clean Coal Project, as “indefinitely postponed” and did not include any allocation of generation or carbon emissions in the baseline or goal calculation for that unit. 2012 Unit Level Data Using the eGRID Methodology; Goal Computation TSD, Appendix 7, 2012 Plant-Level Data for Likely Covered Fossil Sources. GVEA intends to commence commercial operation of Healy Unit 2 in 2015. GVEA Supplemental Response, Exhibit D, RCA Docket I-14-007 (Oct. 31, 2014).

²⁰ Net generation of 219,000MWh is equivalent to operating a 25MW unit at capacity 24-hours a day for 365 days. *See* Proposed Rule for New EGUs, 79 Fed Reg. at 1446/1.

²¹ *See e.g.* Nancy Kuhn, Comment on Proposed Rule (July 23, 2014); Alaska Environmental Power Comments, RCA Docket I-14-007, (Oct. 24, 2014).

²² Goal Computation TSD, Appendix 7, 2012 Plant-Level Data for Likely Covered Fossil Sources; 2012 Unit Level Data Using the eGRID Methodology. For example, the coal steam generating units at Aurora Energy’s Chena Power Plant have nameplate capacities below the 25MW threshold, they cannot provide 219,000MWh of net electric output to a utility, and therefore are not “affected EGUs.”

²³ Proposed Rule for New EGUs, 79 Fed. Reg. 1430, 1446 n. 83 (Jan. 8 2014); Proposed Rule for Modified and Reconstructed EGUs, 79 Fed. Reg. 34,960, 34,973 n. 65 (June 18, 2014). Because an existing source may be regulated under 111(d) only if it would be regulated under 111(b) if it were new, these units also are not covered under 111(d).

²⁴ *See* 2012 Unit Level Data Using the eGRID Methodology (categorizing these units as OTHCC or EXCLUDE); Goal Computation TSD, Appendix 7, 2012 Plant-Level Data for Likely Covered Fossil Sources (EPA does not identify these units as affected EGUs).

²⁵ *See* EPA, kWh sales by state, EPA-HQ-OAR-2013-0602-0588; GHG Abatement Measures, Chapter 5 Supporting Data & Analysis, Scenario 1, “Sorted_by_State” worksheet, cell E1077.

²⁶ EPA’s goal calculation for Alaska reduces in business as usual generation from affected EGUs by 744 GWh due to enforceable EE programs. 744 GWh is 20.5% of the 3,637 GWh of business as usual sales that EPA forecasts for Alaska’s affected EGUs in 2030. Nationally, EPA believes 11.14% of affected EGU generation may be avoided through EE programs. *See* GHG Abatement Measures TSD, Chapter 5 Supporting Data & Analysis, Intermediate Data at line 7 and RefTables at E35; Goal Computation TSD, Appendix 7 (reporting 2012 generation from affected EGUs); GHG Abatement Measures TSD, Chapter 5 Supporting Data & Analysis, Sorted by Variable at V221 (stating EE goals as a cumulative percent of business as usual retail sales).

²⁷ The “affected EGUs” in Alaska are all owned by vertically integrated cooperative or municipal utilities, not investors. Fairbanks ratepayers may bear the greatest compliance costs in Alaska. The RCA regulates electric utilities according to traditional economic ratemaking principles – requiring that reliable service is provided at just, reasonable, non-discriminatory rates. AS 42.05.431. Utilities, under RCA oversight, must apportion charges to their respective customer classes according to the “cost causer-cost payer” principle. 3 AAC 48.510. A major compliance cost for Alaska would be replacing the coal generation supplying GVEA customers – implementing the re-dispatch building block. The cost-causer, cost-payer standard would assign these costs to GVEA customers. Assigning the

compliance costs to other entities or utilities would effectively be a cross-subsidy to supply energy to GVEA's customers.

²⁸ EIA, Electricity Data Browser, Average Retail Price of Electricity, available at <http://www.eia.gov/electricity/data/browser>.

