



**CLEAN POWER PLAN (CPP) REPLACEMENT ANPR
QUESTIONS AND ANSWERS
SUBMITTED BY FLORIDA MUNICIPAL ELECTRIC
ASSOCIATION (FMEA)'S LARGE GENERATOR
ENVIRONMENTAL COALITION
EPA-HQ-OAR-2017-0545
RIN 2060-AT67**

FEBRUARY 26, 2018

Who is FMEA

The Florida Municipal Electric Association (FMEA) represents the unified interests of 34 public power communities across Florida. FMEA was established in 1942 in response to WWII fuel shortages and is now the official meeting place for Florida's public power community. Municipal electric utilities provide low-cost, reliable electric service, and have been doing so for over a century.

Together, FMEA staff and utility members work to protect public power's legislative, regulatory and operational interests, and to strengthen our common bonds for the benefit of Florida's communities. These comments reflect the views of the larger electric generators within FMEA's membership.

Public power utilities play an important role in Florida's electric industry:

- Serve 15 percent of the state's population – over 3 million Floridians;
- Provide an industry-wide yardstick for efficient operation and superior service;
- Promote increased wholesale competition to lower consumer power costs, and have been at the forefront of efforts to improve wholesale transmission access;
- Are community-owned and locally managed; and
- Support local government with transfer payments, which help communities pay for fire and police protection and other important local services.

FMEA provides its members with government relations, communications and education services. The Association is at the forefront of energy industry trends, and advances public power utilities toward enhancing services and continually innovating in all aspects of utility operations.

General Background Information:

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FMEA filed comments in December 2014 regarding the proposed Clean Power Plan (CPP).¹ These comments augment technical comments provided in prior rulemaking. FMEA also will file separate comments on the repeal of the CPP on April 26, 2018. These comments are submitted in response to the call for comments on the ANPRM as well as offering recommendations consistent with Executive Order 13783.² (EPA ANPRM, Section I).

Index to the FMEA Comments

The Advanced Notice of Proposed Rulemaking (ANPRM) uses Roman Numeral (I-V) outlining the ANPRM and provides instructions³ that commenters should indicate Topic Numbers 1-5 for answers. To assist reviewers, FMEA uses both Roman Numerals and Topic Numbers in EPA's framework approach.

Executive Summary

On December 28, 2017, EPA issued an advance notice of proposed rulemaking (ANPRM) asking commenters to address the design and implementation of a possible rule to replace the 2015 Clean Power Plan (CPP) regulation.⁴ EPA specifically sought comment in the ANPRM on a possible CPP replacement rule by asking a series of legal, policy and operational or technical questions. Not all questions asked in the ANPRM are addressed in these comments. Instead FMEA will focus on questions and recommendations in 16 key areas:

- EPA should propose and promulgate a replacement regulation that sets forth procedures for the states to follow, is clearly within the statutory bounds of Section 111(d) and will withstand legal challenge. (EPA ANPRM, Section 1 Role of States or Section I, Introduction and Section III, States' role and responsibilities).
- States should set **a unit by unit standard based upon individual unit conditions or on a case by case basis. This** is intrinsically linked to the unique geography, energy consumption, population growth, and age of both coal-fired and natural gas-fired power plants in Florida. (EPA, ANPRM, Topic 1 or Section I, Introduction, Question 1, 2 and 3)
- **Deference to states** is critical in the implementation of a regulation. Certainty in cooperative federalism deference to state agencies is both required under the law and is what is most practical. (EPA ANPRM, Topic 1 or Section I, Introduction and Section III, States' role and responsibilities).
- Best System of Emissions Reduction (BSER) should be set based upon what is achievable within the fence line at the combustion unit. **BSER cannot be a technology choice such as CCS/CCUS (geologic sequestration) that is not in compliance with state by state commercial property ownership, product liability or environmental laws.** (EPA ANPRM Topic 3(c) or Section III).
- EPA should give **guidelines** to the states to consider such as ideas for heat rate improvements similar to those in the ANPRM. (EPA ANPRM, Topic 1(a)(b) or Section I(a)).
- **EPA should not set a mandatory "presumptively approvable" emission limit** because a mandatory requirement would limit state discretion in making case by case determinations. States can require more stringent standards or require other work practices under their own existing authority. (EPA ANPRM Topic 1(a)(b) or Section I(a)).
- EPA states that EPA's implementing regulations authorize EPA to make the emission guidelines binding on states where EPA determines that the pollutant being regulated

¹ Docket number EPA-HQ-OAR-2013-0602.

² Issued by President Trump on March 31, 2017. See 82 FR 16093.

³ Federal Register, December 28, 2017, page 61310, middle column.

⁴ 82 Fed. Reg. 61,507 (December 28, 2017)

“may cause or contribute to endangerment of public health.” 40 C.F.R. § 60.24(c). **This regulation has no basis or foundation in the CAA.** Indeed, it is contrary to the plain language of the statute that *requires* EPA to allow the states to “take into consideration, among other factors, the remaining useful life of the existing source....” CAA § 111(d)(1). EPA should rescind this part of its implementing regulations.” (ANPRM Topic 1(a)(b))

- Existing source Standards of Performance (SOP) are established by “each State” under a “State plan” according to “regulations” promulgated by the Administrator which “shall establish a procedure” for each State to establish SOPs “for any existing source.” (111(d)(1)). A sentence added to Section 111(d) by **the 1977 CAA Amendments requires that the “regulations” the Administrator adopts under 111(d) for States to apply to “existing sources” allow States to consider “other factors,” including “the remaining useful life of the existing source.”** When this sentence was added to 111(d) in 1977, the 1975 regulations implementing section 111(d) already had numerous “other factors” that States could consider in setting a source-specific SOP, but it did not contain a “remaining useful life” factor. **The 111(d) regulations must be amended to add that statutory requirement** to allow States to use it in a meaningful way to calculate an individualized SOP for each source.
- **Florida has unique circumstances that should be considered for remaining useful life of all fossil fuel generation plants** given that the state has no natural gas production, no underground storage systems and that interstate pipelines must be built to replace retiring coal plants or to meet additional electric demand. These factors, including new FERC reviews on environmental issues, might affect decisions regarding remaining useful life of existing coal-fired generation that may not be as common in other states that have natural gas in-state storage and adequate transmission pipelines. (Topic 5)
- **Florida’s unique peninsula-like shape with frequent tropical storms, hurricanes, expected population growth, and increasing electricity demand supplied by natural gas necessitate considering reliability when making decisions about existing generation.** This is an important issue not typical in other states that are surrounded by natural gas supplies and infrastructure; or that can rely upon wind or hydro power; or for those states that like Florida have rare weather events often once a year during peak electric use times. (Topic 5)
- **New Source Review (NSR) must be harmonized and streamlined** to allow and encourage energy efficiency projects and to reduce fuel combustion (resulting in emissions of CO₂). FMEA supports EPA actions through guidance and rulemakings in advance of or contemporaneous with the CPP replacement rule to allow efficiency improvements at power plants. These actions might include plant-wide applicability and other actions. (EPA ANPRM Topic 4 or Section V(a)).
- **States should be given flexibility to make common sense decisions about what a soon-to-retire (within five years) power plant** can accomplish without massive investments. EPA should defer to states on remaining useful life of plant decisions—and in particular where existing generation is expected to retire within five years. This flexibility should include those units that have announced retirements or may privately plan to retire awaiting long-term gas contracts, biomass as pending fuel resource contract, or negotiating terms for decommissioning an existing generation facility.
- **One and done:** Section 111(d) standard for existing sources is a one-time standard and cannot be made more stringent as can Section 111(b) for new sources that might be revisited or altered through rulemaking after consideration of new demonstrated technologies. (EPA ANPRM Topic 5 or Section V).

