

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**Solicitation of Comments to Develop the Commonwealth's Compliance Plan for
the United States Environmental Protection Agency's Final Rule for Carbon
Pollution Emissions Guidelines for Existing Stationary Sources; Electric
Generating Units (Clean Power Plan)**

COMMENTS OF THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Dated: November 12, 2015

I. INTRODUCTION

The Pennsylvania Public Utility Commission (PAPUC) herein files comments in response to the Pennsylvania Department of Environmental Protection's (PADEP) Solicitation of Comments to Develop the Commonwealth's Compliance Plan for the U. S. Environmental Protection Agency (EPA)'s Final Rule governing Emission Guidelines for Existing Stationary Sources (the Clean Power Plan (CPP)) published October 23, 2015. PADEP's Notice appeared in the Pa. Bulletin dated September 12, 2015 and set a deadline for comments of November 12, 2015.

The PAPUC is the regulatory agency of the Commonwealth of Pennsylvania with the responsibility to ensure the provision of safe, adequate and reliable electric distribution service at fair and reasonable rates to all Pennsylvania ratepayers pursuant to the provisions of the Pennsylvania Public Utility Code, 66 Pa. C.S. § 101 *et seq.* A significant part of this obligation is to ensure that electric distribution companies (EDCs), subject to PAPUC jurisdiction, have procured or otherwise possess sufficient generation supply to meet their service obligations to the Commonwealth's 12.7 million residents. The PAPUC has been an active party in the EPA rulemaking proceedings relating to the CPP.

The PAPUC has also been engaged in working with the PADEP in the preparation of the Commonwealth's State Compliance Plan (SCP). The PAPUC is a member of a joint agency task force that also includes independent consultants, PJM Interconnection (the regional transmission operator (RTO)) (PJM) and other interested parties. The PAPUC has also been participating in the design of compliance options in conjunction with other states in the PJM region through the Organization of PJM States (OPSI).

The PADEP requested comments on five subject areas: (1) compliance targets/timeline; (2) participation in trading; (3) energy efficiency (EE) and renewable energy (RE); (4) least cost compliance and reliability issues and (5) vulnerable, over-

burdened communities and environmental justice concerns. The PAPUC is filing these limited comments on two subject areas to reinforce the concerns it raised in comments to the EPA's Proposed Rule on December 1, 2014.¹ These concerns relate to the CPP's impact on electric grid reliability, maintenance of fuel diversity, preserving the Commonwealth's position as a net energy exporter, development of renewable energy (RE) and EE and minimizing cost increases to customers. To that end, the PAPUC will focus its comments on the following two subject areas: Least Cost Compliance and Reliability and Energy Efficiency and Renewables.

II. LEAST COMPLIANCE AND RELIABILITY ISSUES

A. What Compliance Pathway Represents The Least Cost Option For The Commonwealth?

The PAPUC will continue to work with PADEP and other interested parties on an SCP that includes a least cost option as one of several objectives to be pursued.

B. How Can The Commonwealth Meet Its Objective Of Prioritizing Indigenous Resources?

C. How Can The Commonwealth Maintain A Diverse Fuel Mix?

D. How Can The Commonwealth Protect Its Position As A Net Energy Exporter?

The PAPUC interprets these three questions as inter-related in nature and responds accordingly. The PAPUC's position is that a key element of PA's SCP must be the preservation of existing benefits derived from the state's varied generation resources and fuel mix. If PA is able to design a state plan that accomplishes these objectives, the Commonwealth should be able to preserve its status as a net exporter of electricity.

¹ See Comments of PA Public Utility Commission at EPA Dkt. EPA-HQ-OAR-2013-0602.

Pennsylvania has a diverse energy profile. Pennsylvania energy sources encompass all forms of energy production including nuclear, coal, natural gas, waste-to-energy, hydroelectric and renewables.² Pennsylvania is the fourth largest coal producer in the U.S. and produced 68 million tons of coal (bituminous and anthracite) in 2011.³ The coal industry directly employs about 8,700 employees in 400 coal mines and indirectly supports about 32,800 jobs such as employment in the state's coal-fired power plants and the railroad industry.⁴ Pennsylvania's abundant coal reserves assure decades of reliable, low cost energy for the state and the region. Coal generation by approximately 40 PA-based coal-fired facilities amounted to 20,475 MW of capacity.⁵