²⁹ Alaska Energy Authority, Power Cost Equalization Program Statistical Data by Community: July 1, 2012 to June 30, 2013, at 98 (February 2014), *available at* <http://www.akenergyauthority.org/PDF%20files/pcereports/FY13StatisticalRptComt.pdf> (PCE Report). Power costs \$2.16 per kWh in Lime Village. PCE Report at 98. But even in hub villages and urban areas, electricity is considerably more expensive than elsewhere in the country. For example, power costs \$0.40 per kWh in Nome and \$0.58 in Fort Yukon. PCE Report at 57, 119. The weighted average cost of power in Anchorage, Fairbanks, and Juneau is approximately \$0.1482 per kWh. *See* Order U-14-080(1), *Order Issuing Notice of Proposed Base Amount for Power Cost Equalization Calculations, Setting Comment Deadline, Scheduling Hearing, Addressing Statutory timeline, Designating commission Panel, and Appointing Administrative Law Judge*, at Appendix A (RCA May 19, 2014).

³⁰ GVEA, Tariff Advice Letter No. 257-13 at Exhibit 2 (Nov. 25, 2014) available at <http://rca.alaska.gov/RCAWeb/ViewFile.aspx?id=E58CA758-B2E4-43E2-BCD7-55E0CF5C8B77> (TA257-13) (reporting the cost per net kWh of generation by source).

³¹ The CEMS on Unit 1 reports an emission rate of 3,521 lbs/MWh for the 27 MW EGU. GVEA anticipates an emission rate of about 2,666 lbs/MWh for the 52.5 MW Unit 2. *See* GVEA Supplemental Response, RCA Docket I-14-007, Exhibit B-1 (Oct. 31, 2014). EPA calculated the weighted average emission rate for all affected EGUs in 2012 at 1,368 lbs/MWh. Goal Computation TSD, Appendix 5, at 26.

³² *See supra* note 13 and accompanying text.

³³ GVEA Rates/Billing, <http://gvea.com/rates/rates> (last visited Jan. 12, 2015) (GVEA's average residential customer pays \$142.26 each month for approximately 600 kWh of electricity).

³⁴ "Compliance flexibility" has been a central theme in EPA's presentation of this proposed rule. *See* EPA Fact Sheet: Clean Power Plan, Flexible Approach to Cutting Carbon Pollution (available at <http://www2.epa.gov/sites/production/files/2014-05/documents/20140602fs-plan-flexibility.pdf>); Proposed Rule, 79 Fed. Reg. at 34,897/1-34,898/1.

³⁵ EPA proposes to allow states to select which measures will be used to reduce carbon emissions from "affected EGUs" in their states. States do not have to use the building blocks in the proportion reflected in the goal calculations and may use measures other than those EPA identifies as BSER. Proposed Rule, 79 Fed. Reg. at 34897/1-2. EPA also believes that by applying a "conservative" level of stringency for each building block in the goal calculation, room remains for states to pursue some building blocks more aggressively than reflected in state goals. Proposed Rule, 79 Fed. Reg. at 64896/3 64893/2.

³⁶ Proposed Rule, 79 Fed. Reg. at 34897/2. EPA believes that the "glide path" introduced in the October NODA would increase the timing flexibility.

³⁷ Proposed Rule, 79 Fed. Reg. at 34897/2. The choice of a mass or rate-based goal involves trade-offs – the mass-based goal simplifies accounting for emissions while a rate-base goal allows for growth in demand. *See* Proposed Rule, 79 Fed. Reg. at 34894/1.

³⁸ Proposed Rule, 79 Fed. Reg. at 34,897/1-34,898/1.

³⁹ *See e.g.* Proposed Rule, 79 Fed. Reg. at 34891/3.

⁴⁰ Proposed Rule, 79 Fed. Reg. at 34897/2, 34904/2 "EPA is also proposing to allow states flexibility to define the trajectory of emission performance between 2020 and 2029, as long as the interim emission performance

level is met on a 10-year average or cumulative basis and the 2030 emission performance level is achieved.”); Proposed Rule, 79 Fed. Reg. at 34951/3 (proposed 40 CFR 60.5740(a)(3)(i)).

⁴¹ Proposed Rule, 79 Fed. Reg. at 34835/1 (“Once the final goals have been promulgated, a state would no longer have an opportunity to request that the EPA adjust its CO₂ goal.”); *but see* Proposed Rule, 79 Fed. Reg. at 34898 n. 269 (citing CAA §307(d)(7)B)) (EPA might consider changing state goals if the state presents information not available during the comment period). During the comment period, EPA placed the burden on states to demonstrate that its assigned goals were not achievable. EPA will only consider changing proposed goals in response to comments if a state affirmatively demonstrates an inability to compensate for the impossibility to use a BSER measure with an alternative. Proposed Rule, 79 Fed. Reg. at 34835/1, 34893/1-2.