- **Procedures and timing:** EPA should promulgate a revised Section 111(b) rule before it promulgates a Section 111(d) rule to be consistent with the statute. (EPA ANPRM, Topic 1 or Section I).
- **Regulatory Impact Analysis (RIA) must be done correctly**, including providing greater transparency and more reasonable assumptions on PM2.5 co-benefits. (EPA ANRPM Topic 5 or Section V and Executive Orders 13783 and 13771).
- EPA guidelines should accept biomass from slash waste when states allow electric utilities to use it as a compliance option with NSPS by generators. **EPA should declare slash biomass as CO₂ neutral.** However, biomass and other renewables should not be used to set the standard. (Topics 5 and Topic 3(a))

FMEA’s Response to EPA Questions Provide Recommendations:

Topic 1 EPA’s Questions on State and EPA Roles in Regulating Existing EGUs for GHGs.

- *Are EPA’s regulations that set forth the procedures and requirements for States’ submittals of, and the EPA’s action on, state plans for controlling emissions under CAA section 111, as applied in this context of regulating existing EGUs for GHGs, suitable for this purpose or do they need additional modifications. (EPA ANPRM Topic 1(a)(b) or Section III(b).)*

FMEA Answers and Recommendations:

- EPA should propose and promulgate a replacement regulation that sets forth procedures for the states to follow, is clearly within the statutory bounds of Section 111(d) and will withstand legal challenge. EPA has no statutory obligation to propose, and should refrain from proposing, prescriptive regulations or regulatory “guidelines.”⁵
 - A reasonable, state led approach to regulating CO₂ under Section 111(d) for existing generating units is preferable to Section 110 or 112 or other parts of the Clean Air Act. **(EPA ANPRM Topic 1(a)(b) or Section III- implicit in call for comments).**
 - EPA should provide reasonable guidance for states that takes into account changing operational characteristics of units, cost, reliability and resiliency of the electric grid, to enable the states to establish standards of performance that will assure that individual plants are operating as efficiently as practicable after consideration of relevant statutory factors. **(EPA ANPRM Topic 1(a)(b) or Section I, Introduction and Section III, States’ role and responsibilities).**
- *Topic 1 EPA questions commenters about a sample state plan text but this template for a plan should be generic and not mandatory for approval. (EPA ANPRM Topic 1(a)(b) or Section I, Introduction and Section III, States’ role and responsibilities).*
 - EPA’s proposed procedures to the states should make clear that the states are the primary decision makers on developing standards of performance and that Clean Air Act (CAA) Section 111(d) delegates this authority to states and the EPA procedures are not a “required minimum.” The template should also make clear that the state permit writers have considerable discretion in setting the standard based upon many factors including energy (fuel) use, remaining useful life of the plant, feasibility to meet the standard, and economics. **(EPA ANPRM Topic 1(a)(b) or Section III(b))**
 - EPA should refrain from proposing prescriptive regulations. EPA should provide guidelines and procedures for the states to follow in unit by unit standards.

⁵ See 40 CFR 60.22(b) and 40 CFR 60.22(b)(5).

- EPA could provide the states with examples of efficiency measures that could be undertaken, where appropriate, as an aid to developing state plans. However, guidance to states for setting standards should clearly indicate that states should take into account past unit upgrades as well as other factors such as the need for operational flexibility, maximum load, degradation, etc.
 - EPA should not set tonnage or percent reduction requirements or use prescriptive measures and “check off” lists for the states to go through in developing state plans.
 - EPA states that EPA’s implementing regulations authorize EPA to make the emission guidelines binding on states where EPA determines that the pollutant being regulated “may cause or contribute to endangerment of public health.” 40 C.F.R. § 60.24(c). This regulation has no basis or foundation in the CAA. Indeed, it is contrary to the plain language of the statute that *requires* EPA to allow the states to “take into consideration, among other factors, the remaining useful life of the existing source...” CAA § 111(d)(1). EPA should rescind this part of its implementing regulations.”
 - For “existing sources,” Standards of Performance (SOP) are established by “each State” under a “State plan” according to “regulations” promulgated by the Administrator which “shall establish a procedure” for each State to establish SOPs “for any existing source.” (111(d)(1)). A sentence added to Section 111(d) by the 1977 CAA Amendments requires that the “regulations” the Administrator adopts under 111(d) for States to apply to “existing sources” allow States to consider “other factors,” including “the remaining useful life of the existing source.” When this sentence was added to 111(d) in 1977, the 1975 regulations implementing section 111(d) already had numerous “other factors” that States could consider in setting a source-specific SOP, but it did not contain a “remaining useful life” factor. The 111(d) regulations must be amended to add that statutory requirement to allow States to use it in a meaningful way to calculate an individualized SOP for each source.
- **Topic 3** *Should EPA or the state determine the scope of the most appropriate emissions standards, e.g., setting unit-by-unit or broader-based standards. (EPA ANPRM Topic 3 or Section III(B)(1).)*
- EPA’s role should be limited to developing procedures and guidelines. EPA should define BSER – perhaps through listing various heat rate upgrades that can be employed as well as work practice standards – and direct the states to develop performance standards based on unit by unit analysis.⁶
 - **Topic 1(a)(b)** *In a series of questions EPA notes that they can exercise their discretion and choose to NOT make the emission guidelines binding. In that case states “may provide for the application of less stringent emission standards” if the states make case by case demonstrations that a less stringent standard is “significantly more reasonable” due to considerations of cost, physical limitations, remaining useful life and other factors. (EPA ANPRM Topic 1(a)(b) or Section III and III(b).)*
 - **Fossil Fuel-Fired Steam EGUs:** EPA must allow states to establish unit-specific performance standards, based on criteria such as age, size, type of coal, boiler design and other key characteristics of existing sources which, for the most part, can be obtained from existing data. FMEA does not believe that subcategorization alone will work for setting standards based on the vast differences in EGU design and operating criteria mentioned. However, FMEA does not oppose subcategorization where it may provide more flexibility for states in selection of appropriate standard.
 - **Simple and Combined Cycle EGUs:** While simple and combined cycle units employ a newer and less complicated generating technology, many of the same issues must be

⁶ 82 Fed. Reg. at 61,510-13.

considered in determining BSER. For this reason, FMEA believes that EPA must also allow states to establish unit-specific performance standards, based on criteria such as age, size, type of fuel (natural gas or distillate oil), turbine design and other key characteristics of existing sources which, for the most part, can be obtained from existing data. Efficiencies of both simple cycle and combined cycle EGUs have increased significantly over the last decade due in large part to technology advances including high temperature metallurgy related to turbine components. Some of the technology improvements may be applicable and cost-effective for existing units. However again, this must be done by a case by case basis.