Pennsylvania is also a national leader in the production of natural gas. Natural gas production in the Marcellus region exceeded 15 billion cubic feet per day in August 2014.⁶ Pennsylvania's Marcellus Region possesses the largest shale gas producing resources in the nation. Pennsylvania's annual gross natural gas production, primarily from the Marcellus Shale, exceeded 2 trillion cubic feet in 2012, a 72% increase over 2011 production. Pennsylvania's net energy generation by natural gas amounted to 6,300 GWh or 28% of the total generation in 2014.⁷

Nuclear generation also represents a significant portion of Pennsylvania's energy profile. Currently, there are five nuclear generation facilities operating in the state representing 7,200 GWh or 35% of net electricity generation.⁸

Pennsylvania also derives a growing but still relatively limited amount of electric generation from hydro-electric sources and renewables representing 330 GWh and 357

² <http://www.eia.gov/state/?sid=PA#tabs-3>.

³ <http://www.eia.gov/state/?sid=PA#tabs-3>.

⁴ <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-96943/Final%20PA%20Comprehensive%20Energy%20Analysis.pdf> at 34-35.

⁵ http://www.sourcewatch.org/index.php/Category:Existing_coal_plants_in_Pennsylvania

⁶ <http://www.eia.gov/todayinenergy/detail.cfm?id=17411>.

⁷ <http://www.eia.gov/state/?sid=PA#tabs-4>.

⁸ <http://www.eia.gov/state/?sid=PA#tabs-4>.

GWh respectively. These figures represent approximately 4.0% of Pennsylvania's electric energy generation.⁹

It is noteworthy that modeling projections produced by parties such as PJM, based on the proposed rule, demonstrate a continuing role for all current forms of generation. However, PJM projects, across 12 modeled scenarios (4 for OPSI, 8 for PJM), that between as little as 6,200 MW and 14,500 MW of coal generation capacity may be at risk for retirement based on cost-based bids submitted prior to the 2018/2019 delivery year.¹⁰ PJM's modeling stresses that the affordability of electricity under these regulatory scenarios will depend largely on two factors remaining constant--low gas prices and retention of the existing nuclear fleet.¹¹

Based on the CPP modeling analyses thus far conducted by PJM and other consulting sources, the PAPUC recommends the following general policy recommendations to accomplish the dual objectives of prioritizing indigenous resources and maintaining fuel diversity:

- PADEP should identify those coal generation units that combine the important features of low emissions, economic viability in the wholesale capacity/energy markets and longest remaining useful life. PADEP should design the SCP with an objective to retain these facilities as generation resources under the Building Block 1 (BB1) mechanism or in conjunction with other building blocks.
- PADEP should engage the resources offered by domestic research institutions to fully explore additional measures for protecting the most environmentally compliant coal facilities. The U.S. Department of Energy (USDOE) is working actively with universities and other institutions in PA on strategies to retain coal-fired generation including clean coal technology.

⁹ <http://www.eia.gov/state/?sid=PA#tabs-4>.

¹⁰ <https://www.pjm.com/~media/documents/reports/20150302-pjm-interconnection-economic-analysis-of-the-epa-clean-power-plan-proposal.ashx> at 93-94. Identified capacity at risk increases under a modelling scenario based on lowest cost resource. See PJM Economic Analysis at 93-95.

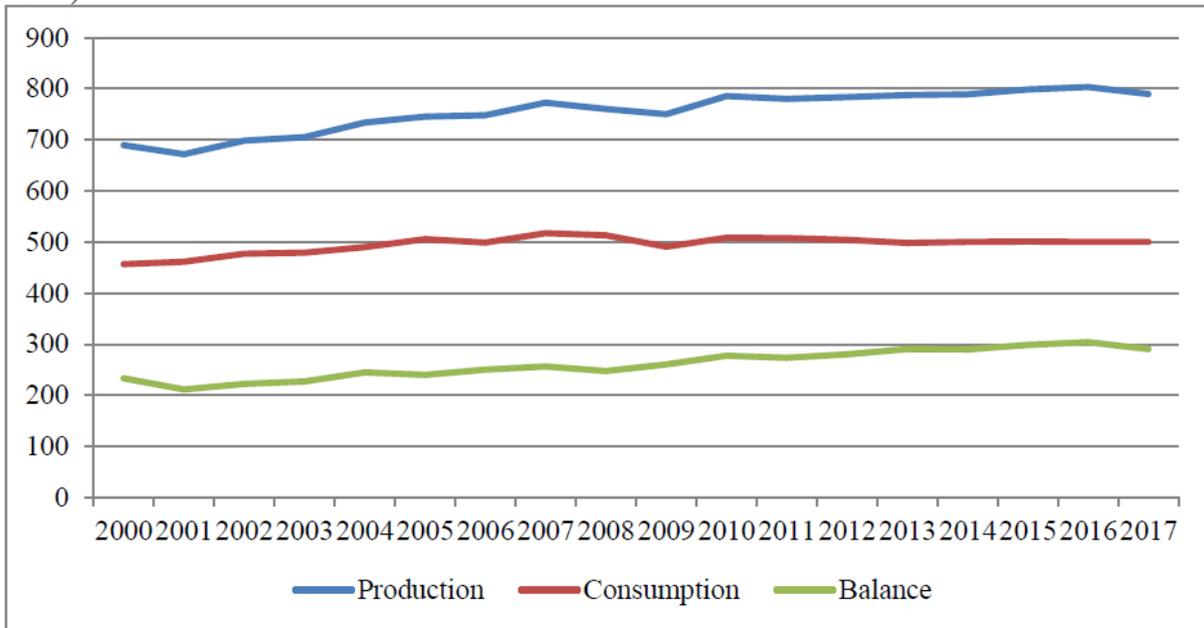
¹¹ *Id.* at 97.