⁴² *See* Proposed Rule, 79 Fed. Reg. at 34910/1 (BSER measures “reduce CO₂ emissions from affected EGUs”); Proposed Rule, 79 Fed. Reg. at 34920/1 (noting that some CO₂ emissions avoided through RE and EE measures “may be from non-affected EGUs” and seeking comment on how to account for that fact); Proposed Rule, 79 Fed. Reg. at 34956 (emission standards include measures that avoid emissions from “affected sources”); State Plan Considerations TSD at 23 (“Some of the CO₂ emissions avoided through RE and demand-side EE measures may be from non-affected EGUs.... These dynamics may need to be addressed in a state plan when crediting or adjusting CO₂ emission rates of affected EGUs based on the effects of RE and demand-side EE measures.”); Proposed Rule, 79 Fed. Reg. at 34902/3-34903/3 (reasoning that RE and EE standards are “reasonably considered to be ‘for’ affected sources if they would have an effect on affected sources, by, for example, causing reductions in affected EGUs’ CO₂ emissions by decreasing the amount of generation needed from affected EGUs”); EPA, Legal Memorandum at 78 n. 63 (reasoning that the beyond the unit measures “ultimately reduce emissions solely from regulated EGUs.”).

⁴³ EPA discusses emissions trading as a compliance technique. Proposed Rule 79 Fed. Reg. at 34833/2, 34837/1. However, given EPA’s questions about how to account for reduced generation at non-affected EGUs, it seems that non-affected EGUs are beyond the scope of the trading program proposed by EPA. *Also see* Proposed Rule, 79 Fed. Reg. at 34848/2 (CO₂ emission allowances for an emission trading program issued only to “affected EGUs”). Alaska requested an in-state REC option if the rule is applied here to capture emission reductions in rural communities and smaller fossil-fuel fired EGUs. *See* State of Alaska comment letter on Proposed Rule, at 47-48 (Dec. 1, 2014).

⁴⁴ Proposed Rule, 79 Fed. Reg. at 34897/3 (EPA expects this flexibility to reduce the cost of achieving the state goals”); Jeffery Tomich, “MISO study suggests bigger is better when it comes to EPA carbon compliance” (Sept. 18, 2014); Proposed Rule, 79 Fed. Reg. at 34922/1 (multi-state plans may be used in “contiguous electric grid region”); Proposed Rule, 79 Fed. Reg. at 34900/3 (noting that multi-state plans are allowed “in recognition of the fact that electricity is transmitted across state lines, and that state measures may impact, and may be explicitly designed to reduce, regional EGU CO₂ emissions.”).

⁴⁵ *See e.g.* Proposed Rule, 79 Fed. Reg. at 34,836/2.

⁴⁶ Proposed Rule, 79 Fed. Reg. at 34893/1-2.

⁴⁷ Proposed Rule, 79 Fed. Reg. at 34,925/1-34926/1 (citing 40 C.F.R. §60.24(f)). This general 111(d) implementing regulation, which EPA proposes to not apply to this proposed rule, implements the CAA directive that EPA “...shall permit the State... to take into consideration, among other factors, the remaining useful life of the existing source.” Proposed Rule, 79 Fed. Reg. at 34,925/2; 42 U.S.C. 7411(d)(1).

⁴⁸ *See supra* notes 5-8; *also see* State of Alaska comment letter at 33-34.

⁴⁹ Proposed Rule, 79 Fed. Reg. at 34909.

⁵⁰ *See* Proposed Rule, 79 Fed. Reg. at 34921/1 (noting that the agency does not intend limit the types of RE and demand-side EE measures and programs that can be included in a state plan, but conditioning that intent on the availability of supporting EM&V that is rigorous and complete).

⁵¹ See State Plan Considerations TSD at 16 (noting that to be enforceable affected entities may have to voluntarily submit to state authority “pursuant to state statutory or regulatory authority specified in a state plan” and that new state legislation may be required to support state plans) Proposed 40 CFR 60.5740(a) (11)(i), Proposed Rule, 79 Fed. Reg. at 34952 (state plans must include supporting material demonstrating the state’s legal authority to carry out each component of its plan).

