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August 8, 2014

Kathryn Cowdery
Office of General Counsel
Florida Public Service Commission
2540 Shumard Oak Blvd
Tallahassee, Florida 32399

Re: Comments on the EPA's Clean Power Plan

Dear Ms. Cowdery:

Southern Alliance for Clean Energy ("SACE") offers these comments and recommendations in response to the Office of General Counsel's Memorandum dated July 10, 2014. In the Memorandum, your office solicited comments on two recently proposed U.S. Environmental Protection Agency ("EPA") actions: the Clean Power Plan and the proposed rule on Carbon Pollution Emission Standards for Modified and Reconstructed Stationary Sources: Electric Utility Generating Units. The Office of General Counsel identified five questions to guide comments, and also encouraged responders to use this opportunity to comment on other aspects of the Clean Power Plan.

SACE would like to thank the Florida Public Service Commission for the opportunity and will focus on providing comments on the EPA's Clean Power Plan. The Clean Power Plan is a multi-faceted approach to reduce carbon pollution. SACE supports the Clean Power Plan as it will protect public health, address carbon pollution that is fueling climate change and move us towards lower cost, lower risk and cleaner energy sources that will grow Florida's economy and create jobs.

SACE makes several recommendations regarding the Clean Power Plan: (1) investigate legal arguments regarding EPA's statutory authority to regulate carbon dioxide ("CO_2") emissions; (2) use, at minimum, the EPA's proposed energy efficiency goals, and potentially more energy efficiency for compliance with Florida's emission reduction goals; (3) reconcile any differences in Florida's current practice of energy efficiency evaluation, measurement and verification and those articulated in the Clean Power Plan; (4) prioritize investment in energy options that are less vulnerable to the effects of climate change versus those that have already demonstrated a lack of resiliency; (5) landfill gas, anaerobic digestion, and biomass combined heat and power should be viewed as assets during considerations of the Clean Power Plan; (6) Florida should plan to obtain 1,500 megawatts of wind energy by 2020; (7) and Florida should have at least 10,000 MW-ac of installed photovoltaic ("PV") capacity by 2030.

Question 1. Please provide comments you have on legal aspects of the Clean Power Plan or proposed standards of performance for Modified and Reconstructed Sources that you believe are important for the Commission to review.

The EPA has authority to regulate CO_2 emissions from existing electric generating units ("EGUs") pursuant to the Clean Air Act ("CAA") §111(d). CAA §111(d) gives EPA the authority to create a state-based regulatory program that sets CO_2 emissions standards for existing sources.[1] The EPA establishes emission guidelines under §111(d) and the states design programs that fit their own unique state needs and achieve the needed emission reductions. Despite EPA's clear authority to regulate CO_2 emissions, some have questioned EPA's ability to move forward with regulation under the Clean Power Plan. Below, we explain these issues and reiterate EPA's accurate explanation of why its proposed rule stands up to legal scrutiny.

One section of §111(d), specifically §111(d)(1)(A), creates an exclusion from §111(d) regulation for those sources already regulated under §112.[2] This scope of this exclusion, however, has been muddled as a result of some confusion surrounding amendments to the CAA. Apparent drafting errors associated with the 1990 CAA Amendments to §111(d) are at the root of this confusion..[3] Specifically, two different and apparently conflicting versions of the §111(d) amendments were simultaneously enacted, one passed by the U.S. House of Representatives and one passed by the U.S. Senate. There is another nuance compounding the issue. The U.S. Code inaccurately contains only one version of the pertinent amendment, while the correctly recorded law containing both versions of the amendment as enacted by Congress and signed by the President (and is therefore controlling) can be found in the U.S. Statutes at Large.[4] The difference between the two conflicting versions, and therefore the source of the ambiguity, can be found in the §112 exclusion language contained within CAA §111(d)(1)(A). The Senate version of the amendment seems to narrow the scope of the §112 exclusion far more than the House version.[5] Those opposing the Clean Power Plan rely on the House version as the "correct" version and claim that because the EPA has previously regulated emissions of hazardous pollutants from EGUs as a "source category" under §112, EPA is now barred from regulating emissions from EGUs under §111(d).

To give full effect to the House version, however, would be illogical. A literal reading of the language in the House version would by extension mean EPA could *never* regulate any air pollutant from a source category regulated under §112. Such a restrictive result would be inconsistent with both the Congressional intent of the 1990 CAA Amendments to allow the

[1] 42 U.S. Code §7411, found at http://www.law.cornell.edu/uscode/text/42/7411

[2] CAA §111(d)(1)(A) allows for EPA to prescribe regulations which "(A) establishes standards of performance for any existing source for any air pollutant (i) for *which air quality criteria have not been issued* or which is not included on a list published under section 7408 (a) of this title or emitted from a source category which is regulated under section 7412 [§112] of this title but (ii) to which a standard of performance under this section would apply if such existing source were a new source…" (emphasis added).

[3] Environmental Protection Agency, Legal Memorandum for Proposed Carbon Pollution Emissions Guidelines for Existing Electric Utility Generation Units, available at http://www2.epa.gov/sites/production/files/2014-06/documents/20140602-legal-memorandum.pdf (hereinafter referred to as "EPA Legal Memo")

[4] Evidently the House-Senate Conference Committee did not reconcile these two conflicting amendments, and both were included in the 1990 CAA Amendments as reported by the Conference Committee and approved by Congress. The §112 exclusion contained within §111(d)(1)(A)(i) prior to the 1990 Amendments mandates state plans for "any existing source for any air pollutant (i) for which air quality criteria have not been issued or which is not included on a list published under § 7408(a) *or 7412(b)(1)(A) of this title* . . . (textual source of exclusion in italics).

[5] EPA Legal Memo at 23-27.

ability to regulate additional air pollutants. Additionally, such a literal reading would go against EPA's own historical precedent for regulating non-hazardous air pollutants under §111(d), even when those air pollutants are emitted from a source category regulated under §112.

EPA maintains that its regulation of mercury and other hazardous air pollutants emissions from EGUs under §112 does not deprive it of the authority to regulate CO_2 under CAA §111(d), as the §112 exclusion does not apply to greenhouse gases (GHGs). EPA correctly relies upon its previous interpretation of the §112 exclusion that "reasonably" attempts to "give some effect to both [the Senate and House] amendments."[6] Specifically, EPA articulated the §112 exclusion as follows:

> Where a source category is regulated under §112, a §111(d) standard of performance cannot be established to address *any HAP [hazardous air pollutant]* listed under § 112(b) that may be emitted from that particular source category.[7]

Since GHGs are not a HAP regulated under §112, it is clear that GHGs do not fall under the §112 exclusion, regardless of the fact that EGUs are a source category regulated under §112.

Additionally, EPA's ability to allow "outside the fence" metrics into consideration when establishing its best system of emission reduction ("BSER") is fully supported by law. Under EPA's implementing regulations for CAA §111(d)(1), the agency must determine the best adequately demonstrated system of emission reduction for CO_2 emissions, then apply that system to determine the "emission guidelines" for each state, which the states must then incorporate into states plans that establish "standards of performance" for the affected sources. Accordingly, EPA has proposed two approaches to BSER in this rulemaking. The agency's "preferred approach" for BSER is a combination of measures that fall into four "building blocks": 1) plant efficiency improvements, 2) redispatch, 3) renewable energy generation, and 4) demand-side energy efficiency. States need not abide by the assumptions in EPA's calculation formula and would have the opportunity to achieve more or less reductions from each of the building blocks, so long as the state ultimately achieves the required CO_2 reductions at affected EGUs.