- The EPA has determined that existing nuclear facilities will not be considered as a non-emitting resource under Building Block 3 (BB3) but new and expanded nuclear may be counted toward meeting a state's emissions target. Given the importance of retaining PA's existing nuclear fleet which may enhance long term reliability and a zero-emitting source, PADEP should design the SCP with a mechanism that incentivizes existing owners of nuclear units to retain these facilities at least through the compliance deadline of 2030. Although EPA chose not to recognize the carbon reduction contribution of existing nuclear resources, the successful compliance with CPP requirements within the PJM region may largely depend on the survival of the existing nuclear fleet.
- PADEP will need to rely largely on new and existing natural gas combined cycle (NGCC) generation as part of any SCP under BB2. The decision to include or not to include new NGCC under a mass-based approach will be critical. PA's largest potential energy resource is its shale reserves. The PADEP should design its SCP with a view toward achieving the correct balance of existing and new NGCC and working with NGCC developers and owners to ensure adequate pipeline infrastructure and gas supplies exist to meet the expected demand for these resources.
- PADEP should identify, with the assistance of the RE stakeholder community, the potential for expansion of qualifying onshore wind and solar facilities in PA in order to assess the realistic contribution that can be expected from the RE sector in the development of an SCP under either a mass or rate-based model. Design of an SCP that assumes more domestic RE will be available through 2030 than can reasonably be expected could result in PA not meeting its expected emissions targets.
- PADEP should engage both energy generating unit (EGU) and RE stakeholders to initiate discussions on how affected unit owners may either contractually or by another arrangement obtain necessary CO₂ credits/allowance benefits derivable from renewable resources.
- PADEP should actively engage EPA and relevant sectors to explore the potential for assessing whether non-best system of emission reduction (BSER) resources such as biomass, CHP and elimination of transmission and distribution line losses and transformer losses may contribute to the SCP.

By carefully designing the SCP with the above dual objectives in mind, the Commonwealth may be able to retain its position as a net energy exporter. Exhibit 4-9

below illustrates a comparison of electricity production and consumption from 2000-2017 for PA in trillions of BTUs:

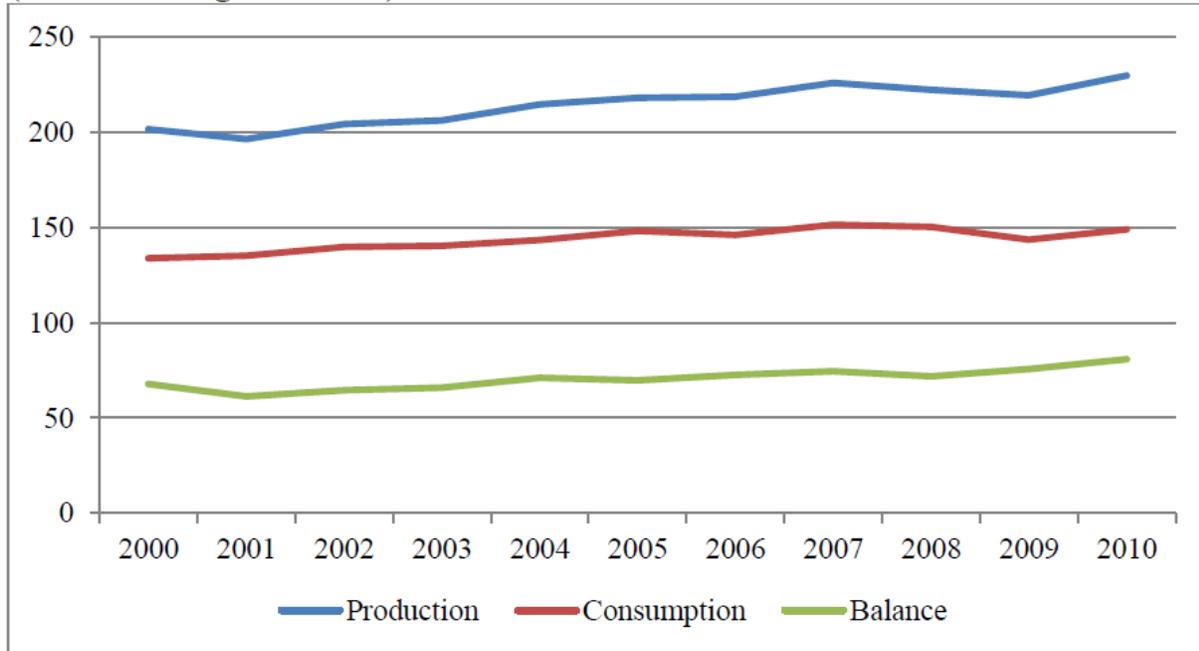
Exhibit 4-9. Electricity production and consumption: 2000 – 2017, Pennsylvania (trillions of BTU)



Source: Energy Information Administration

Exhibit 4-9 demonstrates a projected net excess of production over domestic consumption of approximately 300 trillion BTUs. Exhibit 4-10 below shows a 70 million MWh excess of production over consumption as of 2010 which presumably approximates net exports less internal use and line losses.

Exhibit 4-10. Electricity production and consumption in Pennsylvania: 2000 - 2017
(millions of megawatt hours)



Source: Energy Information Administration

PA’s position as a net exporter has been and continues to be a valuable asset to PJM’s ability to maintain regional reliability and efforts should be devoted to preserving this position. PADEP has the difficult task of balancing a number of competing concerns in meeting the established emission limits including the aforementioned objective of preserving utilization of indigenous resources and preserving fuel mix. Preserving PA’s status as a net exporter should receive equal weighting in the SCP design process.

E. How Can The Commonwealth Ensure Electric Reliability?

The PAPUC has a statutory obligation to maintain safe, adequate and reliable electric service at a reasonable cost to consumers. The PAPUC was quite critical of the EPA’s Proposed Rule because it largely failed to address concerns of electric grid reliability, the function of regional transmission operators, the function of wholesale capacity and energy markets, the role of the Federal Energy Regulatory Commission

(FERC), the Federal Power Act (FPA) and the role of state utility commissions especially in restructured states.¹²

In the Final Rule, the EPA addressed many of these criticisms through revision of the Proposed Rule that incorporate concerns from the electric utility sector, RTO/ISO sector and state commissions. Principal improvements in the Final Rule are as follows:

- EPA has determined that the appropriate regional level for quantification of the BSER must recognize the interconnected nature of the electric grid. The design of the BSER in the Final Rule corresponds with the current regional interconnections (Eastern, Western, Texas). EPA’s supporting analysis also recognizes the critical role of the RTO/ISOs and the North American Electric Reliability Council (NERC).¹³
- EPA has entered into a Memorandum of Understanding (MOU) with the FERC and the USDOE to allow for interagency consultation during the compliance process. EPA is expected to review the ongoing content and status of state compliance filings with FERC as the need arises.¹⁴
- EPA implemented a Reliability Safety Valve (RSV) mechanism into the Final Rule.¹⁵ While the RSV is only available on a short term basis, this was a major concern to the RTO/ISO community and state commissions.
- EPA revised its Interim Compliance timeline from 2020-2030 to 2022-2030 with a more attainable “glide-path” to compliance.¹⁶ This modification eliminated the “regulatory cliff” concern raised by many commenters.

The PAPUC has an ongoing concern about the ultimate impacts of a PA SCP on both reliability and electric rates to consumers. The PAPUC anticipates addressing this concern through ongoing involvement with PADEP staff and other parties, including independent consultants, academic institutions and PJM to carefully design compliance

¹² Comments of the Pennsylvania Public Utility Commission at 6, 15-26.

¹³ 80 FR 64738-64741 (2015).

¹⁴ 80 FR 64879 (2015).

¹⁵ 80 FR 64876-64877 (2015).