⁵² State Plan Considerations TSD at 15-16.

⁵³ Proposed Rule, 79 Fed. Reg. at 34901/1 (“The EPA is proposing that all measures relied on to achieve the emission performance level be included in the state plan, and that inclusion in the state plan renders those measures federally enforceable.”); *also see* State Plan Considerations TSD at 17 n. 17 (“We note that under the CAA, measures included in an approved 111(d) state plan would be federally enforceable by EPA, and that citizens would also have the ability to file citizen suits to compel enforcement of state plan obligations under CAA Section 304 (42 U.S. Code Section 7604).”)

⁵⁴ See State of Alaska comment letter on Proposed Rule (Dec. 1, 2014).

⁵⁵ See *infra* Part IV.B.

⁵⁶ See State of Alaska comment letter on Proposed Rule, at 12-26.

⁵⁷ See State of Alaska comment letter on Proposed Rule, at 12-26.

⁵⁸ See Chugach Response, RCA Docket I-14-007, at 6-7 (illustrating a 5 percent reduction in retail consumption from 2002 to 2013 and a 7 percent reduction for all Railbelt utilities since 2000).

⁵⁹ Peter Behr and Hannah Northey, E&E, EnergyWire, GRID: Computer models contest EPA Clean Power Plan’s reliability impacts. (Dec. 17, 2014) available at <http://www.eenews.net/stories/1060010675>; Senate and House Energy Committees letter to FERC Chair LaFleur (Nov. 24, 2014) available at http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=7c6f8e3e-76fb-4a41-91c6-e7b2c692e8ed&utm_source=&utm_medium=email&utm_campaign=11755; NERC, “Potential Reliability Impacts of EPA’s Proposed Clean Power Plan: Initial Reliability Review, at 2, 27 (Nov. 2014); FERC Commissioner Moeller letter to EPA Administrator McCarthy (Dec. 1, 2014).

⁶⁰ Proposed Rule, 79 Fed. Reg. at 34900/1; 34890/2.

⁶¹ Behr, GRID: Computer model (Dec. 17, 2014).

⁶² EPA, Regulatory Impact Analysis for the Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants, at ES-15 n.7 (June 2014) (noting EPA’s lack of information regarding impacts in Alaska and Hawaii); *Id.* at 3-46 (noting that IPM does not account for costs or benefits of Proposed Rule in Alaska) (“RIA”). But the agency included a goal for Alaska in the proposed rule, so presumably our challenges are among those that the agency concluded could be resolved “through standard reliability planning processes.”

⁶³ Proposed Rule, 79 Fed. Reg. at 34899/3 and n. 271. EPA relies on the IPM analysis to support its evaluation of re-dispatch. Proposed Rule, 79 Fed. Reg. at 34864/2-2 The IPM “assumes that adequate transmission capacity is available to deliver any resources located in, or transferred to, the region.” RIA at 3-32.

⁶⁴ Resource Adequacy and Reliability TSD at 5.

⁶⁵ Resource Adequacy and Reliability Analysis TSD at 5; RIA 3-32.

⁶⁶ Resource Adequacy and Reliability Analysis TSD at 5.

⁶⁷ RIA, 3-26

68 Proposed Rule, 79 Fed. Reg. at 34900/1; Resource Adequacy and Reliability TSD; RIA 3-33.

69 RIA 3-32-33.

70 Proposed Rule, 79 Fed. Reg. at 34864/1 (“planners have repeatedly demonstrated the ability to methodically relieve bottlenecks and expand capacity”). By contrast, EPA concludes that the cost of expanding natural gas infrastructure *is* cost prohibitive for integrating new NGCC capacity. Proposed Rule, 79 Fed. Reg. at 34877/1.

71 *See* Behr, GRID: Computer Models. EPA prioritized the amount of emission reductions, the cost of achieving those reductions, and the promotion of technology implementation ahead of reliability and resource adequacy. Proposed Rule, 79 Fed. Reg. at 34890/2.

72 Bill White, Guide to Alaska natural gas projects (September 10, 2014) available at <http://www.arcticgas.gov/guide-alaska-natural-gas-projects#lng> (describing natural gas projects as “epic.”)