However, some stakeholders have asserted that BSER is legally limited under CAA §111(d) to "building block" 1, or measures that can be undertaken directly at the affected EGU ("inside the fence" or "at-the-unit" measures, such as technology upgrades), and therefore disagree that BSER may constitute "building blocks" 2 through 4 ("outside the fence" or "beyond-the-unit" measures). In short, some in the industry appear to be already taking the position that the EPA can only set standards for individual plants that emit carbon, nothing more. Further, some stakeholders have argued that the performance standards set by the states must reflect what is achievable at each existing unit under §111(d)(1). EPA acknowledges the questions these stakeholders have raised regarding its authority to include "beyond-the-unit" measures in the BSER, and in addition to the bases it provides for such an approach discussed below, specifically seeks comment on whether measures and standards of performance "must apply directly to the

[6] EPA Legal Memo at 26.
[7] *Id*. (emphasis added).

affected sources and only to the affected sources . . . or . . . may apply to other entities whose actions would reduce generation, and thus emissions, from the affected sources."[8]

There is a long history of cooperative federalism in the regulatory arena and in the implementation provisions of the CAA. Additionally, the integrated nature of the electric power grid gives has given rise to somewhat unique regulatory considerations. In keeping with these traditions justifiably diverges from a traditional emission rate standard in reaching its preferred formulation of BSER. Throughout its BSER proposal, EPA cites the manner in which EGUs are currently operated and the interconnected nature of the grid as the impetus behind the breadth and flexibility of the proposed rule: "through the integrated grid, the measures reduce overall demand for, and therefore utilization of, higher emitting, fossil fuel-fired EGUs [and CO_2 emissions in turn]."[9] EPA refers to numerous both historical and more recent examples of cases where companies, states, and regional entities have taken advantage of the integrated nature of the electricity system when designing programs to allow the industry to meet pollution control objectives in a least-cost manner.[10] EPA further defends its decision to base BSER on *total* state-wide emission reduction, rather than reductions achieved at each individual affected source as advocated by some stakeholders, due to the unique characteristics of carbon pollution, in that carbon is a "global pollutant."[11]

EPA correctly invokes *Chevron* Step I and Step II to support its selection of BSER, specifically referring to the statutory terms "system of emission reduction" and "standard of performance." Under Chevron Step II, first the EPA explores the legislative history of the CAA's definition of "standard of performance," as supportive of the reasonableness of the agency's interpretation, to the extent Congress has never required a technological system for existing sources, as they once did for new sources.[12] EPA finds support for its proposed BSER approach from Title IV of the CAA, both from its provisions and from the legislative history, specifically Congress expressly requiring therein a <u>technological</u> system as the basis for emission limits (unlike §111(d)), and Congress' previous considering of measures for Title IV that are identical to the EPA's building blocks 2 through 4.[13]

EPA broad interpretation of "system of emission reduction" to include the "building blocks" is consistent with the primary purpose of the CAA, which is to air pollution prevention.[14] EPA appropriately relies on its own precedent of rules it promulgated with measures similar to the building blocks but in different regulatory contexts, and it refers to a variety of commentators in the private sector and academia who support a broad interpretation of "system of emission reduction."[15] Directly addressing concerns of the stakeholders insisting on "inside the fence" only measures that are under the "control of their owners or operators" (and therefore rejecting building blocks 2 through 4), EPA points out that the affected sources may themselves in theory

[8] EPA Legal Memo at 52.
[9] *Id*. at 50.
[10] *Id*. at 43-46.
[11] *Id*. at 47-48.
[12] *Id*. at 55.
[13] *Id*. at 59.
[14] *Id*. at 57.
[15] *Id*. at 63-64.

invest in or implement the measures included in blocks 2 through 4, "so that those measures are within their control."[16]

The EPA has authority to BSER on a state-wide basis. EPA invokes the principles of cooperative federalism, "that form part of the foundation of the Clean Air Act" to support its flexible proposed rule and specifically its application of the BSER to the affected EGUs on a *state-wide* basis.[17] Opponents of the proposed rule are likely to argue that the statutory term "standards of performance for any existing source," in the broader context of the Clean Air Act, implies that a state plan must require *each and every* affected EGU to reduce its emissions mass–or even its emission intensity. According to this misguided argument, averaging or trading programs do not guarantee emissions reductions from each and every participating unit, and therefore do not satisfy the statutory requirement.

EPA accordingly defends its interpretations of CAA §111(d) and (a)(1) in calculating the state goal performance levels, based on its statewide application of the BSER to each states' affected EGUs as a group, as reasonable under *Chevron* Step II. Such a state-wide approach, and the associated potential mechanisms of averaging or trading CO_2 emissions, the EPA reasons, "harnesses the efficiencies of emission reduction opportunities in the interconnected electricity system, and is fully consistent with the principles of federalism that underlie the Clean Air Act generally and CAA §111(d) specifically."[18]

For the reasons laid out above, we ask the Commission to consider these legal arguments and support EPA's ability to regulate CO_2 emissions from EGUs under CAA.

2. Please provide comments you have on technical aspects of the Clean Power Plan or proposed standards of performance for Modified and Reconstructed Sources that you believe are important for the Commission to review.

Energy Efficiency

The technical aspect of building block number four, demand side management, is straightforward in the Clean Power Plan. Here, SACE discusses two important technical aspects of the proposed rule: the level of energy efficiency impacts the EPA assumes Florida can achieve, and how the state will measure its progress toward the goal.

Annual incremental savings for Florida

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[16] In providing different examples of how EGUs may undertake the measures themselves, EPA refers to both states where the utilities are vertically integrated under the utility regulatory structure, and not only own the EGUs, but often own renewable energy resources and provide service directly to customers. Such operators are "well-positioned to undertake the measures in building blocks 3 and 4." Alternatively, for states with de-regulated electricity markets (EGUs sell to wholesale electricity market), EPA believes merchant EGUs could still "undertake or acquire those measures as well" since the "markets for acquiring renewable energy resources and for delivering demand-side energy efficiency services are sufficiently well-developed. . . [EGUs] can invest in NGCC capacity, invest in renewable capacity or purchase renewable energy or renewable energy certificates . . . as well as purchase demand-side energy efficiency services from energy service companies." EPA Legal Memo at 73; *Id*. at 77-78.

[17] *Id*. at 101.

[18] *Id*. at 96.

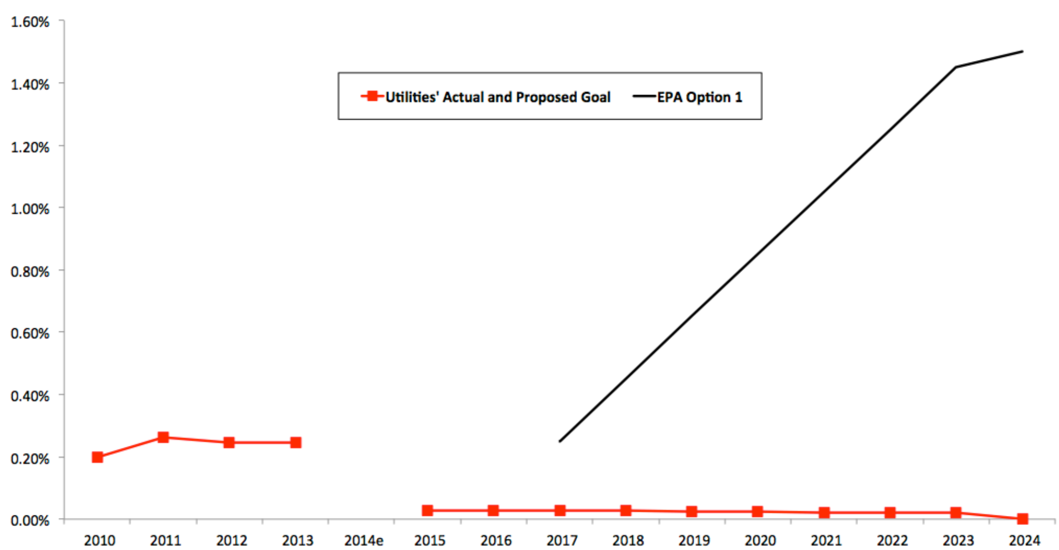
The EPA assumes that Florida can, ramping up from 2017, achieve energy efficiency impacts of 1.5% of prior year retail sales from 2024 -2030, as shown in Table 1, below.

Table 1. Florida Incremental Energy Efficiency Savings as a Percent of Prior Year Retail Sales, EPA Option 1.[19]

2017	2018	2019	2020	2021	2022	2023	2024	Annual 2025 to 2030
0.25%	0.45%	0.65%	1.05%	1.25%	1.45%	1.50%	1.50%	1.50%

This level of energy efficiency is higher than what the Florida utilities proposed in their recent energy efficiency goal setting applications.[20] Figure 1, below, shows the efficiency impacts of EPA's proposed rule and the FEECA utilities' proposed and actual efficiency impacts from 2015-2024, the FEECA planning period.