¹⁶ 80 FR 64828-64829, 64849 (2015).

scenarios that balance the many variables required by EPA's Final Rule—most importantly achieving the finalized emissions reduction targets established by EPA in a manner that preserves the reliable operation of the electric grid, does not negatively impact economic dispatch and minimizes rate impacts on customers. It should be noted that PJM produced an analysis dated July 2015 that identified potential risks to load deliverability, resource adequacy and potential voltage violations based on a very preliminary analysis of the Proposed Rule.¹⁷ PJM is in the process of producing an updated analysis based on the Final Rule. This analysis will revisit some of the initial assumptions contained in the earlier report.

In moving forward, the PAPUC makes the following recommendations to PADEP:

- PADEP should continue its outreach to impacted stakeholder groups for constructive input into development of the SCP on all issues including reliability. These groups include: electric and gas generators, gas pipelines, EDCs, RE providers, the DS EE sector, cities and municipalities and environmental and residential/industrial consumer interest organizations. While the PADEP listening sessions resulted in useful, non-specific suggestions, targeted stakeholder input may be more beneficial.
- PADEP should engage multiple modelling resources for developing the SCP and not just a single method. Different models allow for consideration of a variety of inputs and may produce results that another more limited modelling scenario may not capture. To date, PADEP and PAPUC have considered modelling scenarios from its NGA-sponsored consultant Resources for the Future and PJM. The interplay between these two entities has been informative. PADEP may want to consider engaging additional consulting input should the need arise. Modeling input will be critical at important decision points such as selection of a rate vs. mass mechanism, selection of a trading/no trading scenario, inclusion or exclusion of NGCC, treatment of credits/allowances, etc.
- PADEP and PAPUC should jointly engage in ongoing consultation with PJM who will play a critical role in SCP implementation. PJM has, to date,

¹⁷ <http://www.pjm.com/~media/documents/reports/20150731-pjm-reliability-scenario-studies-related-to-the-proposed-cpp.ashx>. at 6-9.

provided a comprehensive but very preliminary analyses of the impact of the Proposed Rule on the region and is currently analyzing the impact of the Final Rule. PJM will be involved in SCP development with all 13 states in the RTO footprint and will be in the best position to identify, on an “early warning” basis, potential reliability problems prior to SCP filing.

- PADEP should maintain communications with other PJM states in order to monitor and coordinate the design of the SCP. Transparency between those states who intend to file in compliance with the rule may be useful in avoiding needless implementation issues later for PJM and the affected states.
- PADEP should maintain an ongoing dialogue with EPA, especially the Region III Office, as development of the SCP proceeds. EPA has been on record at the recent NGA Mid-Term Policy Academy that it is open to discussing, prior to filing, concerns over such issues as development of a trade ready platform, inclusion/non-inclusion of NGCC, treatment of leakage, adoption of the Model Rule/Federal Rule or portions of same and other critical decision points.

III. ENERGY EFFICIENCY AND RENEWABLES

A. How Can The Commonwealth Best Use RE In Meeting Its Compliance Obligation?

The Commonwealth currently has a relatively limited RE market that is concentrated in the wind, hydroelectric and biomass sectors. Renewables including hydroelectric constitute about 4.4% of Net Summer Capacity and about 2.9% of domestic generation.¹⁸ The contribution from RE in the state is projected to grow to 7.3% by 2017.¹⁹ With the expiration of certain federal tax incentives for wind in 2014, development of wind renewables has slowed.²⁰ Tax incentives for solar renewables will decrease by two-thirds for commercial projects and will be eliminated for residential projects by the end of 2016 which may slow the development of these resources domestically despite that the costs of solar deployment have fallen.²¹ The projected

¹⁸ <http://www.eia.gov/renewable/state/Pennsylvania/>.

¹⁹ <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-96943/Final%20PA%20Comprehensive%20Energy%20Analysis.pdf> at 59.

²⁰ <http://www.awea.org/Advocacy/Content.aspx?ItemNumber=797>.