- It is noted that fossil fuel-fired steam EGUs as well as simple and combined cycle EGUs have periodic planned outages for performing manufacturer recommended maintenance. During these times utilities typically evaluate the cost-effectiveness of efficiency and reliability upgrades of the units. In the cases where the upgrade is cost-effective it is often undertaken. However, in some cases, concerns with potential New Source Review (NSR) issues result in these efficiency improvement opportunities not being taken. It should be noted that the cost-effectiveness of many efficiency and reliability upgrades depends on the age and operational characteristics of the specific unit. Particular caution should be taken in relying solely on vendor data on efficiency improvements to determine what may be considered cost-effective on individual units in determining BSER.
 - In addition, **combined cycle units employ both a combustion turbine and a heat recovery steam generator (HRSG)**. Many of the same improvements that are available to fossil fuel-fired steam EGUs are available for the HRSG. Again, it is important to consider age, size, supplemental fuel type when used, boiler design and other key characteristics of the HRSG. Due to the relatively small size of the HRSG, energy efficiency improvements that are cost-effective for large fossil fuel-fired EGUs may not be for the HRSG. Particular caution should be taken in relying only on vendor data on efficiency improvements to determine what may be considered cost-effective on individual HRSG units in determining BSER. EPA must allow states to establish unit-specific performance standards, based on criteria such as age, size, type of coal, boiler design and other key characteristics of existing sources which, for the most part, can be obtained from existing data. Based on the vast differences in EGU design and operating criteria mentioned above subcategorization alone will not work for setting standards for this pollutant. However, FMEA does not oppose subcategorization where it may provide more flexibility for states in selection of an appropriate standard.
 - EPA should issue non-binding guidance that allows states the greatest possible flexibility.
- *Topic 1(a)(b) Should EPA address joint considerations, such as the form of the emission standard, i.e., rate- or mass-based, and compliance flexibilities, such as emissions averaging and trading? (EPA ANPRM Topic 1(a)(b) or Section III(b))*
- FMEA believes that EPA should defer to states to determine whether mass or rate-based standards or other compliance flexibilities should be followed. This case by case, unit by unit approach is consistent with the law.⁷

Topic 1(a)(b) Scope of Regulatory Authority

- *Throughout the ANPRM, EPA inquires in many ways about the scope of EPA's regulatory authority. (Implicit in Topics 1-5)*
- The answer is clear from the statute. In the specific context of limiting GHG emissions from existing EGUs, FMEA agrees with EPA that the appropriate reading of CAA section 111(a)(1) is limited to emission measures that can be applied to or at a stationary source, at the source-specific level.

⁷ 82 Fed. Reg. at 61,511-12.

- FMEA agrees with EPA in its actions to repeal the Clean Power Plan and in anticipation of a proposed and promulgated replacement rule that the emission limits can only be applied at the stationary source within the unit. The regulatory standard cannot be made outside the fence line or within the electric utility’s other functions such as in dispatch, generation choices, energy efficiency programs with commercial and residential customers, community solar programs, or other Demand Side Management or other non-generation practices and policies. FMEA points out to EPA that many state regulatory agencies filed comments questioning the original proposed CPP’s taking action to set a standard that included sources outside the fence line. Twenty-six⁸ state Attorneys General and many state energy commissioners questioned the fundamental authority of EPA to step outside the unit and to veer into setting state energy policy. In some cases, those opposed to the original CPP rule included governors, state air pollution control agencies and Attorneys General who may have supported regulations to address climate change but staunchly opposed EPA setting standards that included extending regulation outside the proper confines of the combustion source.
- **Topic I EPA questions the proper application of considering “remaining useful life” EPA ANPRM Topic 1 or Section III(B)(2).**
- Many factors should be considered in determining the remaining useful life of a plant including age of plant; whether the plant has been dispatched regularly over the last five years (allowing for some variability for cost of fuel driving decisions about whether coal or gas dispatch); proximity to natural gas supply, natural gas storage, natural gas pipelines and compressor stations needed to serve the additional electric utility usage; and whether the state has fuel concerns during frequent tropical storms or hurricanes that might necessitate having available older but not ready to be retired coal-fired generation for either peaking, intermediate or baseload purposes. Power plants that will retire within five years of the final rule should also be given latitude for making minor efficiency improvements without triggering major new investments. Appendix 2 offers additional details about Florida’s unique problems with natural gas supply and gas transmission infrastructure as studied by the North American Electric Reliability Corporation (NERC).

Florida’s Sabal Trail pipeline and associated natural gas pipeline projects



⁸ On Jan. 20, 2018 New Jersey pulled out of the lawsuit before the D. C. Circuit Court opposing Clean Power Plan (CPP) regulation reducing the number from 27 to 26.

Topic 5 Florida Specific Issues

Some factors outside the utility's control can influence the remaining useful life of a plant. Remaining useful life determinations include whether there are other options to generate electricity. For example, in Florida, a move from coal to alternative reliable generation is primarily **limited to natural gas** due to limitations on intermittency⁹ due to coastal storms, cloud coverage, lack of sufficient wind or limitations on solar power, due to water droplets in spring through fall mornings and late afternoons. Florida's peninsula shape means that the natural gas infrastructure requires bringing in natural gas from production or long-term storage in Georgia, Mississippi or other states—at least 500 hundred miles away from generation in central and south Florida.

The Sabal Trail Pipeline and the balance of the Florida Southeast Connection Pipeline Project, were scheduled to deliver natural gas from out of state to electric utilities that announced closure of coal plants. However, these two projects of >500 miles of interstate pipelines have faced a series of legal challenges¹⁰ by environmentalists who oppose the completion and operations of these natural gas pipelines to electric generators. These certification approval challenges include actions before FERC, the Florida PUC and other agencies beyond the control of U. S. EPA or a state environmental agency's air authority. FMEA points out these issues because a utility must know that it may obtain reliable delivery of natural gas before it can make determinations to retire a coal unit. The Sabal Trail pipeline problems highlight how electric utilities could have planned to retire coal-fired generation, replace it with natural gas-fired generation and the project could have commenced only to face other legal and procedural hurdles. At the time of this filing, Sabal Trail Pipeline's uncompleted segments appear to be on hold¹¹.

➤ **Topic 3 Defining BSER (EPA ANPRM Topic 3 or Section III).**

- Information EPA provides to determine the BSER based upon technology that has been “adequately demonstrated” (under the 111(a) standards of performance definition) should be in the form of guidance to states, and must consider the statutory criteria (limitation achievable by best system of emission reduction taking into account cost, non-air quality health and environmental impact, energy requirements, and the remaining useful life of the unit) as well as accounting for improvements already undertaken and other factors.

- *Topic 1 EPA asks a related BSER question referring back to ANPRM Section 111(a)(1) and what is best defined at the affected source including what efficiency improvements and practices as well as “other systems of emission reduction” are appropriate.*

EPA should enable and encourage states to consider options and criteria for establishing standards, such as:

⁹ According to EPA, renewable energy accounted for almost 2.2% of Florida's utility-scale net electricity generation in 2016.

Nearly nine-tenths of that renewable power came from biomass. See <https://www.eia.gov/state/?sid=FL>

¹⁰ Sierra Club and others with cases before the U. S. Court of Appeals for the D. C. Circuit and appeals on NEPA reviews before Federal Energy Regulatory Commission (FERC). It is possible that this issue could be resolved as soon as Feb. 7 by FERC or could require U. S. Supreme Court review. A Supreme Court consideration, if Cert is granted, might take another year. Even if FERC takes an action to resolve the issue in February 2018, FMEA worries that FERC's announcement of reviews of environmental reviews might further delay the Sabal Trail project.

