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I. INTRODUCTION

Intervenor Ohio Coal Association ("OCA") filed its Initial Brief on March 6, 2019 as did the remaining parties in these cases. OCA is aligned with the PUCO's Staff, OCC, the Ohio Manufacturer's Association, the Industrial Energy Users, Kroger, Direct Energy and Interstate Gas Supply in opposing AEP Ohio's requested relief in these cases. OCA, in its Initial Brief, has fully addressed the legal and factual issues raised in AEP Ohio's Initial Brief which largely reiterates positions previously advanced in its applications. AEP Ohio's few supporters are environmental groups advancing their own agenda for renewable energy and adding nothing new to AEP Ohio's case in chief. Accordingly, OCA, in this Reply Brief, will simply summarize the salient legal and factual conclusions mandated by the record in these cases.

There are three unalterable conclusions in these cases:

First, AEP Ohio has unequivocally conceded that it cannot establish "need" for these facilities under R.C. 4928.143(B)(2)(c) pursuant to this Commission's precedent, i.e., that need is established only when, based on resource planning projections, generation needs cannot otherwise be met through the competitive market. Since there is no "need" for the projects based on resource planning, the standard that defines "need" under R.C. 4928.143(B)(2)(c), AEP Ohio cannot satisfy the predicate condition under R.C. 4928.143(B)(2)(c), and no nonbypassable surcharge is merited. The cases should be similarly dismissed on this basis.

Second, if AEP really believes the projects are economically beneficial or "desired" by customers irrespective of costs, it is free to develop the projects at its benefit and risk rather than to invoke the limited exception of R.C. 4928.143(B)(2)(c) to force both captive and "shopping" customers to subsidize and guarantee the projects.

Third, the fraction of AEP Ohio's customer base that "want" or "desire" renewable energy have a myriad of options through "green tariff" alternatives and renewable products available in the competitive market. If these customers want renewable energy, they can pay for it on their own accord. There is no justifiable reason to force over 92% of the customer base to subsidize the "desire" of less than 6% of the customer base.

II. THE PREDICATE CONDITION OF "NEED" UNDER R.C. 4928.143(B)(2)(c)

1. Contrary to AEP Ohio's contention that R.C. 4928.143(B)(2)(c) is an "open road" to re-regulation in Ohio, R.C. 4928.143(B)(2)(c) presents a very narrow and restricted exception to the State scheme to deregulate utility generation resources to permit and implement generation resource competition. AEP Ohio's proposal in these cases would permit AEP Ohio to re-enter the regulated generation environment to contract for unneeded solar generation capacity and energy, at total costs in excess of the competitive market, replete with artificial tax credits and incentives to subsidize the facility and pass 100% of the costs on to both jurisdictional captive customers and shopping customers through the nonbypassable surcharge. This proposal, viewed in its entirety, violates R.C. 4928.143(B)(2)(c) and is inconsistent with the State's stated policy under R.C. 4928.02.

2. R.C. 4928.143(B)(2)(c) expressly provides for six (6) predicate conditions to satisfy the narrow exception of the statute. These predicate conditions are:

- The specific generating facility at issue must be directly *owned* or *operated* by the EDU.
- The specific facility must be newly used and useful on or after January 1, 2009 and must be *sourced* through a qualifying *competitive bid process*.
- The EDU may establish a nonbypassable surcharge to cover *costs of the utility specified in the application*.

- No surcharge shall be authorized *unless* the Commission first determines in the proceeding that there is a *need* for the facility proposed *based on resource planning projections* submitted by the EDU.
- The EDU shall dedicate to Ohio consumers the *capacity* and *energy* and the *rate* associated with the *cost* of that *specific facility*.
- Before authorizing the surcharge, the Commission may consider, as applicable, the effects of any decommissioning, deratings and retirements.

3. This Commission has previously ascribed a narrow meaning of the word "need" consistent with the unambiguous provisions of R.C. 4928.143(B)(2)(c). The Commission has held that "need" is established only when, based on resource planning projections, generation needs cannot be met through the competitive market. *In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company For Authority to Establish a Standard Service Offer*, PUCO Case Nos. 11-346-EL-SSO, et al., at p. 39 (Dec. 14, 2011) ("While Section 4928.143(B)(2), Revised Code provides the Commission with authority to order construction of new generation facilities in Ohio, such new generation or capacity projects will only be authorized when generation needs cannot be met through the competitive market.") See also *In re Long Term Forecast Report of Ohio Power Co.*, PUCO Case Nos. 10-501-EL-FOR and 10-502-EL-FOR (Jan. 9, 2013) ("The Commission noted that it would first look to the market to build needed capacity and that new generation or capacity projects would only be authorized under Section 4928.143(B)(2), Revised Code, when generation needs cannot be met through the competitive market.").

4. Contrary to AEP Ohio's position, "need" is well-defined in the statute. "Need" is based on "resource planning projections". "Need" is determined with reference to the *specific* facility at issue and the *capacity* and *energy* of that *specific* facility must be dedicated to the Ohio consumers that bear the nonbypassable surcharge. "Need" is not dependent on the nature of the

generation - renewable or otherwise, is not dependent on the relative costs or benefits of the generation source, is not dependent on "wants" or "desires" of customers and is not dependent on purported "economic development" benefits.