Figure 1. Annual Incremental Energy Efficiency Impacts



While the EPA's proposed rule requires more efficiency than what the Florida utilities are proposing in their FEECA goal applications, this level of energy efficiency is achievable.

There are many states, for instance, that are achieving energy efficiency impacts comparable to 1-1.5% of prior year sales. In 2011 Vermont achieved energy efficiency impacts equal to 2.12% of prior year retail sales, and 13 additional states achieved efficiency savings equal or greater

[19] US Environmental Protection Agency, (2014) Technical Source Document: GHG Abatement Measures, Data File: GHG Abatement Measures, Appendix 5-5.xlsx. Retrieved from http://www2.epa.gov/carbon-pollution-standards/clean-power-plan-proposed-rule-technical-documents

[20] See Florida Public Service Commission Docket Nos. 130199-EI, 130200-EI, 130201-EI, 130202-EI.

than 1% of prior year retail sales: Massachusetts, Arizona, California, Connecticut, Hawaii, New York, Rhode Island, Ohio, Minnesota, Maine, Iowa, Pennsylvania, and Michigan.[21]

Currently, as shown in Figure 1, the FEECA utilities collectively achieved 0.25% of sales in 2013. However, Gulf Power has shown itself as a leader in energy efficiency implementation in Florida. Table 2 provides the energy efficiency savings, as a percent of retail sales for all major Florida utilities in 2013. As shown, FPL lags behind Duke Florida, and TECO while Gulf Power achieved savings equal to 0.8% of prior year retail sales.

Table 2. Florida Utilities' 2013 Energy Efficiency Impacts as a Percent of 2012 Sales

Utility	Savings as Percent of Sales	GWh at the Meter
Gulf Power	0.80%	86
JEA	0.26%	30
TECO	0.23%	43
FPUC	0.21%	1
Duke Florida	0.21%	76
FPL	0.19%	193
OUC	0.15%	9

Evaluation, Measurement and Verification

Evaluation, Measurement and Verification, or EM&V, is also an important technical component of the proposed rule, particularly for Florida. As SACE highlighted in our recent testimony in the FEECA docket, Florida lacks transparent EM&V for its current energy efficiency programs.[22] Unlike North Carolina, South Carolina, Georgia and Tennessee, the utilities in Florida are not required, nor do they offer their EM&V reports to interested stakeholders. It is relatively easy to access EM&V reports in these other four states, and therefore, it is easy to determine how close these states are to the level of detail that will be required for compliance.

In the Technical Source Document State Plan Considerations document[23] the EPA articulates that,

> For rate-based state plans, a key element of the plan is a demonstration of how the state, and related entities with enforceable obligations under the plan, will measure and verify energy savings to be achieved through the implementation of end-use energy efficiency measures incorporated in the plan.

[21] Downs et al, American Council for an Energy Efficiency Economy. The 2013 State Energy Efficiency Scorecard. Research Report E13k, Available at: http://www.aceee.org/research-report/e13k

[22] Florida Public Service Commission, Docket Nos. 130199-EI, 130200-EI, 130201-EI, 130202-EI; Direct Testimony of Natalie Mims. Available at: http://www.floridapsc.com/library/FILINGS/14/02366-14/02366-14.pdf

[23] US Environmental Protection Agency, (2014) Technical Source Document: State Plan Considerations, page 36. Retrieved from http://www2.epa.gov/carbon-pollution-standards/clean-power-plan-proposed-rule-state-plan-considerations

The U.S. DOE Uniform Methods Project Protocols was discussed extensively in Witness Woolf's testimony in the FEECA docket,[24] and the EPA is likely to draw on it when creating EM&V guidance moving forward. The goal of the Uniform Methods Project (UMP) is to develop a framework and set of protocols for determining the energy savings from specific energy efficiency measures and programs.[25] The first protocols were developed in April 2013 and provide protocols for:

- Commercial and Industrial Lighting
- Commercial and Industrial Lighting Controls
- Small Commercial and Residential Unitary and Split System HVAC Cooling Equipment
- Residential Furnaces and Boilers
- Residential Lighting
- Refrigerator Recycling
- Whole Building Retrofit

The protocols provide a step-by-step process to determine the savings for the above listed energy efficiency measures. As Florida utilities are not required to file any EM&V with the Commission that is publicly available, SACE is not able to make this comparison. Most utilities conduct two types of EM&V on their energy efficiency and demand response programs: impact reports that measure the amount of energy or peak demand that is saved, and process reports that provide a qualitative assessment of the ability of the program to meet its goals. In Florida, here is little information on the impact evaluations, and these will be a critical component of energy efficiency as a compliance tool for the proposed rule, and this is the guidance that is provided in the UMP protocols. Further, it is clear from the use of the two-year payback as a proxy for free riders that the utilities are not conducting process evaluations on their energy efficiency programs.

In addition to the efficiency protocols, the EPA also discusses five technical considerations of EM&V: (1) qualifying demand side energy efficiency actions; (2) avoided T&D from energy efficiency measures; (3) reported energy savings values; (4) definitions of net and gross savings; and (5) measure life and persistence.[26] These five technical considerations provide additional guidance to states regarding the level of rigor that the EPA would like applied for energy efficiency EM&V and will prove useful as Florida crafts their implementation plan.

SACE urges the Commission and the Commission staff to explore these documents and evaluate the similarities and differences between the protocol and the EM&V performed in Florida today; and quickly reconcile any differences in Florida's current practice of energy efficiency evaluation, measurement and verification and those articulated in the Clean Power Plan.

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[24] Florida Public Service Commission Docket, Nos. 130199-EI, 130200-EI, 130201-EI, 130202-EI; Direct Testimony of Tim Woolf. Available at: http://www.floridapsc.com/library/FILINGS/14/02367-14/02367-14.pdf

[25] National Renewable Energy Lab. (2013). The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures. Retrieved from http://energy.gov/eere/downloads/uniform-methods-project-methods-determining-energy-efficiency-savings-specific

[26] US Environmental Protection Agency, (2014) Technical Source Document: State Plan Considerations, page 47. Retrieved from http://www2.epa.gov/carbon-pollution-standards/clean-power-plan-proposed-rule-state-plan-considerations

Renewable Energy
SACE is generally very supportive of EPA's Clean Power Plan. However, we do feel it tends to undersell the potential that renewable energy ("RE") can and should play in achieving emissions reductions. As such, the following response highlights for the Commission some important considerations regarding the technical approaches used by EPA for proposing RE targets. In general, EPA's methodologies are extremely conservative and potentially undermine the role RE can and should play in reducing emissions from the electric generating sector.

Although EPA makes clear that each state should develop emissions reduction strategies utilizing their respective resource strengths, they also offer two primary proposals with regards to setting targets for RE development: first, a regional "best practice" scenario, also referred to as the Proposed RE Approach; and second, the Alternative RE Approach, which leverages state-specific resource potential paired with an Integrated Planning Model ("IPM"). Both proposals include reasonable rationale and merit, however, they also have several drawbacks which could, inadvertently, lead states to developing overly conservative renewable energy generation targets. The following sections provide a brief overview of the two approaches set forth by EPA, as well as key considerations of there these approaches may not be optimal. Note that the following sections provide high-level summary of the key issues, whereas the response to Question #3 gets into greater detail with regards to how these approaches apply to RE generation in Florida.

EPA's Proposed RE Approach: methodology and considerations

Under the Proposed RE Approach, RE target levels are developed based on an average of renewable portfolio standards ("RPS") targets within pre-determined regions. Florida falls within the Southeast region, which also includes: Alabama, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee. Since North Carolina is the only state with an RPS in the region, its RPS target – 10% - is used as the RE target for the entire Southeast region.[27] That 10% is multiplied by the region's total generation for 2012 to determine the final generation target that will be used for 2030. A growth factor is then calculated based on achieving the 2030-generation target over 13 years (i.e., 2017-2029). The baseline value used for 2017 is the total RE generation for the region in 2012. The growth factor for the Southeast is 13%, which is then applied to each state to determine a state-specific RE target for 2030, which happens to be 10% for Florida.

Although this approach may be sufficient for spurring RE development in many states, it does undermine the true technical and practical potential of RE and should therefore not be used to limit a state's RE generation target. The following list highlights some of the specific drawbacks of this approach that should be taken into consideration:

- The Southeast region's RE target is based on North Carolina's RPS target, which is one of the weakest (lowest) in the United States. This subjects an entire region to overly conservative RE generation targets.