¹¹ Press articles in Atlanta Journal <http://www.myajc.com/business/court-sets-stage-for-shutdown-gas-pipeline-through-georgia/tCxfiyKZlaceBQVHQE3xZP/> and Palm Beach Post <http://www.palmbeachpost.com/news/court-ruling-could-shut-down-sabal-trail-gas-pipeline/u8Oe4ybtagsvA5L2GU6kGI/>

- Set operational work practices standards that are achievable by, and applicable to, each emitting unit.
 - All performance standards should be set, including numerical performance standards, on a case by case (unit by unit) basis that considers, among other factors, the remaining useful life of the units. “Other factors” would include cost and could include historical performance testing information.
 - Consider any recent addition of pollution control equipment and its detrimental effect upon heat rate performance, changes in dispatch (e.g. due to fuel price variability), and fuel efficiency improvement equipment that may have resulted in different emission factors than historical data would indicate.
 - Determine the appropriate units of measurement for each standard it sets (e.g. lb. CO₂/net MWH, lb. CO₂/gross MWH, lb. CO₂/hour, etc.). FMEA believes that the standard for compliance should be based on CO₂ emissions per megawatt hour of energy generated. FMEA recommends using gross MWHs.
 - To the greatest extent possible use existing measurement techniques (e.g. Part 75 CEMS alternatives) appropriate for determining compliance.
 - For >5-year-old combined cycle natural gas units, consider allowing states to use best permit writer’s judgment for recognition that those units may not ramp as quickly and efficiently or respond to SSM events meeting same heat rate as 4-year-old newer combined cycle gas units that were designed to follow solar or wind generation. In some circumstances, some relatively new combustion gas-fired systems may not be able to enhance their heat rates based upon manufacturers’ warranties. In these circumstances state regulatory agencies may need to allow for workplace standards to apply where heat rates cannot be improved in existing but relatively new technologies. These are factors that states should be allowed to consider and should be referenced in the final rule.
- ***Topic 1** EPA questions whether GHG emission guidelines for existing EGUs should include presumptively approvable limits or should EPA defer this to the states to allow states to consider unique state and unit circumstances. (EPA ANPRM Topic 1 or Section III, (B)C) (D).*
- EPA should defer to the states to consider unique circumstances on a unit such as historical heat rate performance as a predictor. EPA should not propose prescriptive regulations. (**Topic 1 and 3(a) or Section III**)
- ***Topic 3(c)** EPA Question on whether carbon capture and geologic underground storage (CCS/CCUS) should be assessed as a compliance option to reduce GHG emissions. (EPA ANPRM Topic 3(c) or Section III).*
- FMEA is aware of no credible technical studies that indicate that CCS/CCUS technology is cost-effective, commercially demonstrated or available retrofit for existing coal-fired EGUs. Even if such technology were cost-effective and commercially available, the subsurface geology, mostly highly porous karst geology best described with many sinkholes, dry caves, and coastal springs, make the storage component of CCS virtually impossible in Florida. The karst geology coupled with carbonate deposits under the Floridian aquifer system offer many risks of small lateral or vertical leaks of CO₂ from geologic sequestration. FMEA’s Appendix 3 provides details on environmental, commercial, and products liability laws that preclude a commercial demonstration” or “adequate demonstration” of CCS/CCUS for Florida utilities as well as for many other states. (EPA ANPRM Topic 3(c) or Section III).
- ***Topic 3 (c)(e)** EPA asks about use of subcategories for BSER (EPA ANPRM Topic 3(e) and 3(e) or Section III).*

- EPA should allow states to establish unit-specific performance standards, based on criteria such as size, type of coal and boiler characteristics of existing sources which, for the most part, can be obtained from existing data. While FMEA does not believe that setting subcategories alone will help states set CO₂ standards, FMEA does not oppose consideration of subcategories by states to provide flexibility. Subcategories and workplace practices should not be precluded if useful for other GHG regulations (methane) that may be addressed in future rulemakings. FMEA has reviewed ideas for subcategories including type of coal-fired unit, age of plant, remaining expected years of operation, and coal use type and found that a subcategorization approach is overly complicated and does not appear feasible for Florida. Subcategorization of gas-fired combined cycle and simple cycle turbines would prove more feasible due to the uniformity of fuel and generation technology. (**ANPRM Topic 3(e)**)
- **Topic 5 EPA should be clear in the guidance to states that states may make determinations on using biomass as fuel for compliance with Section 111(d) although biomass and other renewables may not be used to set the standard.** EPA should make a final decision about slash biomass. FMEA recognizes that there are far more complicated matters pending before the Science Advisory Board (SAB) but FMEA believes this is a relatively easy issue to resolve. (**ANPRM Topic 5 or Section V**)

Biomass in Florida

Biomass slash waste is best defined as using forest residue, low quality trees, tree tops, limbs, and chunks that would have been left to rot or been burned in a forest fire. In Florida it is possible for some electric utilities to use slash forest waste or private land slash waste biomass as a way to both reduce GHGs in electricity generation and perform a public good by elimination of a waste fuel that can cause fires. Slash biomass should not be confused with the harvesting of new trees planted and harvested for the primary or sole purpose of burning as a fuel. Use of woody biomass as an electric utility fuel will not likely logistically work on a massive scale (>800 MW) due to the distance between the land and power plants, volume of biomass needed, or manpower to move the biomass that far exceeds that to move coal or natural gas. If the Florida state air authorities see benefits for utilities to use slash woody biomass from private lands to reduce or eliminate risks of fire and in reducing CO₂, then this should be allowed along with more conventional heat rate improvements at the generation source. Gainesville's 102 MW biomass plant will eventually lead to an 8-10 percent decrease in utility rates for city residents and save those residents \$27 million annually. If GRU did not use this slash waste as a fuel it would decompose in nature where decomposing wood waste releases both carbon dioxide and methane into the air, the latter which is at least 20 times more potent as a greenhouse gas than carbon dioxide alone.¹² Gainesville's natural gas and biomass generation serves 93,000 retail and wholesale customers.¹³

Topic 4 (ANPRM Section V) Interactions between 111(d) GHG Regulations and other Programs

- *EPA asks about the impacts of the NSR Rules on implementing 111(d) GHG rules (EPA ANPRM Topic 4 or Section V).*
- EPA must include a clear path for existing units to meet Existing Source Performance Standard obligations to reduce GHG emissions without triggering New Source Review standards. (**EPA ANPRM Topic 4 or Section V**).

- NSR must be addressed before maximum opportunities to improve heat rate can be accomplished. FMEA defers to UARG comments on this issue. (*EPA ANPRM Topic 4 or Section IV (A)(B)*).
 - *EPA highlights problems with setting standards – “rebound effect”, operational changes, triggering NSR and interaction with NSPS under Section 111(b), degradation – asking for suggestions on how to address these issues. (EPA ANPRM Topic 4, Section IV).*
 - EPA has expressed concern that projects undertaken on EGUs to increase efficiency and reduce CO₂ emissions per megawatt hour could increase total annual CO₂ emissions in a rebound effect due to increased capacity factors on the units. FMEA believes that in most cases efficiency projects undertaken to comply with a CPP replacement rule will not result in the rebound effect that would subject the EGU to NSR. Utility systems employ a dispatch order or rate to operate their EGUs. Typically, the most economical and efficient unit(s) are dispatched for electricity first followed by progressively less efficient and economical units. If the efficiency improvement to an EGU does not change its position in the order of dispatch of the system's units, the efficiency improvement would not have caused the unit to run at a greater capacity factor than prior to the improvement and emissions of CO₂ and other air pollutants would be lowered. In the case that the efficiency improvement moves the EGU up in the dispatch order it might run at a greater capacity factor but at the same time a less efficient unit in the system would run less. If the displaced unit(s) are similar to the unit (in the same subcategory) with the improvements and burn the same fossil fuel, overall CO₂ emissions would again be lowered. In the first case NSR would not be a factor since the improvement itself would not increase the use of the unit beyond what the utility would require without the improvement.¹⁴ In the second case EPA should allow the states the ability to consider the net system CO₂ emission in determining NSR applicability. In the unlikely event that the EGU with the efficiency improvements displaces an EGU with a lower CO₂ emission rate, overall CO₂ emissions could increase. In those cases, NSR may apply if a significant increase in future actual emissions results from the efficiency improvement project.
 - Due to the potential magnitude of the EGU efficiency improvements that may occur with a CPP replacement rule, EPA guidelines to the states should include a comparison of a utility system's actual CO₂ emissions to future actual system CO₂ emissions with the proposed efficiency improvements to the system. If the future actual CO₂ emissions for the utility system is less than the actual CO₂ emissions, those units undertaking the efficiency improvements should **not** be subject to NSR. (*EPA ANPRM Topic 3 or Section V(A)*).
- **Topic 5: Other issues: (Related to EPA ANPRM Section V(A)).**
- **Topics 1 and 5: Section 111(d) standards are “once and done” and cannot be made more stringent at a later date.** The Clean Air Act is clear that Section 111(d) for existing sources is a regulatory authority that should be exercised once for existing plants and that 111(b) is the appropriate standard to revisit as technology changes. EPA cannot revise Section 111(d) units to make them more stringent