73 *See* Alaska Comments at 13-17. EPA calculated Alaska’s goal based on the assumption that all generation at the Healy Power Plant could be displaced by NGCC generation. The NGCC EGUs that EPA’s goal computation assumes can replace Healy’s 80MW of coal generation are located more than 200 miles south of Healy, beyond the other end of the Alaska Intertie. The Alaska Intertie is already generally operated at capacity to deliver hydroelectric and natural gas generation to GVEA’s customers in the Fairbanks load area.

74 Alan Baily, EPA emission rule comes under scrutiny: Utilities say one size fits all approach to regulating power plant CO₂ emissions may not work in Alaska’s unique situation, 19 Petroleum News 47, at 7 (Nov. 23, 2014).

75 *See* GVEA Supplemental Response, Exhibit D, RCA Docket I-14-007 (Oct. 31, 2014) (GVEA anticipates retiring around 200MW of generation capacity in the Fairbanks area by 2027).

76 Also, the Clean Air Act requires that a BSER determination “account” for energy requirements. 42 USC §7411(a). For this rulemaking, EPA determined that “energy requirements” includes the reliability of electric service and the ability to meet demand. Proposed Rule, 79 Fed. Reg. at 34,879/3.

77 Letter from Fred Upton, Ed Whitefield and Lisa Murkowski to Cheryl A. LaFleur, Chairman, Federal Energy Regulatory Commission (Nov. 24, 2014).

78 Proposed Rule, 79 Fed. Reg. at 34934 (“Under Option 1, average nationwide retail electricity prices are projected to increase by roughly 6 to 7 percent in 2020 relative to the base case, and by rough 3 percent in 2030 (contiguous U.S.). Average monthly electricity bills are anticipated to increase by roughly 3 percent in 2020, but decline by approximately 9 percent by 2030. This is a result of the increasing penetration of demand-side programs that more than offset the increased prices to end users by their expected savings from reduced electricity use.”); Proposed Rule, 79 Fed. Reg. at 34934/3-34935/1 (“The EPA projects that the annual incremental compliance cost of Option 1 is estimated to be between \$5.5 and 7.5 billion in 2020 and between \$7.3 and 8.8 billion (2011\$) in 2030.”); *also see* RIA Chapter 3.

79 Proposed Rule, 79 Fed. Reg. at 34935/1.

80 Proposed Rule, 79 Fed. Reg. at 34934/3-34935/1.

81 Behr, GRID: Computer Models.

82 *See* EPA Legal Memorandum at 37

83 Proposed Rule, 79 Fed. Reg. at 34879 n. 195; *also see* EPA Legal Memorandum at 39; Proposed Rule for New EGUs, 79 Fed Reg. at 1467.

84 Proposed Rule for New EGUs, 79 Fed Reg. at 1464/2.

85 42 USC §7411(a).

86 Proposed Rule, 79 Fed. Reg. at 34879/2; 34890/2.

87 Proposed Rule for New EGUs, 79 Fed Reg. at 1462/1.

88 Proposed Rule, 79 Fed. Reg. at 34956/1.

89 For example, EPA declines to issue standards of performance for oil-fired stationary combustion turbines, in part because they “are typically used only in areas that do not have reliable access to pipeline natural gas for example, in non-continental areas.” Proposed Rule for Modified and Reconstructed EGUs, 79 Fed. Reg. at 34973.

90 Proposed Rule for New EGUs, 79 Fed. Reg. 1430, 1446 n. 83 (Jan. 8 2014); Proposed Rule for Modified and Reconstructed EGUs, 79 Fed. Reg. 34,960, 34,973 n. 65 (June 18, 2014).

91 RIA at 3-46 (“IPM does not represent electricity markets in Alaska, Hawaii, and U.S. territories outside the contiguous U.S. and therefore the costs and benefits that may be expected from the proposed rule in this states and territories are not accounted for in the compliance cost modeling.”); RIA ES-15 n. 7 (“We do not have emission reduction information or air quality modeling available to estimate the air pollution health co-benefits in Alaska and Hawaii anticipated from implementation of the proposed guidelines.”).