[27] The North Carolina Renewable Energy and Energy Efficiency Portfolio Standard is actually set at 12.5% of 2020 retail electricity sales by 2021, however 25% of that target can be met with energy efficiency, hence EPA used 10% for the RE target.

- Technology performance, price points, and general investor and consumer familiarity have improved dramatically since the inception of North Carolina's RPS in 2007, and therefore more aggressive RPS targets would be more appropriate and feasible if a state were to develop one today.
- The basis for the RE generation target is a percentage of 2012 total generation levels, despite electricity demand projected to increase by nearly 18% by 2030. A 10% RE target based on 2012 total generation will result in RE generation equal to about 8.5% of the actual 2030 total generation.[28]
- EPA's approach results in having the RE target level be a cap, if achieved, rather than continuing development. This is an arbitrary step that could potentially slow down the momentum of an industry that will ultimately need to be exploited more as time goes on.
- The baseline (2012) data for RE generation is based on EIA collected data, which rarely captures the entire industry's installed capacity at the utility scale, and fails to include any distributed generation (e.g., rooftop photovoltaic ("PV")).
- There is no floor for baseline RE generation levels, so states like Kentucky with hardly any existing RE generation cannot achieve the 10% RE generation target by 2030 using the regional growth factor.

Note that greater detail with regards to how this Approach applies to RE generation in Florida is provided in the response to Question #3.

EPA's Alternative RE Approach: methodology and considerations

EPA's Alternative RE Approach compares each state's RE technical potential – based on a National Renewable Energy Laboratory ("NREL") geographic information systems ("GIS") analysis[29] - against its existing RE generation – based on 2012 EIA data. A RE development rate is then created for each state's RE technology, by dividing the existing RE generation (e.g. for wind energy) by the resource potential of that technology in the state. An average development rate is then applied to each technology based on the average of the highest development rates produced by the top third (16). The benchmark rate is then applied to each state's technical potential to calculate the benchmark generation for each technology type.

The Alternative RE Approach pairs the benchmark RE development rates described above with IPM model runs of RE deployment. RE technology cost inputs to the IPM model are reduced by up to $30 per MWh to account for avoided cost of other actions that could have been taken to reduce CO_2 emissions. The output of the model runs are total generation levels for RE technologies (i.e., target generation levels), which can then be compared to the benchmark generation level calculated using the development rate. The lower value of the two methodologies (development rate vs. IPM model run) is determined to be the generation target value in the Alternative RE Approach.

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[28] EIA projects total electricity demand to increase by 29% between 2012 and 2040, or about 0.9% a year. EIA. "Annual Energy Outlook 2014. Market Trends: Electricity Demand." Found at: http://www.eia.gov/forecasts/aeo/MT_electric.cfm#growth_elec

[29] NREL. (2012). "U.S. Renewable Energy Technical Potentials: A GIS-Based Analysis." Found at: http://www.nrel.gov/docs/fy12osti/51946.pdf

As with the Proposed RE Approach, SACE has flagged several drawbacks and considerations for the Commission with regards to calculating RE generation targets under the Alternative RE Approach.

Issues to consider under the Benchmark Rate and IPM modeling approaches.

- The calculation for the development rate has several undermining assumptions, such as using 2012 data as the "existing" starting point even though development for RE technologies has accelerated and a higher "existing" figure would be more prudent. This is particularly true considering the state plans don't even go into affect until 2017.
- The technical potential numbers, though maybe accurate for solar technology, are not as credible for wind energy due to advances in technology performance that were not included in the NREL report. Conversely, the resource potential for solar is so large that, combined with low "existing numbers," results in an arbitrarily low average development rate for solar in particular (.009%).
- Technology assumptions in the IPM model are very conservative, particularly with regards to RE technology costs. The values presented are substantially higher than what's reflected in today's installed costs. Other modeling assumptions, such as capacity factors, are also conservative. These inputs undermine RE's competitiveness in the IPM model – even with a $30/MWh reduction.
- EPA recommends using the lower of the two values produced by the benchmark rate versus the IPM model output. As these values are already very conservative to start with, this is an unnecessary step to further prevent RE generation targets from achieving more realistic and substantive levels.

Nuclear Energy

Not all building blocks proffered by the EPA in the Clean Power Plan are created equal. Nuclear power is an expensive, water-intensive, dirty energy choice in comparison to other low carbon-emitting options including renewables such as wind and solar. Nuclear reactors produce toxic, long-lived, highly radioactive waste, and require massive amounts of water to operate and can have catastrophic consequences should an accident occur. The state of Florida should not allow nuclear power to be considered within a "clean energy standard." Therefore, when evaluating the options made available by the EPA under the Clean Power Plan, the state of Florida should not consider new nuclear power generation as a "reasonable cost" option to reduce carbon emissions given these real-world examples.

Florida utilities have proposed up to four new nuclear reactors, all of the Toshiba-Westinghouse AP1000 design, with two each at two sites: Duke Energy Florida's Levy County and FPL's Turkey Point 6 and 7. But the costs associated with new nuclear power generation in Florida have proven it is not a cost-effective option for utility customers. All of these projects are severely delayed and over-budget (in fact neither utility has actually committed to building the reactors and Duke's Levy Co. project is nearly cancelled as the utility is only pursuing obtaining a federal license from the U.S. Nuclear Regulatory Commission). Families, business and those on fixed-budgets have been negatively impacted due in part to state legislation that allows utilities to charge customers in advance for some costs associated with pursuing new reactors, with no refunds should the utilities officially cancel the projects.

In contrast, energy efficiency programs can meet demand for 2 to 4 cents per kilowatt-hour in comparison to the costs of new nuclear generation in Florida, which in the case of Turkey Point 6 and 7 is approximately 15 cents per kilowatt-hour.[30]

Similarly, all five new reactors actually under construction in the U.S. (TVA's Watts Bar 2 in TN; Southern Company's Vogtle 3 & 4 in GA; and SCE&G's V.C. Summer 2 & 3 in SC) have also experienced significant cost increases and delays (the latter four are also the AP1000 design). Therefore, when evaluating the options made available by the EPA under the Clean Power Plan, the state of Florida should not consider new nuclear power generation as a "reasonable cost" option to reduce carbon emissions given these real-world examples.

Given Florida's unique vulnerability to the threats posed by climate change, the electricity sector's current and future resiliency should be considered, especially in terms of the sector's water intensity. For example, nuclear power is incredibly water-intensive and lacks the resiliency that other energy options provide especially energy efficiency and renewables, including wind and solar. Nuclear plants in the Southeast and across the country have proven themselves vulnerable to the impacts that climate change will only provide more examples of - drought, severe weather events and changes to needed water resources in terms of both quality and supply, among others.[31] Just recently, the reliability of Turkey Point's existing reactors was compromised given algae impacts on the nuclear plant's ultimate heat sink temperature limit, resulting in reduced power generation.[32]

The state of Florida should prioritize investment in energy options that are less vulnerable to the effects of climate change versus those that have already demonstrated a lack of resiliency. Smart, less water-intensive energy choices made today will have long-lasting benefits for Florida's economic and environmental health.[33]

Florida is already reliant on high-risk energy choices such as coal, natural gas and nuclear power and has made limited advancement in terms of renewables and energy efficiency relative to many leading states. Investing in more high risk energy entrenches an antiquated electric distribution technology and will further limit the advancement of cost-effective, reliable, less water-intensive and resilient choices especially energy efficiency measures and renewables such as wind and solar, of which Florida has yet to fully tap the potential. The state of Florida should incentivize truly clean, affordable energy options versus perpetuating the status quo.

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[30] Southern Alliance for Clean Energy, Post-Hearing Statement, Florida Public Service Commission Docket 130009-EG, August 19, 2013. Available at http://www.cleanenergy.org/wp-content/uploads/F_SACE_FLNCRC-2013-Post-Hearing_StmtandBrief_081913.pdf.

[31] See the Union of Concerned Scientist's recent report, "*Power Failure: How Climate Change Puts Our Electricity at Risk -- and What We Can Do*." Available at http://www.ucsusa.org/assets/documents/Power-Failure-How-Climate-Change-Puts-Our-Electricity-at-Risk-and-What-We-Can-Do.pdf.