The Clean Air Act sets out a very clear division between Section 111(b) new units and Section 111(d) existing units. Congress directed EPA to revise new unit standards every eight years to assure adoption of new, improved technologies. In contrast, Section 111(d) contains no language addressing updating of those standards and does not even provide the Agency with discretionary authority by stating that the Agency “may” consider updating those standards.

¹⁴ Emission increases due to increased operation of an EGU that is not caused by non-routine change to the unit is not subject to NSR.

EPA, for the first time, suggested that existing unit standards could be revised to require further emissions reductions in proposed revisions to “Emissions Guidelines and Compliance Times for Municipal Solid Waste Landfills”, 80 Fed. Reg. 52,100, August 27, 2015, Docket ID No. EPA-HQ-OAR-2014-0451. In the CPP preamble, EPA suggests that it can continually re-visit the standard in the future to obtain lower state emissions rates and tougher standards. Nothing in the statute authorizes EPA to revisit Section 111(d) standards to make them more stringent, as EPA did in the Landfill rule, which is now being challenged in the courts. Section 111(d) standards are “once done” and until the landfill rule, that is how EPA has interpreted the statute.

The Supreme Court has ruled in the past that EPA is a “creature of the statute” and is limited to promulgating standards based solely on authorities conferred by the statutes that govern the Agency.¹⁵ EPA needs to state clearly in a CPP replacement rule that it is restating and re-enforcing the traditional and correct interpretation of Section 111(d), that it is a standard not subject to multiple revisions that make it more stringent. For a fuller legal analysis, we refer you to the comment letter sent by the Utility Air Regulatory Group (UARG) to former EPA Administrator Gina McCarthy on October 26, 2015 addressing the Municipal Solid Waste Landfill proposed rule.

- **EPA’s Regulatory Impact Analysis (RIA) Must Be Conducted Correctly:** FMEA supports EPA’s increased transparency in the RIA for the CPP repeal rule and urges additional transparency in the RIA for the CPP replacement rule. EPA should not count as co-benefits PM2.5 below the NAAQS and should take into consideration speciation studies when setting PM2.5 limits.
- **FMEA believes that the CPP replacement rule should monetize benefit differences with Speciated NAAQS.** See FMEA Comments Appendix 4 for more details.

Conclusion

1. EPA should replace the flawed CPP final rule with a promulgated rule that will withstand judicial review. Florida utilities want greater certainty through a reasonable regulatory approach under Section 111(d) rather than under Section 112 or other parts of the Clean Air Act.
2. EPA’s rule should address CO₂ reductions through standards set by state agencies on a unit-by-unit basis. All determinations should be made by states on a case- by-case basis.
3. There is no basis or foundation in the CAA to make 111(d) binding. Indeed, it is contrary to the plain language of the statute that *requires* EPA to allow the states to “take into consideration, among other factors, the remaining useful life of the existing source....” CAA § 111(d)(1). EPA should rescind this part of its implementing regulations.
4. EPA needs to amend the underlying regulations that govern Section 111(d) to incorporate the language added to the statute by the 1977 CAA Amendments that requires EPA to modify the regulations to include in “other factors” considered “the remaining useful life of the existing source.”
5. Florida has many unique factors affecting existing generation resources that affect the determinations on remaining useful life of plant including increasing population, EIA’s predicted increased electricity usage over next ten years,¹⁶ weather, reliability, geology,

¹⁵ *Michigan v EPA*, 268 F.3d 1075, 1081 (D.C. Cir. 2001) (quoting *Bowen v. Georgetown Univ. Hosp.*, 488 U.S. 204, 208 (1988)).

¹⁶ <https://www.eia.gov/state/?sid=FL>

and geography. These factors dramatically reinforce why 111(d) standards should be implemented by the states to allow state agencies to make practical decisions taking all of these factors into account.

6. BSER should reflect practical and demonstrated technology, taking into account non-air environmental issues, cost and energy issues¹⁷ including whether it is feasible, affordable or legal to use the technology in the vast majority of state jurisdictions. CCS/CCUS is entirely impractical as a suite of technologies that might be called BSER because CCS/CCUS is not feasible and would not likely even be legal under state commercial, property rights laws, product liability laws, and drinking water laws. FMEA does not oppose CCS/CCUS if used voluntarily by utilities adjacent to oil/gas operations to reduce CO₂ but CCS/CCUS does not meet the conventional definition of BSER.
7. EPA must follow correct timing for Section 111(b) and Section 111(d) rulemakings. Section 111(b) should reflect a supercritical coal-fired power plant standard. Section 111(d) rule cannot be promulgated until or coincidental with the timing of the promulgation of a rule under Section 111(b).
8. The Regulatory Impact Analysis must be conducted correctly and not repeat the serious errors in the 2014 rule.

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¹⁷Six papers from third party experts <http://theresapughconsulting.com/more/>

Appendix 1

FMEA's Recommendations for Regulatory Impact Analysis (RIA) for CPP Replacement Rule Process

In the CPP repeal rule EPA has made monetized estimates of positive health benefits when reducing PM_{2.5} ambient concentrations for 3 scenarios in the RIA for the CPP Repeal Rule: reducing ambient PM_{2.5} concentrations to 0; reducing ambient PM_{2.5} concentrations to the range of past health studies; and reducing PM_{2.5} to the current NAAQS. Monetized benefit differences in the 3 scenarios are significant and do add to the transparency for calculating monetizing benefits. However, over the last 15 to 20 years health studies in the United States and Europe as well as Asia have repeatedly shown that all PM_{2.5} particles do not have the same health impacts on people. These studies all reach the conclusion that certain species of PM_{2.5} cause the majority of the health impacts on people. This fact was well enough established that on February 7, 2005, the EPA Office of Inspector General issued an evaluation report that noted:

*Current NAAQS for PM are supported by findings from epidemiological studies that have demonstrated associations between ambient PM mass measurements and observed health impacts. As a result, the current PM NAAQS uses particle mass as the indicator for the standard. However, there are questions about the relative toxicity of various PM species and PM from various sources, as well as whether a NAAQS that is based on a metric other than mass is needed.*¹

EPA's response to the Inspector General's report made by Jeff Holmstead, former Assistant Administrator for Air and Radiation Program, indicates that EPA understood the importance of speciation in addressing risk from PM.