²¹ <http://www.seia.org/policy/finance-tax/solar-investment-tax-credit>.

increase in RE electricity generation will likely derive from different types of renewable sources with wind being the predominant new source.²²

RE in PA has been driven largely by legislative initiative. The Alternative Energy Portfolio Standards (AEPS) Act of 2004 requires electric distribution companies (EDCs) and electric generation suppliers (EGSs) to supply 18 percent of electricity using alternative energy resources by 2021.²³ Qualifying resources are divided between Tier I and Tier II.²⁴ The percentage of Tier I (8%, with 0.5% of that percentage from solar) and Tier II (10%) that must be included in sales to retail customers gradually increases over the compliance period. EDCs and EGSs meet their AEPS requirements through the direct purchase of alternative energy credits (AECs) in amounts corresponding to the percentage of electricity that is required from alternative energy sources.²⁵

For the 2013 reporting year (June 1, 2012 – May 31, 2013, which represents the most recent report available), all EDCs and EGSs complied with the AEPS requirements by retiring the required number of Tier I, Tier II, and Solar AECs needed to meet their obligations.²⁶ As the PAPUC noted in its comments to EPA, meeting the compliance

²² <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-96943/Final%20PA%20Comprehensive%20Energy%20Analysis.pdf> at 63.

²³ 73 Pa. C.S. § 1648.1 (2008).

²⁴ Qualifying Tier I resources include: solar (photovoltaic and thermal), wind, low-impact hydropower, geothermal energy, biologically derived methane gas, fuel cells, biomass energy, coal mine methane, instate existing large-scale hydropower, instate located generation using by-products of pulping process and wood manufacturing. Qualifying Tier II resources include: waste coal, distributed generation systems (small scale CHP), demand-side management, large-scale hydropower, municipal solid waste, integrated combined coal gasification technology.

²⁵ One AEC represents one megawatt hour (MWh) of electricity generated from a qualified alternative energy source and can be purchased separate from the electricity. Credits generated by qualifying facilities located anywhere within PJM can be used for compliance in the year they were generated or in the two subsequent years.

²⁶ http://www.puc.pa.gov/electric/pdf/AEPS/AEPS_Ann_Rpt_2013.pdf.

Compliance is based on alternative energy credits (AECs). An AEC is equal to a megawatt-hour of qualified generation and credits are the property of the generator unless expressly transferred. Banking of excess credits is allowed for up to two years, thus an AEC's useful life is three years, the year it was produced and the two subsequent years for which it can be banked. AECs are tracked by the PJM General Attribute Tracking System (GATS).

targets for renewables contained in the Final Rule may require legislative changes to AEPS to increase the contribution of RE to retail generation supply portfolios if AEPS is to be considered part of a Compliance Plan.

The PAPUC has actively supported RE (through the AEPS) as a cost-effective and environmentally sound method of reducing unneeded generation, creating diversity of energy supply and promoting job creation. The AEPS could form the basis for expanded deployment of RE through the Interim Compliance Period through 2030.

The PAPUC recognizes that RE is an important component of SCP. The CPP Final Rule determined that new RE, as a component of BB3, is adequately demonstrated as a BSER for the following reasons:

- Substituting generation from expanded RE generating capacity for generation from affected EGUs is a technically feasible and cost-effective means of reducing emissions and reducing generation.²⁷
- Owners of affected EGUs have the ability and the incentive under the CPP to invest in RE generation as a means of reducing emissions and such investment should have a stimulating effect on the RE market.²⁸
- The development of a credit-based or allowance-based CO₂ trading system will provide additional incentives for affected EGUs to reduce emissions economically taking into account the value of the emission credit or allowance.²⁹
- Generation from wind turbines and solar voltaic installations does not produce solid waste or require cooling water, a better environmental outcome than most existing fossil-fired generation.³⁰
- Although the variable nature of renewable generation requires special consideration from grid operators, these parties have proven capable of managing

²⁷ 80 FR 64747 (2015).

²⁸ *Id.*

²⁹ *Id.*

³⁰ 80 FR 64748 (2015).

electricity supply including reliance on renewable resources with no adverse grid consequences.³¹

The PAPUC asserts that EPA's recognition of new and expanded RE, within BB3, as a component of the BSER is a positive step and may stimulate the growth of renewable resources primarily onshore wind and solar. Expansion of the RE contribution to PA's future generation mix under a CPP SCP would, if correctly implemented, advance the objectives of maintaining system reliability, promoting supply diversity, offsetting fossil generation costs, reducing fossil generation carbon emissions and promoting job creation. Further, the PAPUC believes that the Commonwealth can best utilize RE by more actively incorporating early stakeholder input from the renewable energy sector in the design of its SCP.

At this stage, it is too early to determine the precise scope of RE contribution to an SCP. However, once DEP has decided on the critical decision points such as the mass vs. rate model, treatment of existing and new NGCC plants, trading/no trading and other important components, it should consider the following steps: (i) engage the RE community on potential measures for incorporating renewable resources into an SCP; (ii) assess the feasibility of establishing a CO₂ credit/allowance trading mechanism to stimulate RE development; and (iii) initiate a dialogue with owners of affected units on their suggestions for interfacing with RE providers as part of a larger compliance effort.³² In doing so, however, the PAPUC reminds PADEP of the variable nature of RE. Overall, concern for maintaining a diverse mix of resources is preferred over too heavy reliance on RE.