[32] U.S. Nuclear Regulatory Commission, *Event Notification Report for July 28, 2014, Event No. 50287*. Available at http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2014/20140728en.html and Jenny Staletovich, Miami Herald, *Feds OK hotter water to operate Turkey Point nuclear reactors*, August 6, 2014. Available at http://www.miamiherald.com/2014/08/05/4273673/feds-ok-hotter-water-to-operate.html.

[33] See the Union of Concerned Scientists' *Energy and Water in a Warming World Initiative* and corresponding reports at http://www.ucsusa.org/clean_energy/our-energy-choices/energy-and-water-use/about-energy-and-water-in-a-warming-world-ew3.html.

3. Please provide input on the assumptions EPA employed in setting the Florida-specific interim and final emission targets in the Clean Power Plan.

Energy Efficiency
There are only two assumptions that the EPA made regarding energy efficiency for the Florida interim and final emission targets. First, the EPA assumes that the baseline level of performance that Florida could achieve in 2017 is comparable to the level it reported in Energy Information Administration Form 861 in 2012. The data that is reported in EIA Form 861 in 2012 is based from calendar year 2011 data. Thus, EPA assumes that Florida's energy efficiency starting point is comparable to where it was in 2011. This is a very conservative estimate, and as shown in Table 3, most Florida utilities are very close to or are achieving the baseline. However, 2018 will require the utilities to ramp up their efforts.

Table 3. Florida Utilities 2013 Savings as a Percent of Sales and EPA's Florida 2017 and 2018 Energy Efficiency Goal

	2013 Savings	EPA 2017 Goal	EPA 2018 Goal
Gulf Power	0.80%	0.25%	0.45%
JEA	0.26%		
TECO	0.23%		
FPUC	0.21%		
Duke Florida	0.21%		
FPL	0.19%		
OUC	0.15%		

Second, the EPA assumes that Florida will achieve a 0.20% increase in energy efficiency impacts each year. As shown previously in Table 1, this results in Florida achieving 1.5% of retail sales in 2025 and each year there after. This is also a very conservative estimate as there were states that achieved this level of energy efficiency in 2012. The technology and enabling policy all exists, it simply must be implemented.

Renewable Energy
As discussed above, EPA's assumptions grossly underestimate RE's potential role in helping states meet their carbon emissions reduction targets. This holds true in the proposed emissions reduction targets for Florida as well.

Under EPA's Proposed RE Approach, RE generation would have a target of 10% of 2012's total generation by 2030. EPA estimates the Florida RE generation level was 4,523,798 MWh in 2012, or about 2% of the total generation that year. The RE generation in 2012 consisted of primarily biomass power (~96%), with the bulk of the remainder coming from solar generation.[34]

[34] EIA. (2013) "Electric Power Annual 2012."

To achieve 10% of the 2012 total generation, approximately 22,109,614 MWh of RE generation would be required in 2030, nearly four times the 2012 generation level. EPA does not provide a technology roadmap as to how to meet that 10% target generation level.

Under EPA's Alternative RE Approach, the RE target generation for 2030 is only 2,690,000 MWh, or approximately 1% of the state's total 2012 generation.

The Proposed RE Approach is clearly more desirable – and realistic - than the Alternative RE Approach. However, even the Proposed RE Approach is extremely conservative given the renewable resources available to Florida. The following discussion highlights some of the specific attributes associated with solar, wind, and biomass that demonstrate the conservativeness in EPA's proposal, as well as the opportunity before Florida.

In 2009, SACE published the first comprehensive region-specific assessment of feasible renewable energy potential in the Southeast.[35] At that time we observed that Florida's average electric power generation (during the study period, 2005-2007) was 220,931 GWh, of which 2% was renewable energy generation. We projected that by 2020, Florida's feasible renewable resource potential (relative to 2006 sales) was 20%. This projection was based on both technical and economic feasibility assessments of all published renewable resource data sets.

In the technical support documents for the 111(d) proposal, EPA projects that Florida's renewable energy generation will actually decline relative to sales, from 2% to 1%.[36] This is clearly an unambitious goal.

Wind Energy

Due to improved resource assessments for wind energy potential in Florida, as well as reduced costs associated with wind turbine installation, Florida's wind energy potential is substantially better than estimated by EPA's Clean Power Plan. The EPA estimates that Florida contains less than one megawatt of onshore wind energy potential for the entire state.[37] Additional EPA resources estimate Florida's average annual onshore wind capacity factors to be approximately 29%.[38] Both estimates are likely based on an analysis from the NREL that was published in 2010 using older, now-outdated data.

Using updated turbine technology and better resource assessments, the NREL now estimates Florida may contain nearly 1,500 megawatts of wind energy potential with over 40% capacity

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[35] Southern Alliance for Clean Energy (2009). Yes We Can: Southern Solutions for a National Renewable Energy Standard [http://www.cleanenergy.org/yes-we-can-southern-solutions-for-a-national-res/].

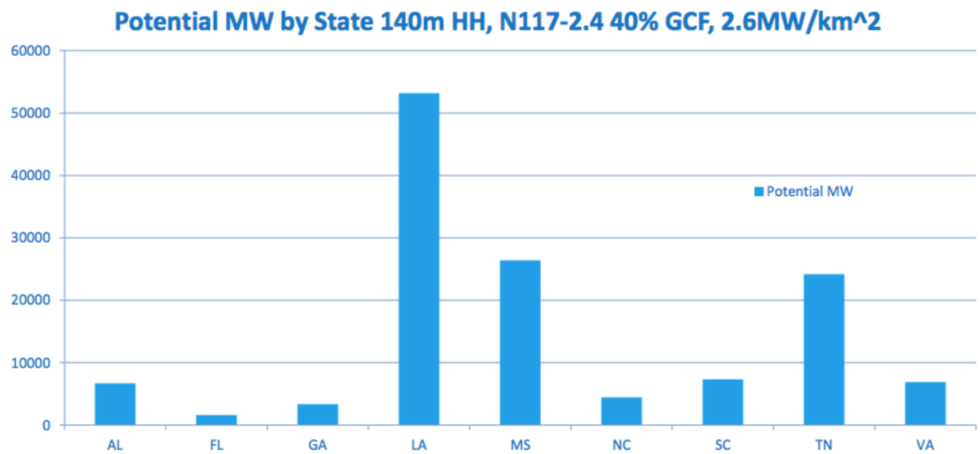
[36] Environmental Protection Agency (2014). Alternative RE Approach Technical Support Document, Table 1.1. State-Level Target Generation Levels Under the Alternative RE Approach (Gigawatt-hours), [http://www2.epa.gov/sites/production/files/2014-05/documents/20140602tsd-alternative-re-approach.pdf]

[37] Environmental Protection Agency (2014). EPA's Power Sector Modeling Platform v.5.13, Chapter 4.: Generating Resources. [http://www.epa.gov/airmarkt/progsregs/epa-ipm/docs/v513/Chapter_4.pdf]

[38] Environmental Protection Agency (2014). Onshore Wind General Profiles in EPA Base v.5.13 (kWh of Generation per MW of Electricity). [http://www.epa.gov/airmarkt/progsregs/epa-ipm/docs/v513/table4_20.xlsx]

factors.[39] Taller wind turbines, with longer blades greatly expand not only Florida's onshore wind potential, but also onshore wind potential for the rest of the south.

Figure 2. Onshore Wind Energy Potential, by State, >40% Capacity Factor (Megawatts)



Source: National Renewable Energy Lab 2013[40]

As can be seen by the figure above, onshore wind energy potential for the south has greatly expanded. Over 134,000 megawatts of onshore wind potential now exists with capacity factors over 40%.[41] Florida's onshore wind potential, while less than other states in the south, still represents nearly 1,500 megawatts of wind potential capacity. Based on these figures, wind energy in Florida could produce approximately 5.2 million megawatt hours of electricity annually. A wind farm had recently been proposed in Florida with a total capacity of 200 megawatts,[42] indicating the current EPA estimates for Florida's wind potential are gross underestimates.

Costs associated with onshore wind deployment are greatly overestimated. Capital cost assumptions for onshore wind generation begin at $2,258 per kilowatt in the year 2016, and decline to $1,864 per kilowatt by the year 2050.[43] These figures are substantially higher than actually reported wind energy capital costs. In 2012, the Lawrence Berkeley National Laboratory reports that average installed capital costs for wind energy across the country was $1,940 per kilowatt.[44] Costs have consistently declined and EPA's current benchmarks are substantially higher than actual installed costs indicate.