92 Upgrading the transmission system to create sufficient capacity could cost in excess of \$400 million. Premature retirement of the Healy units would involve approximately \$450 million in stranded capital costs and remaining loan principal payments. Also, because coal is some of GVEA’s cheapest power, replacing generation from Healy generation would result in additional variable (e.g. fuel) costs – approximately an additional \$47 million in 2020 and \$61 million annually by 2030. H. Dale LLC, Stranded Cost Calculations for Healy Unit 1 and Unit 2 (Sept. 2014) (Attachment B). Although EPA believes that coal units retiring because of the CPP will be older (and therefore mostly or completely depreciated), Healy Unit 2 is essentially a new coal unit. It has not yet operated commercially and GVEA has not yet recovered the cost. *See* Resource Adequacy and Reliability Analysis TSD at 5.

93 In 2013, GVEA sold 286,768 MWh to 38,163 residential customers, for an average of 7,514.3 kWh per residential customer. In the same year, GVEA reported recovery of \$65,591,575 from residential customers, an average of \$1,718.72 per customer. At an estimated \$0.06/kWh to comply with the proposed 111(d) rule, this would yield an annual increase of \$450.86 to average residential electric bills.

94 GHG Abatement Measures TSD 2-33, 2-36; Sargent & Lundy, LLC, Coal-Fired Power Plant Heat Rate Reductions: Final Report at 1-1 (Jan. 22, 2009).

95 GHG Abatement Measures TSD at 2-36 n. 31.

96 Proposed Rule, 79 Fed. Reg. at 34,859.

97 GHG Abatement Measures TSD at 2-23.

98 GHG Abatement Measures TSD at 2-23.

99 GVEA Response, at 2 and Exhibit A, RCA Docket I-14-007 (Oct. 16, 2014); GVEA Supplemental Response at 2, 5 and Revised Exhibit A-1, RCA Docket I-14-007 (Oct. 31, 2014).

100 GVEA Supplemental Response, Revised Exhibit A-1, RCA Docket I-14-007 (Oct. 31, 2014).

101 *See* Proposed Rule, 79 Fed. Reg. at 34,859 n.111; Sargent & Lundy at 5.1 (noting that emission control technologies can consume large amounts of auxiliary power); Consent Decree, *United States v. Golden Valley Elec. Ass’n, Inc.*, No. 4:12-cv-00025–RRB ¶¶59-63 (D. Alaska 2012) (“GVEA Consent Decree”).

102 GVEA Supplemental Response, Revised Exhibit A-1, RCA Docket I-14-007 (Oct. 31, 2014); GVEA Consent Decree.

¹⁰³ GVEA Supplemental Response, Revised Exhibit A-1, RCA Docket I-14-007 (Oct. 31, 2014); GVEA Consent Decree.

¹⁰⁴ Proposed Rule for Modified and Reconstructed EGUs, 79 Fed. Reg. at 349817/3.

¹⁰⁵ *See Utility Air Regulatory Group v. EPA*, 134 S.Ct. 2427, 2444 (2014).

¹⁰⁶ *Id.* at 2444-2446.

¹⁰⁷ *See* Proposed Rule, 79 Fed. Reg. at 34924/2; Questions Concerning EPA’s Proposed Clean Power Plan and other Grid Reliability Challenges: Hearing on FERC Perspective Before the Subcomm. on Energy and Power of the H. Comm. on Energy and Commerce, 113th Cong. (2014) (written testimony of Tony Clark, Commissioner, Federal Energy Regulatory Commission) (“if states agree to play by the EPA’s rules, they are ceding ultimate authority of the regulation of their state’s public utilities and energy development to the EPA”). EPA acknowledges that the BSER measures include the same measures typically addressed in state energy policy. Proposed Rule, 79 Fed. Reg. at 34924/2 (“many of the decisions that states will make while developing compliance approaches are fundamentally state decisions that will have impacts on issues important to the state, including cost to consumers and broader energy policy goals.”).

¹⁰⁸ Proposed Rule, 79 Fed. Reg. at 34917/3; State Plan Considerations at 3, 13 (allowing states to assign compliance responsibilities to entities other than emission sources “provides states with broad discretion to develop plans that best suit their circumstances and policy objectives.”).