³¹ *Id.*

³² The CPP provides for affected units to incorporate the benefits of RE in a number of ways including: (i) investment in RE projects as either new build or acquisition; (ii) bilateral contracts with RE providers; (iii) purchase of emission reduction credits (ERCs) or allowance equivalents; and (iv) other methods of offsetting emissions through incorporation of RE resources.

B. How Can The Commonwealth Best Utilize EE In Meeting Its Compliance Obligations?

The EPA removed EE as a separate building block (BB4) in the Final Rule. EPA recognized that it would be difficult, within the legal scope of CAA 111(d), to impose EE requirements upon affected units so it included EE as another of several potential measures that a state could consider as part of the design of its compliance plan.³³ The EPA allowed demand side EE (DSEE) as a non-BSER measure that reduces CO₂ fossil fuel fired generation.³⁴

The PAPUC endorses utilization of DSEE as part of the Commonwealth's SCP. The PAPUC has significant experience with energy efficiency and can assist in that task. The PAPUC is mandated by Act 129 of 2008 to require the seven largest EDCs to implement energy efficiency and conservation (EE&C) programs.³⁵ Specifically, Act 129 requires each EDC, with at least 100,000 customers, to adopt a plan to reduce energy demand and consumption within its service territory.³⁶ Each EDC, through its approved plan, was required to reduce electric consumption by May 31, 2011, by at least 1% of its expected consumption for June 1, 2009 through May 31, 2010 as a base period. By May 31, 2013, the total annual consumption was to be reduced by a minimum of 3% of its expected consumption for the June 1, 2009 through May 31, 2010 base period. Also, by May 31, 2013, each covered EDC's peak demand was to be reduced by a minimum of 4.5% of the EDC's annual system peak demand in the 100 hours of highest demand, measured against the EDC's peak demand during the period of June 1, 2007 through

³³ 80 FR 64776 (2015).

³⁴ 80 FR 64756-64757 (2015).

³⁵ 73 Pa. C.S. § 1648.1 (2008); Duquesne Light Company (Duquesne); PECO Energy Company (PECO); PPL Electric Utilities Corporation (PPL); and the FirstEnergy companies – Metropolitan Edison Company (Met-Ed), Pennsylvania Electric Company (Penelec), Pennsylvania Power Company (Penn Power), and West Penn Power Company (West Penn). The PAPUC regulates several smaller electric utilities that are not subject to the Act 129 standards.

³⁶ http://www.puc.pa.gov/filing_resources/issues_laws_regulations/act_129_information/electric_distributors_on_company_act_129_reporting_requirements.aspx.

September 30, 2007. To date, all of the EDCs met or exceeded the May 31, 2013 requirements.

As of May 31, 2013 (end of Program Year 4 and Phase I), the seven PA EDCs had collectively saved 5,403,370 MWh per year and 1,540.61 MW of peak demand capacity. These savings are directly attributable to the EE&C programs implemented by the seven EDCs. Individually, all EDCs exceeded their 2013 compliance targets for energy savings and demand reductions as established by the Commission.³⁷

At least once every five years, the PAPUC is to evaluate the cost-effectiveness of the program and set additional incremental consumption and peak demand reductions if they are cost-effective. Cost-effectiveness is determined by a total resource cost test, which is a standard test that is met if, over the effective life of each plan, not to exceed 15 years, the net present value of the avoided monetary cost of supplying electricity is greater than the net present value of the monetary cost of energy efficiency conservation measures. This test does not include other benefits, such as CO₂ reductions.

In 2012, the PAPUC set new incremental targets for consumption reductions that each large EDC must meet by May 31, 2016. These targets range from 1.6% for West Penn to 2.9% for PECO.³⁸ These targets were based on the cost-effective energy efficiency potential, the costs of the program and the available budget for each EDC. Note that these figures do not represent annual targets but are three-year cumulative reduction requirements.

The Commission recently issued its Act 129 Phase III Final Implementation Order on June 19, 2015. This Final Implementation Order established additional incremental

³⁷*Id.*

³⁸ The other EDC targets are: Duquesne 2.0%; Met-Ed 2.3%; Penelec 2.2%; Penn Power 2.0%; PPL 2.1%.

reductions in electric consumption and peak demand for the period of June 1, 2016 through May 31, 2021.³⁹ The PAPUC notes that this Phase III 5-year program period will run parallel with the period during which PADEP must develop and file its SCP with EPA and therefore DEP could potentially incorporate the projected EE benefits from the final phase of the program and continue inclusion on a going forward basis.