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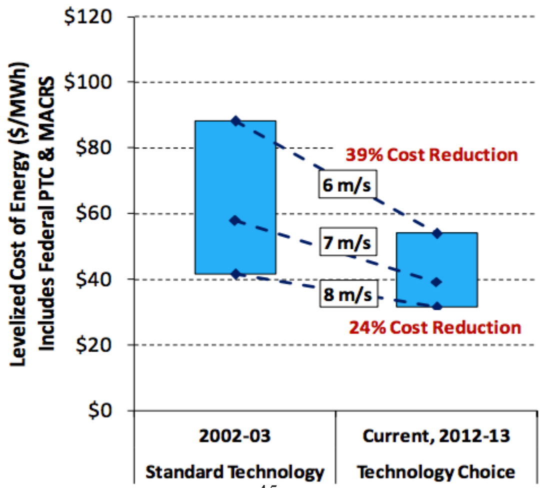
[39] Roberts, Owen (2013, September 11). Land-Based Wind Potential Changes in the Southeastern United States, National Renewable Energy Laboratory. [http://www.nrel.gov/docs/fy14osti/60381.pdf]
[40] *Id*.
[41] *Id*.
[42] Rahman, Habibur (2013, November 26). Florida DEP Approves New Wind Farm in Palm Beach County. [http://www.floridaconstructionnews.com/florida-dep-approves-new-wind-farm-in-palm-beach-county/]
[43] Environmental Protection Agency (2014). EPA's Power Sector Modeling Platform v.5.13, Chapter 4.: Generating Resources. [http://www.epa.gov/airmarkt/progsregs/epa-ipm/docs/v513/Chapter_4.pdf]
[44] Wiser, Ryan and Bolinger, Mark (August 2013). 2012 Wind Technologies Market Report, Lawrence Berkeley National Laboratory. [http://emp.lbl.gov/sites/all/files/lbnl-6356e.pdf]

Figure 3. Onshore Wind Energy Cost Reductions, by Average Wind Speed ($/MWh)



Source: National Renewable Energy Lab 2013[45]

As indicated by Figure 3, great strides have been made to reduce the levelized cost of energy from wind turbines. Of particular interest to Florida, costs associated with deploying wind farms in lower wind speed areas (6 meters per second, or about 13.4 miles per hour) have declined 39% over the past decade. This decline is substantially greater than the 24% cost reduction associated with areas with higher wind speeds (8 meters per second, or about 17.9 miles per hour). With current technology, Florida's areas that contain average annual wind speeds of 6 meters per second, or better, are capable of producing electricity at approximately $55 per megawatt hour.[46]

Due to improved resource assessments for wind energy potential in Florida, as well as reduced costs associated with wind turbine installation, Florida's wind energy potential is substantially better than estimated by EPA's Clean Power Plan. Furthermore, importing wind energy from out-of-state will become more viable as additional transmission capacity is built across state lines and service territories. By the year 2020, when Florida's State Implementation Plan should begin, wind energy should be a low cost, zero carbon energy resource for the state. At a minimum, Florida should plan to obtain 1,500 megawatts of wind energy by 2020.

Solar Energy

There was just under 140 MW of solar photovoltaics (PV) installed in Florida at the end of 2013, not including a 75 MW concentrating solar power plant.[47] In 2013, about 20 MW of PV were installed in Florida, which has been about the same annual amount installed for the past several years. Florida has not even begun to tap its abundant solar resource, despite a market that is booming across the country, including in neighboring states like Georgia and North Carolina.

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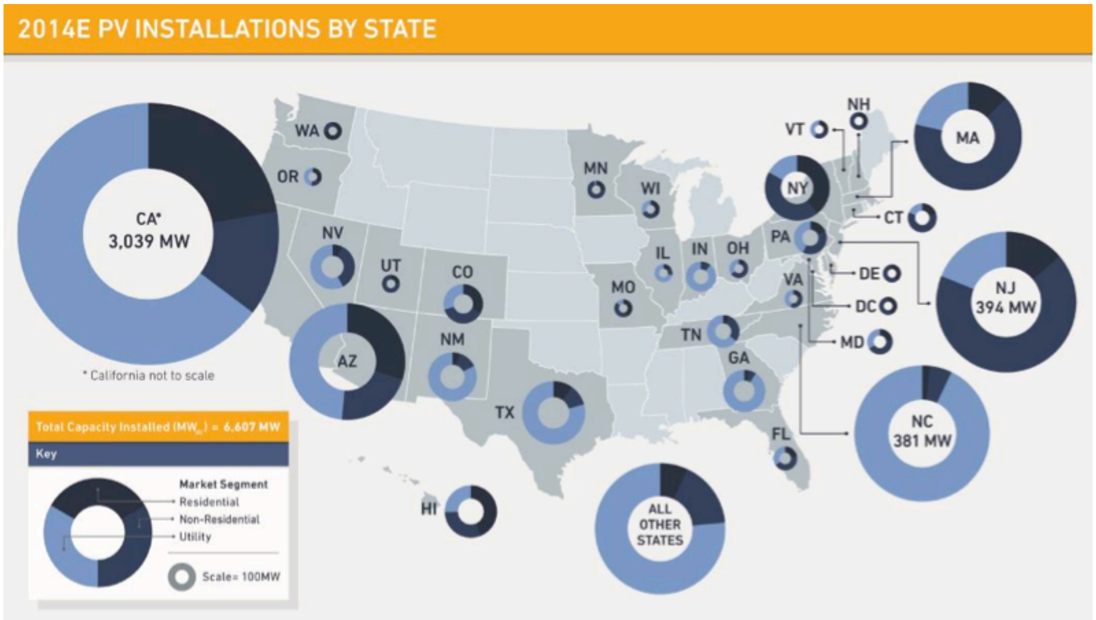
[45] Roberts, Owen (2013, September 11). Land-Based Wind Potential Changes in the Southeastern United States, National Renewable Energy Laboratory. [http://www.nrel.gov/docs/fy14osti/60381.pdf]*Id*.

[46] *Id*.

[47] Interstate Renewable Energy Council (IREC). (2014) U.S. Solar Market Trends 2013. Found at: http://www.irecusa.org/tag/us-solar-market-trends-report-2014/

The following figure[48] shows the expected PV capacity additions in 2014, by state.

Figure 4: 2014 Solar PV Installations by State (total MW)



The U.S. Department of Energy's SunShot Vision Study[49], used a modeling approach similar to EPAs, but with a specific focus on determining the penetration impacts of solar energy based on reduced solar cost assumptions. Specifically, if the price of solar reached $1000/kW for utility-scale projects (and slightly higher for rooftop projects) by 2020, the DOE analysis found that Florida could feasibly have about 40 GW of solar by 2030, and nearly 75 GW by 2050. Of note, the model showed Florida would actually install more PV capacity than any other state by 2030, eventually falling behind only one other state – Texas – in 2050. Assuming Florida's electricity demand increases by .8% per year, the DOE SunShot capacity levels would result in enough solar to meet over 20% of annual net electricity generation in 2030.