*"We can identify the major sources (power plants, cars, etc.) and address a big part of the PM problem, but once again the question is, are they the right sources to reduce the risk from PM? This leads to the need for speciation data to improve our understanding of the relative toxicity (and resulting risk) from various PM sources."*²

In their 2004 "Research Priorities for Airborne Particulate Matter" the National Research Council noted:

The current NAAQS for PM is both size and mass and implicitly assumes that all particles of a given size have the same toxicity per unit mass, irrespective of chemical composition. In the committee's judgment, this mass-based NAAQS greatly oversimplifies complex biological phenomena.....A better understanding of the characteristics that modulate toxicity could lead to targeted control strategies specially addressing those sources having the significant adverse effects on public health"

*"Research to date has provided some new insights concerning particle characteristics and toxicity. For example, as discussed in Chapter 3, there are studies suggesting that health impacts of sulfate per se may not be proportional to their contribution to PM mass. From the regulatory point of view, that is an important finding, because ammonium sulfate represents a significant fraction of PM, especially in the eastern United States, where it is the dominant component of secondary PM_{2.5} and is largely attributed to a small range of source types (for example coal combustion)."*³

There is serious concern that the current form of the PM_{2.5} NAAQS without incorporating the relative toxicity of the various species will continue a PM_{2.5} standard that may not provide the

¹ EPA Office of Inspector General, Evaluation Report No. 2005 P> 0004, Feb. 7, 2005.

² Ibid

³ National Research Council. Research priorities for airborne particulate matter: IV: Continuing research progress, 2004, Washington, DC: National Academy Press.

advertised health improvements. **Several peer reviewed published papers in “Inhalation Toxicology” confirm that as little as 2% (primarily "heavy" metal sulfates) of ambient PM_{2.5} in the Northeast is responsible for the majority of measured health impacts while 65% (secondary inorganic sulfates) had minimal health impact.**^{4 5}

A review of the available studies on health effects impacts of PM_{2.5} by Cassee in 2013 as well as the 2015 review of the evidence on health aspects of air pollution – REVIHAAP by the World Health Organization Regional Office for Europe confirms findings of previous health effects study of those earlier studies referenced above.^{6 7}

It is also noted that in addition to a PM_{2.5} mass standard, the European Union also has standards and target values for specific species of PM_{2.5} including: toxic metals such as arsenic, cadmium, nickel, and lead; benzene and benzo(a)pyrene (BaP) as a marker for total exposure of (polycyclic aromatic hydrocarbons) PAHs. It should be noted that the European Union has a reference level for BaP of 0.12 ng/m³.⁸ With very low concentrations of certain species of PM_{2.5} causing the vast majority of health impacts, a PM_{2.5} Mass NAAQS alone cannot assure the public health and welfare.

EPA’s continued assumption that the health-based benefits of the PM_{2.5} NAAQS is a direct function of PM_{2.5} mass ambient air levels regardless of chemical composition may provide significantly erroneous estimates of monetized health benefits. As noted in the referenced peer reviewed studies above, a relatively small fraction of certain PM_{2.5} species can account for the preponderance of human health effects including exposure related human mortality. However, EPA assumes that PM_{2.5} mass concentrations are directly responsible for premature human deaths without regard to PM_{2.5} composition. **Since EPA attributes over 90% of its monetized health benefits to the reduction of premature deaths from a lowering of PM_{2.5} mass, great uncertainty exists with EPA’s projected monetized health benefits.**

It is recommended that EPA initiate a causality determination as part of an Integrated Science Assessment for the major constituents of PM_{2.5} that have been identified by EPA’s speciated PM_{2.5} monitoring network. Special emphasis should be given to constituents that have been identified as having high toxicity potential. While creating a speciated PM_{2.5} NAAQS will be more complicated than the current PM_{2.5} mass NAAQS, the public cannot be confident in the protection of their health and welfare without a speciated PM_{2.5} NAAQS. Monetizing Premature Deaths Avoided (PDA)

EPA has stated that well over 90% of the benefits of the CPP of 2015 were directly attributed to PDAs from lowering PM_{2.5} ambient levels. To increase transparency EPA should explain its calculation of a \$9.8 million value for a PDA that calculates the Value of Statistical Life (VSL) by using a Willingness to Pay (WTP) methodology. In addition, those values should be compared to other methodologies for evaluating a PDA such as the Human Life Value (HLV) method which produces a significantly lower value for a PDA.⁹ EPA should also calculate its PDA based

⁴ Maciejczyk, P., and Chen, L.C. 2005 Effects of Subchronic Exposures to Concentrated Ambient Particles (CAPs) in Mice: VIII. Source-Related Daily Variations in In Vitro Responses to CAPs. *Inhalation Toxicology*, 17:243-253.

⁵ Lippmann M., Gordon T., and Chen, L.C. 2005 Effects of Subchronic Exposures to Concentrated Ambient Particles in Mice: IX. Integral Assessment and Human Health Implications of sub chronic Exposures of Mice to CAPs. *Inhalation Toxicology*, 17: 255-261.

⁶ Particulate Matter beyond Mass: Recent Health Evidence on the Role of Fractions, Chemical Constituents and Sources of Emission, Cassee, Héroux, Gerlofs-Nijland, and Kelly; *Inhal Toxicol*, 2013; 25(14): 802–812.

⁷ Review of Evidence on Health Aspects of Air Pollution – REVIHAAP, World Health Organization 2013.

⁸ Air Quality in Europe – 2015 Report EEA Report #5 – 2015, Europe Environmental Agency.

⁹ For example, HVL methodology would value a forty-year extension of life for a person earning \$53,000 a year (Average USA annual income) at \$1,700,000. [Http://www.insuranceqna.com/calculators/human-life-value.html](http://www.insuranceqna.com/calculators/human-life-value.html)

on the actual time that a premature death is avoided. Previously the EPA inspector general recommended that EPA employ the Value of a Statistical Life year (VSLY) to better reflect the actual monetized value that would accrue with the reduction of ambient PM_{2.5} levels. It is noted that while the European Environmental Agency (EEA) estimates the premature deaths due to ambient air pollution concentrations, they adjust the quantification of the monetized value of premature deaths by quantifying the years of life lost (YLL) due to premature death.¹⁰ Utilizing either a VSL or VLL adjustment to EPA's monetized value of PDA would give the public a more accurate and realistic value of monetized air pollution reduction benefits of its regulations. The EAA estimates the YLL for fine particulate, ozone and nitrogen dioxide for all countries in the European Union and relates it to the annual mean concentration of each pollutant.¹¹

Social Cost of Carbon (SCC)

As mentioned earlier in our comments, we support EPA's use of a domestic SCC for monetizing the benefits of the CPP. However, we believe additional transparency is required to fully inform the public as to the assumptions used in developing a monetized value of the SCC. Specifically, the value of the SCC is dependent on climate models utilizing certain assumptions related to equilibrium climate sensitivity (ECS).¹² In its latest Assessment Review (AR – 5) the United Nations International Panel on Climate Change (UNIPCC) estimated a range for ECS from 1.5°C to 4.5°C¹³. It is noted that this range of ECSs encompasses slightly above the natural rate of climate change with minor anthropogenic climate impacts to very significant anthropogenic climate impacts. EPA should develop a range of SCC values based on the IPCC range of ECSs (1.5°C to 4.5°C) along with their best estimate.

We believe that these three areas of increased transparency in the RIA process will allow utilities and regulators to more confidently inform our customers of the environmental benefits that will accrue from new environmental requirements and related increased electricity costs to those customers.

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¹⁰ The EEA defines the YLL as the years of potential life loss owing to premature death. It is the estimate of average years that a person would live if she or he had not died prematurely. The Y LL takes into account the age at which death occurs, giving greater weight to the death at a younger age in the lower weight to deaths at an older age it gives therefore a more nuanced information than the number of premature deaths alone.