The PAPUC encourages PADEP to examine whether EE savings from the Act 129 program could be included in the SCP as an additional tool to achieve PA emissions targets. Utilization of an EE component may depend on whether a mass or rate-based system is chosen. Changes to Act 129 evaluation measurement and verification (EM&V) procedures may be required based on EPA's draft EM&V proposal issued August 3, 2015. Further, legislative amendments to Act 129 cannot be ruled out if the greater EE benefits are projected to be part of the SCP through the interim compliance period leading up to the 2030 implementation date.

The PADEP should also seek input from EE providers on other types of developing EE technologies that could contribute to an overall emissions reduction program in the residential and commercial sectors subject to appropriate measurement, verification and conversion to quantifiable emissions reductions. The PAPUC maintains an active registry of energy conservation service providers that can serve as source for input.⁴⁰ Additionally, state building codes designed to foster energy efficiency should be examined for potential contribution to an SCP.

The PAPUC would also encourage PADEP to invite input from the major EDCs who are responsible for implementation of Act 129 EE plans. The PA EDCs have invested significant funding in the Act 129 program and have cooperated with the PAPUC to develop an effective Act 129 procedure that includes: (1) retention of a State-

³⁹ *Phase III Final Implementation Order*, Docket No. M-2014-2424864 (Order entered June 19, 2015).

⁴⁰ http://www.puc.pa.gov/Electric/pdf/Act129/CSP_Registry.pdf

Wide Evaluator for EDC EE program measurement and verification; (2) development of a Technical Reference Manual (TRM) for guidance to EDC EE programs most recently updated to apply for the duration of Phase III; (3) oversight of the training and certification program for weatherization installation and audits; (4) procurement and installation of smart meters by PA EDCs; and (5) coordination with the Low Income Usage Reduction Program (LIURP). The EDC community has accumulated considerable knowledge and experience through these programs that should be tapped as a resource by PADEP in its development of an EE component to the SCP.

C. Should The Commonwealth Participate In The Clean Energy Incentive Program (CEIP)?

The PAPUC will continue to work with PADEP on analyzing the potential for participation in the CEIP. Should PADEP determine to seek approval for participation in the CEIP, the PAPUC notes that existing EDC low-income programs would potentially qualify for matching credit in the CEIP under both the mass and rate-based systems.

D. Should The Commonwealth Set Aside Allowances Or Credits To Participate In The CEIP?

The PAPUC will continue to work with PADEP on analyzing the potential for participation in the CEIP including the set aside of allowances or credits to participate in CEIP.

E. What Other Energy Conservation Measures Could Be Considered?

The EPA has identified a number of other technologies (including DS EE discussed previously) that are non-BSER in nature but represent potential emissions reduction opportunities.⁴¹ The PAPUC highlights those additional technologies that should be considered as follows:

⁴¹ 80 FR 64756-64758 (2015).

- Non-zero emitting RE technologies such as qualified biomass from new or expanded facilities that combust biogenic portions of municipal solid waste and produce fewer emissions than fossil fuel generation facilities. The EPA will be issuing further technical guidance on how these resources should be utilized.
- New or expanded combined heat and power (CHP) facilities that produce fewer emissions than fossil fuel generation facilities. The EPA will be issuing further technical guidance on how these resources should be utilized.
- Reduction in transmission and distribution line losses and constraints/congestion between points of generation and consumption by end-users. These systemic grid improvements allow the same overall demand for electricity services to be met with a smaller overall quantity of electricity generation. This is a cost-effective means of emissions reduction insofar as the regional RTO, PJM, may be able to factor these line loss and constraints/congestion reductions into its CAA 111(d) compliance modelling efforts. Conservation voltage reduction programs, voltage and VAR optimization programs and more efficient transformers are examples of such measures.

While not all of these non-BSER technologies result in zero emissions, the EPA recognizes these methods of emission reduction as having potential value in the development of CAA 111(d) compliance plans. PADEP, depending on the compliance model chosen, should consider the energy conservation potential of these sources.

IV. CONCLUSION

The PAPUC appreciates the opportunity to comment in this proceeding and requests that its suggestions be considered in the development of the State Compliance Plan.

Dated: November 12, 2015

Respectfully submitted,

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