¹⁰⁹ Proposed Rule, 79 Fed. Reg. at 34901/1 (“The EPA is proposing that all measures relied on to achieve the emission performance level be included in the state plan, and that inclusion in the state plan renders those measures federally enforceable.”); State Plan Considerations at 17 n. 17 (citing 42 USC §7604); Proposed Rule, 79 Fed. Reg. 34954/1 (Proposed 40 CFR §60.5785) (“State plans can only be revised with approval by the Administrator.”); Proposed Rule, 79 Fed. Reg. 34917/1 (“If the state wishes to revise enforceable measures in its approved state plan, the EPA proposes that the state must submit the revised enforceable measures to the EPA and demonstrate that the revised set of enforceable measures in the modified plan will result in emission performance at affected EGUs that is equivalent to or better than the level of emission performance required by the original state plan.”).

¹¹⁰ AS 44.99.115.

¹¹¹ EIA, Electricity Data Browser: Net generation for electric power, annual, available at <http://www.eia.gov/electricity/data/browser> (select “net generation” data set, filter for “electric power” and Alaska) (reporting net electric generation of 1426GWh from hydroelectric, 1442GWh from other renewable energy resources, and 5964GWh from all fuels for Alaska in 2013).

¹¹² The 167GWh includes: 21MWh of HEA consumer generation; 1,241MWh from Delta Wind; 71,009MWh from Eva Creek Wind; 45,460MWh from Fire Island; 159MWh from GVEA SNAP solar and wind; 46,319MWh JBER landfill gas; 2,982MWh from South Fork hydro. EPA did not include hydroelectric in the 2012 baseline; but new and incremental hydroelectric may be used for compliance. *See* Proposed Rule, 79 Fed. Reg. at 34867/1-2; GHG Abatement Measures at 4-5. EPA likely considers landfill gas a RE resource eligible for compliance credit. *See* RIA at 6A-5; EPA, Alternative RE Approach TSD at 3 n.6; Proposed Rule, 79 Fed. Reg. 34843-34844 n. 30.

¹¹³ *See* AEA, Renewable Energy Atlas of Alaska: A Guide to Alaska’s Clean, Local, and Inexhaustible Energy Resources at 18 (April 2013) available at www.akenergyauthority.org/PDF%20files/2013-RE-Atlas-of-Alaska-final.pdf (“Renewable Energy Atlas”); GVEA Response, RCA Docket I-14-007 at 4 (Oct. 16, 2014); HEA Response, RCA Docket I-14-007 at 6 (Oct. 16, 2014); ML&P Response, RCA Docket I-14-007 at 4 (Nov. 3, 2014); Chugach Response, RCA Docket I-14-007 at 4-5 (Oct. 31, 2014).

¹¹⁴ Chugach Response, RCA Docket I-14-007 at 6-7 (Oct. 31, 2014); GVEA Supplemental Response, RCA Docket I-14-007 at 4 (Oct. 31, 2014).

¹¹⁵ See *e.g.* State Plan Considerations TSD at 23 (noting that states must distinguish between RE and EE measures that avoid CO₂ emissions from an affected EGU versus a non-affected EGU).

¹¹⁶ See Alaska comment letter at 33-34; *also see e.g.*, Denali Commission Annual Performance Report (APR) Fiscal Year 2011, at 14 (identifying 134 ton reduction in CO₂ emissions during the first four months of operation after upgrade of the Kwethluk Power Plant).

¹¹⁷ Bill White, Guide to Alaska natural gas projects (September 10, 2014) available at <http://www.arcticgas.gov/guid-alaska-natural-gas-projects#Ing>.

¹¹⁸ Alaska Energy Authority, Pre/Post – Watana Transmission Study Draft Report (March 17, 2014) (“Watana Transmission Study”).

¹¹⁹ EPA, Legal Memorandum at 43.

¹²⁰ EPA, GHG Inventory, EPA-HQ-OAR-2013-0602-0557, at ES-5; Center for Climate Strategies, Alaska Greenhouse Gas Inventory and Reference Case Projections, 1990-2020 at v (July 2007).

¹²¹ According to EPA, in 2012 Alaska’s electric utility sector generated approximately 6,898GWh. See EPA, kWh sales by state, EPA-HQ-OAR-2013-0602-0588. The net output of the “affected EGUs” identified by EPA in 2012 was 3,162GWh. See 2012 unit level data using eGrid.