¹¹ Ibid 19

¹² The Equilibrium Climate Sensitivity (ECS) is an estimate of the impact on global temperature with a doubling of ambient CO₂ concentrations by the year 2100. The greater the ECS, the greater the climate impact.

¹³ As estimated by the IPCC Fifth Assessment Report (AR5) "there is *high confidence* that ECS is *extremely unlikely* less than 1°C and *medium confidence* that the ECS is *likely* between 1.5°C and 4.5°C and *very unlikely* greater than 6°C." This is a change from the IPCC Fourth Assessment Report (AR4), which said it was *likely to be in the range 2 to 4.5 °C with a best estimate of about 3 °C, and is very unlikely to be less than 1.5 °C. Values substantially higher than 4.5 °C cannot be excluded, but agreement of models with observations is not as good for those values.* IPCC details can be found at <https://www.ipcc.ch/report/ar5/> and <https://www.ipcc.ch/report/ar4/>

Appendix 2

FLORIDA'S UNIQUE ELECTRIC RELIABILITY VULNERABILITIES SHOW IMPORTANCE OF STATE FLEXIBILITY IN MAKING REMAINING USEFUL LIFE OF PLANT DETERMINATIONS

FMEA POINTS TO ELECTRIC RELIABILITY CONCERNS DOCUMENTED BY NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION (NERC'S) NOVEMBER 2017 RELIABILITY ASSESSMENT

In November, 2017, NERC issued a report¹ addressing natural gas reliability given existing natural gas infrastructure. The report pointed to several concerns about Florida that are relevant to the Section 111(d) and (b) rulemakings. FMEA believes that U. S. EPA should give flexibility to state agencies when legitimate reliability factors are used in remaining useful life of plant assertions.

Some of the key findings by North American Electric Reliability Corporation (NERC) that are useful for contemplating factors for “remaining useful life of plant” are:

- ❖ During the planning process, system planners should work with (air) regulators to incorporate expeditious consideration of air permit waivers, which may be needed for resilience purposes; dual fuel, back-up pipeline capacity, and/or alternative sources of supply should be required in areas with significant risk. (Page 9)
- ❖ Natural gas facility disruptions can have varying impacts depending on geographical location and overall infrastructure dynamics (See NERC report page 8, Section vii).
- ❖ NERC's power flow simulation demonstrates that 18 of 24 groups of gas-dependent generators studied experience transmission challenges during extreme event (including weather). (See NERC report, page 8, Section vii).
- ❖ NERC's report points out that Florida (along with California and Texas) already relies upon natural gas to meet electric generation requirements of over 60% of their on-peak demand. By 2021 FRCC estimates it will be almost 70%. (See NERC report page 13).
- ❖ NERC report states that Florida relies heavily on natural gas generation, it has no market area storage, and relies on out-of-area-supply to meet demand requirements and out-of-area storage facilities to mitigate supply disruptions or extreme peak conditions.
- ❖ Perhaps most significantly NERC points out that Florida has 68 power generators with only one connection and 7 major supply “trunk” lines to natural gas totaling 31 MW.

These factors should be considered by both EPA, and Florida officials when the states are allowed flexibility determining “remaining useful life of a plant”.

¹ Special Reliability Assessment: Potential Bulk Power System Impacts Due to Severe Disruptions on the Natural Gas System issued Nov. 14, 2016 See http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_SPOD_11142017_Final.pdf

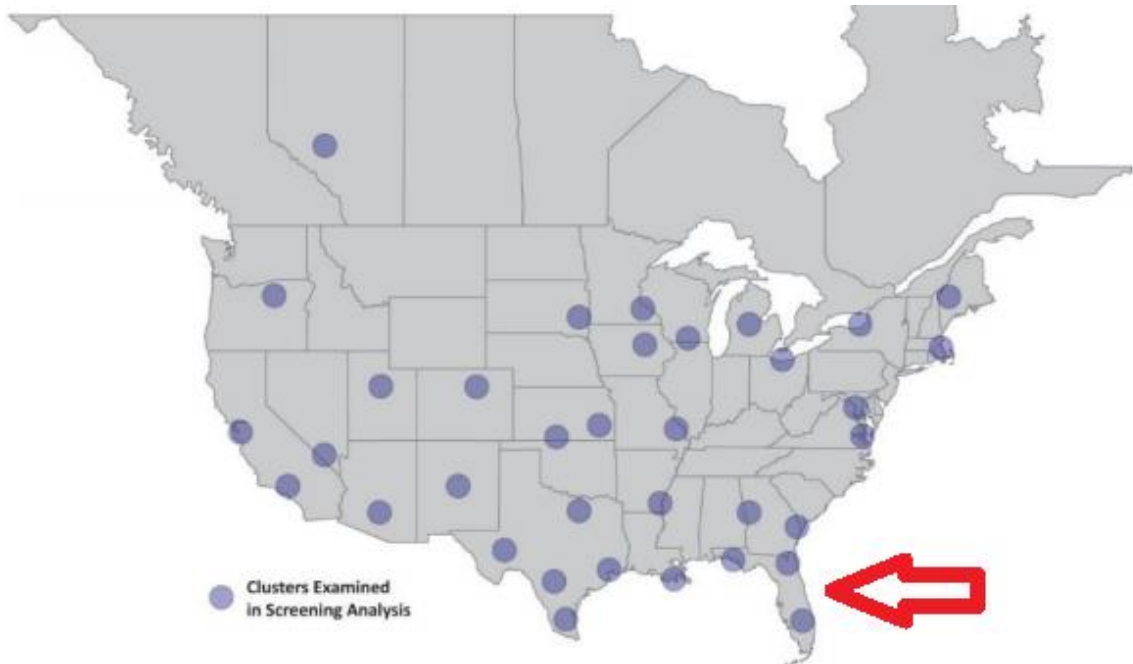


Figure 1 - Florida contains three of the nation's 24 possible natural gas supply disruption vulnerability points and is surrounded by three other vulnerability points based upon current infrastructure and supply. Coupled with frequency of tropical storms and hurricanes these provide significant justification for 111(d) regulations to consider in "remaining useful life of the plant" assertions.

Source: NERC report Table 1.3: Natural Gas Supply Characteristics by Area, page 7.

NERC identifies that three of the 18 areas (out of a total of 24) across the U. S. that might find voltage and stability issues where >2 GW of natural gas fired generation might be disrupted are in Florida. Further, the map indicates that Florida is surrounded by two vulnerable areas in Georgia and Mississippi and natural gas and compressor stations from one or more of these states would serve Florida's power sector as gas in storage must be moved from out of state into Florida. Florida has no subsurface geological storage opportunities for natural gas storage due to karst geology. While above ground storage could be built for natural gas in LNG terminals, these terminals do not yet exist in Florida. Some dual fuel (oil-fired) generation does exist in Florida. But rarely do dual fuel power plants allowed to use oil as dual fuel substitute have more than 3 days of natural gas available. An informal survey of FMEA's generating members indicates that to use oil-fired dual fuel units, an emergency designation must be made by a Governor or President in order to obtain permission to run the dual fuel oil-fired unit if there is a natural gas shortage. One FMEA member offered that following a declared hurricane event the utility did not get permission to run the oil-fired unit for almost 21 days. Even if power plants in Florida obtain permits for dual fuel, those units cannot run for more than approximately 10% of the year and are not allowed during ozone season (May-Sept).

These natural gas infrastructure, force majeure events, shortage of new natural gas infrastructure to meet all new generation needs and storm frequency concerns force the power sector in Florida to consider many factors that are not as common in other states.