This capacity potential resulting from DOE's model is not unrealistic. The same NREL report used in creating a benchmark development rate under the Alternative RE Approach, found that Florida's urban and utility-scale PV technical potential is 2,853 GW.[50] This amount of PV capacity could generate 5,210,134 GWh, over twenty times the 2012-generation needs for the entire state. Separately, Florida's rooftop potential is 49 GW, or 63,987 GWh, which is ranked third highest in the U.S. This amount of rooftop solar could alone meet 30% of Florida's 2012 generation. Rooftop PV (or distributed generation (DG) more generally) represents an area of emissions reduction that is not engaged adequately by EPA. Yet, DG accounted for about 40% of

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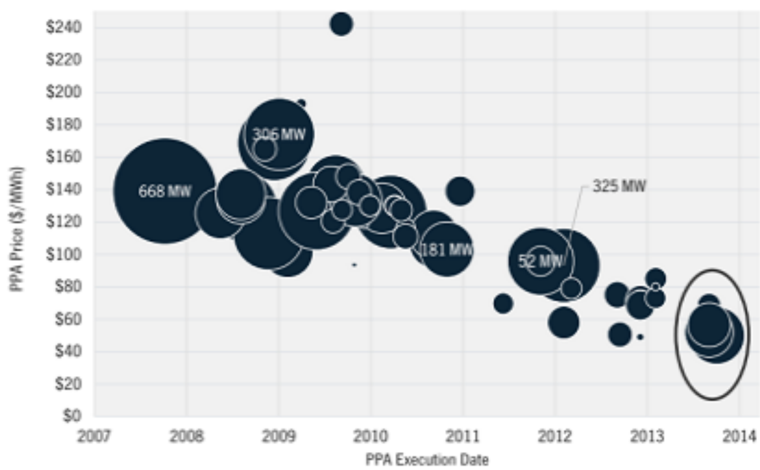
[48] GTM and SEIA. (2014). U.S. Solar Market Insight Report. Q1 2014, Executive Summary. Found at: http://www.seia.org/research-resources/solar-market-insight-report-2014-q1
[49] U.S. Department of Energy. (2012) "SunShot Vision Study." Found at: http://energy.gov/eere/sunshot/sunshot-vision-study
[50] NREL. (2012). "U.S. Renewable Energy Technical Potentials: A GIS-Based Analysis." Found at: http://www.nrel.gov/docs/fy12osti/51946.pdf

the 2013 added PV capacity on a national level, and in Florida accounted for 80% of the PV capacity installed in 2013.[51]

The DOE SunShot price targets are also not unreasonable. EPA's IPM model used an installed cost of $3,364 per kW for utility-scale PV in 2016, dropping to $2,533 per kW in 2050. This is extremely high, considering that from the beginning of 2011 to the end of 2013, the average installed cost for utility-scale projects dropped by 50% - from about $4,000 to below $2,000 per kW.[52, 53] Lazard projects the installed cost for utility-scale crystalline PV installations to drop to $1,500/kW in 2015, representing a levelized cost of $54/MWh considering financing and tax implications.[54] The recent and projected price points for PPAs provide additional evidence of the economic competitiveness of PV technology.[55] In the first half of 2014, PPA pricing across the country for new utility PV installations ranged between $50-$70/MWh (see figure).[56]

Figure 5: Solar PPA Prices by Contract Execution Year and System Size[57]



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[51] IREC. (2014) U.S. Solar Market Trends 2013. Found at: http://www.irecusa.org/tag/us-solar-market-trends-report-2014/

[52] Feldman, D.; Barbose, G.; Margolis, R.; Darghouth, N.; James, T.; Weaver, S.; Goodrich, A.; Wiser, R. (2013) "Photovoltaic System Pricing Trends: Historical, Recent, and Near-Term Projections. 2013 Edition." NREL & LBNL. Found at: http://emp.lbl.gov/publications/photovoltaic-system-pricing-trends-historical-recent-and-near-term-projections-2013-edi

[53] GTM and SEIA. (2014). U.S. Solar Market Insight Report. Q1 2014, Executive Summary. Found at: http://www.seia.org/research-resources/solar-market-insight-report-2014-q1

[54] The unsubsidized levelized cost is estimated to be $68/MWh. Lazard. (2013) "Lazard's Levelized Cost of Energy Analysis – Version 7.0." Found at: http://gallery.mailchimp.com/ce17780900c3d223633ecfa59/files/Lazard_Levelized_Cost_of_Energy_v7.0.1.pdf

[55] Over the past 6 years levelized PPA prices for utility-scale solar projects have fallen by an average of $25/MWh per year. Bolinger, M. and S. Weaver. (2013) "Utility-Scale Solar 2012: An Empirical Analysis of Project Cost, Performance, and Pricing Trends in the United States. Lawrence Berkeley National Laboratory (LBNL). Found at: http://emp.lbl.gov/publications/utility-scale-solar-2012-empirical-analysis-project-cost-performance-and-pricing-trends

[56] GTM. (2014). *Five Things You Should Know About the U.S. Utility-scale PV Market*. Found at: http://www.greentechmedia.com/articles/read/Five-Things-You-Should-Know-About-the-US-Utility-Scale-PV-Market

[57] Ibid.

Prices for distributed generation have also dropped rapidly over the past few years. Florida actually reported the lowest installed cost for residential solar in the first quarter of 2014, at $3,280 per kW.[58]

Solar generation represents an economic and quickly deployable resource that can be leveraged in achieving Florida's emission reduction targets. Florida should install at least 10 GW-ac[59] of PV by 2030, with interim goals of installing 2 GW-ac by 2020, and 6 GW-ac by 2025. Conservatively, 10 GW-ac would meet 8% or more of Florida's 2012 generation, and about 7% of the state's 2030 (projected) generation.[60] This capacity could consist of a mix of distributed generation and utility-scale development, potentially following national trends with a 40/60 ratio (e.g., 40% DG and 60% utility-scale). This type of development could not only play a critical role in meeting or exceeding EPA requirements, but would also provide Florida with positive economic development impacts and valuable grid and utility customer economic benefits.

4. Should the effects of actions implemented after 2005, which resulted in a lower CO^2 footprint, be included in the EPA's Clean Power Plan, and if so, explain how and why?

Energy Efficiency

The EPA is proposing to allow actions implemented after the rule was proposed on June 2, 2014, to count toward compliance with the rule.

> The EPA is proposing that, for an existing state requirement, program, or measure, a state may apply towards its required emission performance level the emission reductions that existing state programs and measures achieved during a plan performance period as a result of actions taken after the date of this proposal.[61]
>
> Under the proposed option, the eligibility date would be the date of these proposed emission guidelines. For example, under this approach, new demand-side EE measures installed in 2015 or later to meet an existing, on-the-books energy efficiency resource standard (EERS) would be a qualifying measure. However, only MWh savings beginning in 2020 and related CO^2 emissions could be applied toward meeting a required rate-based emission performance level.[62]

SACE supports EPA's proposal that a state may apply emissions reductions resulting from energy efficiency that was implemented after the date of the proposal towards interim goals. This

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[58] GTM and SEIA. (2014). U.S. Solar Market Insight Report. Q1 2014, Executive Summary. Found at: http://www.seia.org/research-resources/solar-market-insight-report-2014-q1

[59] The need to specify Alternating Current (AC) versus Direct Current (DC) is important in determining capacity levels. The biomass and wind data are already provided in terms of AC.

[60] Assumes a capacity factor (AC) of at least 20%, and is based on EIA's 0.9% electricity generation growth rate. EIA. "Annual Energy Outlook 2014. Market Trends: Electricity Demand." Found at: http://www.eia.gov/forecasts/aeo/MT_electric.cfm#growth_elec

[61] 79 FR 34918, June 18, 2014

[62] 79 FR 34919, June 18, 2014

provides Florida with an excellent opportunity to start early on using energy efficiency as a compliance tool. There are many measures that have long lives, and can contribute towards Florida's overall emission reductions in 2020 and beyond. Table 4 lists common residential and non-residential measures that last longer than 10 years.

Table 4. Residential and Non-Residential Energy Efficiency Measures with a >10 Year Measure Life

Residential	Non-Residential
Floor, wall and ceiling insulation	Lighting: LED overhead lighting, LED task lighting, LED exterior lighting, reflectors/delamping, energy star windows and skylighting
Duct sealing	Kitchen: ventilation hoods, hot food holding cabinets, commercial steam cookers, high efficiency fryers
Appliances: clothes washers, refrigerators, freezers, ceiling fans, dehumidifiers	HVAC: High efficiency heat pump, high efficiency packaged AC, high efficiency chiller,
Air source heat pumps, duel fuel heat pumps	Grocery: high efficiency refrigeration compressor, refrigerated case no sweat doors, window film, high efficiency packaged refrigeration equipment
Electrically commuted motors for HVAC equipment	Pumps and Motors: Timer for recirculation pump, adjustable speed drives,
Lighting: LEDs, occupancy sensors	Appliances: Clothes washers, conveyer and stationery dishwashers, low flow showerhead
Pool pump timers	
Hot water heater timers	

Renewable Energy
To some extent, actions taken after 2005 have already impacted each state's carbon emission target. For renewable energy, EPA's Proposed RE Approach and Alternative RE Approach utilize methods which account for existing installed capacity. In addition, the actions taken between now and 2017, the formal point at which EPA's Carbon Rule could become an active law, will push each state ahead in meeting emissions targets. One of the benefits of most renewable energy technologies is that it has a long life-span, ranging from 20-50 years, or more, and can therefore play a continued role in supporting emissions reductions well into the future.

5. Please discuss the achievability of meeting EPA's proposed Florida-specific interim and final emission targets in the Clean Power Plan.

Energy Efficiency
As discussed in the recent FEECA proceeding, there are many reasons why the Florida utilities can increase their annual energy efficiency impacts. In addition, there are many reasons why the

state of Florida should use energy efficiency as a significant compliance tool for meeting the emissions reduction goals.

Florida can achieve 1.5% annual efficiency impacts

The utilities argue that the achievable potential they put forward is the limit to what they can achieve. However, there are several reasons that this is not true. The utilities can achieve higher energy efficiency impacts than what they put forward in their 2014 goal setting proceeding, and the state of Florida can ramp up to achieve energy efficiency impacts equal to 1.5% of prior year retail sales for several reasons.

First, as mentioned above, there are many states that are achieving energy efficiency impacts comparable to 1-1.5% of prior year sales. In 2011 Vermont achieved energy efficiency impacts equal to 2.12% of prior year retail sales, and 13 additional states achieved efficiency savings equal or greater than 1% of prior year retail sales: Massachusetts, Arizona, California, Connecticut, Hawaii, New York, Rhode Island, Ohio, Minnesota, Maine, Iowa, Pennsylvania, and Michigan.[63]

Next, the utilities eliminate many of their technical, economic and achievable potential by using the "two-year" screen, as discussed extensively in SACE witness Natalie Mims' recent testimony in the FEECA docket.[64] This is an arbitrary screen that is a proxy for free riders. The utilities, in determining their efficiency potential, eliminate all measures that have a simple payback of less than two years. In the most recent FEECA goal setting proceeding, the utilities eliminated between 3,000 and 13,000 GWh of energy efficiency because of this screen alone.

Third, the utilities can increase their annual efficiency impacts because they did not evaluate energy efficiency savings from all sectors of the economy. In the utilities' technical potential analysis, they did not include energy efficiency impacts from agriculture, transportation, communications and utilities (TCU), construction and outdoor/street lighting. These sectors accounted for over 10% of total sales for the utilities.

Fourth, the utilities claim that they have exhausted the supply of "low-hanging fruit" because of their longstanding efficiency implementation. This is simply not true. Florida's 2011 energy efficiency impacts are less than 33 other states. Florida saved about 0.25% of sales in 2011, while leaders in the nation were saving 2% of sales through energy efficiency. Energy efficiency is an abundant resource that has not been exhausted by states that have been implementing it for decades.

For example, the Pacific Northwest has, similar to Florida, been implementing energy efficiency for over 30 years. Federal building energy codes, appliance standards and low natural gas prices affect utilities across the country, however, the Pacific Northwest has continued to find efficiency opportunities. In the Northwest Power Planning Council's Sixth Power Plan, despite

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[63] Downs et al, American Council for an Energy Efficiency Economy. The 2013 State Energy Efficiency Scorecard. Research Report E13k, Available at: http://www.aceee.org/research-report/e13k

[64] Florida Public Service Commission Docket Nos 130199-EI, 130200-EI, 130201-EI, 130202-EI; Direct Testimony of Natalie Mims. Available at: http://www.floridapsc.com/library/FILINGS/14/02366-14/02366-14.pdf

the region meeting half of its electricity growth with energy efficiency to date, the plan continues to find additional energy efficiency resources. The plan found that energy efficiency could meet 85% of load growth for the next 20 years. This is a far cry from the Florida utility's proposed efficiency goals.

Fifth, allegedly Florida utilities have projected such low energy efficiency savings and shy away from higher efficiency impacts due to the high cost that the efficiency programs would impose on consumers. This is also simply not true. In the FEECA goal setting proceeding, the utilities rely on bloated cost assumptions to drive up the cost of energy efficiency. For example, in FPL's application a measure that costs $4 has a $108 administrative cost.

Finally, the utilities assume that consumers must pay the utility for every kilowatt-hour they save, for the entire life of the measure. This means that if a customer buys a more efficient air conditioner, every kilowatt-hour that is saved by upgrading to the more efficient unit, for the next 10 years, or how ever long the unit lasts, the customer must pay the utility for it through "lost revenues."

Florida should maximize efficiency in its compliance plan
Fortunately, energy efficiency continues to be the lowest cost resource that results in the lowest electricity system cost, all while helping reduce carbon emissions and preserving Florida's water resources. Even FPL agreed with SACE at the recent FEECA hearing that energy efficiency reduces electric system costs, and if FPL achieved 1% energy efficiency savings a year, it would cost $4 billion less to the electric system than FPL's proposed goal of 0.002%.

In the State Plan Considerations Technical Source Document (TSD), the EPA states, "the EPA notes that it is not proposing to limit the types of RE and demand-side EE programs and measures that may be included in a state plan."[65] Currently, energy efficiency only comprises approximately 15% of Florida's emission reduction target. Given the low-cost, modular, flexible nature of energy efficiency, SACE strongly advocates that Florida explore adding more than the 1.5% annual efficiency savings that the EPA has suggested.

Renewable Energy
As demonstrated in the above discussion, Florida has a wealth of renewable resources that alone could meet the state's emissions targets. Renewable technologies can be deployed quickly and cost effectively, while supporting home-grown economic development.

Wind Energy
It is now economically feasible for wind farm development within Florida with currently available technology. The NREL estimates that Florida may contain approximately 1,500 megawatts of onshore wind energy potential using available technology. As stated previously, Florida's onshore wind potential may be able to generate approximately 5.2 million megawatt hours annually for about $55 per megawatt hour using current technology. These figures have

[65] US Environmental Protection Agency, (2014) Technical Source Document: State Plan Considerations, page 36. Retrieved from http://www2.epa.gov/carbon-pollution-standards/clean-power-plan-proposed-rule-state-plan-considerations

improved over the past decade, and will continue to improve over the course of Florida's State Implementation Plan. By the year 2020, when Florida's State Implementation Plan should begin, wind energy should be a low cost, zero carbon energy resource for the state. At a minimum, Florida should plan to obtain 1,500 megawatts of wind energy by 2020.

Solar Energy
Solar energy is Florida's most abundant renewable resource. The rapid price declines, coupled with proven technology performance and low construction-time requirements, make this energy source available for immediate deployment. Utility-scale and distributed generation applications should be leveraged in meeting the emissions targets set by EPA. Florida should establish a goal of having at least 10 GW-ac of installed PV capacity by 2030. This would get Florida to over 80% of the 10% RE target established by EPA under their "proposed" RE approach. That said, EPA's proposed RE approach should not be viewed as a cap to solar or other renewable energy development.

Biomass Energy
EPA has seemingly omitted energy generated by biomass from its compliance toolbox for the CPP. We would ask the Commission to explore the opportunities available in Florida for biomass generation. EPA chose not to model any of this resource in setting Florida's goals. Therefore any goals Florida might choose to set for biopower should be determined based on sustainable resource availability and economic feasibility.

The sustainability of available forest biomass resources is a subject that has been thoroughly explored in publicly available documents.[66] Additionally, economic feasibility is a critical consideration when analyzing the benefits of biomass as a compliance option. Compared to wind generation and PV generation, however, the higher capacity factor and dispatchability of biomass can be of value to the grid, on par with natural gas fueled generation.

Conclusion

In conclusion, SACE supports the EPA's Clean Power Plan and Florida's efforts to respond to the proposed rule and comply with the final rule. The Clean Power Plan represents a critical piece of a multi-faceted approach to reduce carbon pollution that causes climate change and threatens public health. SACE supports the Clean Power Plan as it will protect public health, address carbon pollution that is fueling climate change, and move us towards lower cost, lower risk and cleaner energy sources that will grow Florida's economy and create jobs.

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[66] Florida Department of Agriculture and Consumer Services (2010). Final Report: Woody Biomass Demand and Supply. [http://www.freshfromflorida.com/Divisions-Offices/Florida-Forest-Service/Our-Forests/Working-Forest/Economic-Impact-Analysis-of-Woody-Biomass-Utilization-for-Bioenergy-in-Florida]

Sincerely,

Dr. Stephen A. Smith
Executive Director, SACE