Florida's Sabal Trail pipeline and associated natural gas pipeline projects



FIGURE 2 Sabal Trail Pipeline Expected to Serve Florida Power & Light Natural Gas Power Plants but Facing Delays in Construction Due to Legal Objections

According to U. S. Department of Energy's Energy Information Agency (EIA), much of the additional natural gas expected to flow into Florida will be transported to its power plants since there is not a significant demand for manufacturers or industrials. Since the beginning of 2016, Florida has added 3.4 gigawatts (GW) of natural gas-fired electricity generating capacity, which is more than any other state. Another 3.9 GW of natural gas-fired capacity is planned to come online in Florida over the next six years, based on data reported to EIA by project developers.

Increases in Florida's natural gas capacity have come as older coal- and oil-fired capacity have been retired. Unlike many other states, Florida is not located near a major source of natural gas production, and Florida's geology (primarily karst geology) is not conducive to underground natural gas storage. As a result, the natural gas needed to meet increasing demand is transported by gas pipeline.

Sabal Trail Phase I is a gas transmission pipeline designed to have a total capacity of 810 million cubic feet per day (MMcf/d) and began partial service on June 14, 2017 with only two of three needed Phase I compressor stations² operating. The next two phases will increase Sabal Trail's total capacity to 1,050 MMcf/d. Phase II, when completed in 2020, adding 170 MMcf/d of capacity with the addition of two new compressor stations. Phase III, scheduled for 2021, will add 70 MMcf/d of capacity through expansions to existing compressor stations.

² Compressor stations boost the natural gas along the pipeline and are placed approximately every 80 miles.

Two other projects associated with the Southeast Market Pipelines are Transco's Hillabee Expansion Project and NextEra's Florida Southeast Connection. Phase I of the Hillabee Expansion added 800 MMcf/d of capacity to the Transco line in Alabama to provide natural gas to Sabal Trail. Phases II and III of the Hillabee Expansion Project will add 200 MMcf/d and 100 MMcf/d of capacity, respectively, in 2020 and 2021.

Sabal Trail, while currently delayed, is fully subscribed by Florida Power & Light. FMEA is not critical of Sabal Trail but merely making it clear to EPA that the current pipeline expansion project(s) are for FP&L's natural gas usage for new NGCC plants. Any additional natural gas demand by new power plants or other parties would require additional pipelines and compressor stations to be approved by FERC and state agencies. Given the delays on Sabal Trail due to opposition in courts and before FERC, the Sabal Trail does not appear to be able to deliver natural gas on time.

Unfortunately, litigation-related delays in the Sabal Pipeline project coupled with North American Electric Reliability Corporation (NERC)'s reliability concerns, point to why infrastructure readiness matters when Florida state agency determinations are made on remaining useful life of a plant.

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Appendix 3

Carbon Capture and Geologic Sequestration Background Information for BSER for New Sources Under Section 111(b) or for States Reviewing Alternatives to Energy Efficiency at the Unit

While there are 43 oil/gas production wells in Florida's panhandle, the state does not have the type of commercial laws needed to address who owns the pore space within the subsurface. Most of the gas produced in Florida is "associated gas" produced from 43 older oil wells where natural gas production is a "free rider" since that gas often emerges with the oil production. Less than 1% of the natural gas used by electric generators is produced in Florida. Thus, there is no likely prospect for oil and gas production infrastructure to be built in Florida to support CCS/CCUS associated with oil and gas production such as in Texas. Without the 'subsidy' of other oil/gas demands for CO₂ and availability of special high-pressure CO₂ pipelines (different from natural gas transmission or oil or natural gas liquids transmission pipelines), the economics of CCS would be impossible to justify before a public power governing board or group of ratepayers.

State trespass laws forbid injection of any substance, including CO₂ as an acid gas, under the property of owners without contracts recognizing pore space. Many state laws have no systems for subsurface ownership for mineral rights or pore space. Florida has mineral rights only where the state has special zoning for oil and gas production. If mineral rights exist, they are superior and separate from land owner rights in Florida.¹ In those limited locations CCS/CCUS might be legally possible. But it is very unlikely that the land adjacent to FMEA's power plants and adjacent land owned by the city would be zoned to allow CCS/CCUS. Without clarification in the law, CCS/CCUS is unrealistic in many states that do not have mining or oil/gas commercial laws. Additionally, some products liability laws preclude injection of an acid gas into subsurface in many states².

These practical operational and economic factors are joined by regulatory conflicts under Resource Conservation and Recovery Act (RCRA), state groundwater protection laws, and SARA (Superfund law that makes acid gas leaks into the soil illegal. Additionally, it would be highly unlikely that the Florida environmental agencies would approve of a permit application for a subsurface geologic storage for CO₂ due to the proximity to the long, amoeba-shaped Volusia Sole Source Aquifer³ and the Biscayne Sole Source Aquifer and its very important recharge zone near Lake Okeechobee. Further, it appears to be a disputed legal matter whether groundwater is regulated under the Clean Water Act. If it is determined to be the case, an acid gas or related injection substances were found in groundwater, this might be a violation of the Clean Water Act.

Links to six CCS/CCUS papers documenting the limitations on geologic sequestration for both existing and new power plants in most states <http://theresapughconsulting.com/more/> These papers were submitted to EPA during the 2014 rulemaking dockets for Section 111(b) and Section 111(d), SBA-EPA Small Entity Representative Roundtable, and during the EPA Listening Sessions.

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¹ Barnes Walker ,Goethe, Hoonhout, Perron and Shea PLLC Law Firm,

<http://barneswalker.com/oil-gas-and-mineral-rights-in-florida-a-guide-for-realtors/>

² Link to six papers on limitations to geologic sequestration for most U. S. states at <http://theresapughconsulting.com/more/>

³ U. S. EPA defines sole source aquifer where >25% of the population depend entirely upon the drinking water from that location.

Appendix 4

Biomass should be Designated as CO₂ Neutral in the CPP Replacement Rule but Renewable Generation Options should not be used to set the Standard

By allowing slash biomass as a compliance option EPA would provide states with greater flexibility to select the most cost-effective emission reductions that also help ensure electric reliability. In many cases, biomass generation is a relatively low-cost option because the feedstocks would otherwise be disregarded as waste. For example, Gainesville Regional Energy Center (GREC) uses wood wastes known as slash from the forest industry that would otherwise be left to rot in the field generating methane emissions, or burned inefficiently on site. Biomass generation also promotes electric reliability because, unlike wind and solar generation, biomass generation is not intermittent and therefore biomass can play a critical role in providing base load generation as well as electric reliability.

Florida ranks with several other states with the lowest onshore wind potential.^[1] Since geothermal and hydropower are also not available options for Florida, the state must rely upon natural gas, coal, or the costlier option, solar generation. However, Florida has greater biomass renewable energy potential than many other states.^[2] States like Florida without wind generating potential need to be provided with a cost-effective renewable energy technology that provides both zero emission and base-load generation.

To facilitate biomass generation and add to the flexibility of the CPP EPA should assign default biogenic accounting factors (BAFs) to define categories of biomass fuels that are clearly carbon neutral rather than requiring a facility specific analysis for each biomass generation project. This would apply to the class of biomass fuel streams that are derived from waste products such as forest slash and other forestry waste that would normally be allowed to rot in the forest or be burned in place creating equal CO₂ emissions and greater amounts of traditional pollutants when compared to powering electric generating units.

EPA does not have to make all decisions about biomass, including those pending before the Science Advisory Board, in order to determine that slash biomass is carbon neutral and can be used as a compliance mechanism with the replacement rule.

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