5. The Commission's Staff position is entirely correct. The Commission is a creature of statute and has no authority to act beyond that conferred by statute. *Dayton Communications Corp. v. Pub. Util. Comm.*, 64 Ohio St. 2d 302, 307 (1980). The Commission must apply R.C. 4928.143(B)(2)(c) as it is written and cannot expand the statute beyond the terms of the statute itself. (See Staff Initial Brief pp. 2-3).

6. There is no legitimate basis for AEP Ohio's attempt to expand the meaning of "need" beyond that provided in the statute itself. R.C. 4928.143(B)(2)(c) is unambiguous - "need" is based on resource planning projections. The Commission cannot "read words into or out of that statute but must accept the enactment of the General Assembly as it stands." *State v. Stevens*, 161 Ohio St. 432, 435 (1954); *State ex rel. Solomon v. Board of Trustees*, 72 Ohio St. 3d, 62, 65 (1995). The Commission "must give effect to the plain meaning of the words used in a statute, and ". . . must not modify an unambiguous statute by adding or deleting words." *State v. Steele*, 138 Ohio St. 3d.1, 4, 2013 - Ohio - 2470 at ¶17 (2013).

7. Contrary to AEP Ohio's contentions, the "Turning Point" decision is binding precedent with regard to the Commission's conclusion that "need" under R.C. 4928.143(B)(2)(c) is established only when, based on resource planning projections, generation needs cannot be met through the competitive market. The statute has not changed. There is no basis to argue that the Turning Point decision merely represents the policy views of a prior Commission and can be modified or changed.

8. AEP Ohio's assertion that "need" is satisfied by customers "wants" or "desires" for renewable energy is hypocritical. Significantly, AEP Ohio itself unilaterally imposes at least five (5) conditions to its proceeding with its own proposal for the two specific facilities at issue.

These conditions are:

- The PUCO must approve the REPAs as prudent in their entirety.
- The PUCO must find the requisite "need" for these two specific solar facilities under R.C. 4928.143(B)(2)(c).
- The PUCO must approve the requested nonbypassable surcharge covering claimed "costs" for the 20 year life of the REPAs.
- In approving the nonbypassable surcharge, the PUCO must allow recovery of the proposed debt equivalency charge - a cost of over \$110 million over the twenty year life of the REPAs.
- The PUCO must allow recovery of the requested capacity performance assessment charge. (OCA Ex. 2, REB - 1, pp. 1, 8).

Absent Commission acceptance of these unilateral pre-conditions, AEP Ohio will not proceed with its own proposal and the REPAs will terminate. Accordingly, it is apparent that AEP Ohio unilaterally conditions the purported "need" for the two solar projects at issue on cost recovery acceptable to AEP Ohio.

9. There is no barrier to another affiliate of AEP - AEP Energy, AEP Renewables or another affiliate - to develop renewable energy projects, or other energy generation resources, in the competitive market. If AEP really believes the projects are economically beneficial or "desired" by consumers, it is free to develop the projects at its benefit and risk rather than to invoke the limited exception of R.C. 4928.143(B)(2)(c) to force captive customers to subsidize and guarantee the projects.

**III. THE RECORD UNEQUIVOCALLY ESTABLISHES
THAT THERE IS NO CAPACITY OR ENERGY NEED FOR
THE PROJECTS AT ISSUE BASED ON THE COMPANY'S
OWN RESOURCE PLANNING PROJECTIONS.**

10. AEP Ohio unequivocally admits that there is no need for supply of capacity and energy in the AEP Ohio load zone and disclaims that additional solar or wind generation resources are necessary to meet the benchmarks of R.C. 4928.24. (AEP Ex. 2, Amendment at 3.) Nor is AEP Ohio proposing that there is a traditional integrated resource planning need (IRP) for this generation. *Id.*

11. The Commission Staff independently reviewed AEP Ohio's LTFR and confirmed that there is no capacity or energy need for the subject facilities based on resource planning projections. Staff Witness Siegfried confirmed that AEP Ohio does not need Renewable Energy Credits (RECs) or Solar RECs from a proposed 900 MW of renewable energy resources to meet the RPS mandates. (Siegfried, Staff Ex. 1, pp 2-4). Staff Witness Benedict confirmed that AEP Ohio does not need capacity or energy from the projects to serve its customers. The PJM market is more than adequate to serve the Company's needs. (Benedict, Staff Ex. 2).

12. As Staff Witness Benedict explained, a distinct step in the IRP process is to determine whether sufficient resources exist to serve demand including a reasonable reserve margin. Staff reviewed AEP Ohio's LTFR and concluded there was no need for capacity or energy to serve the AEP Ohio service load. Staff concluded that PJM's most recent Base Residual Auction in May, 2018 resulted in a reserve margin of 21.5% well in excess of the target of 15.8%. Further, PJM's Reliability Pricing Model (RPM) has consistently procured capacity at levels exceeding standards for resource adequacy. Staff independently confirmed AEP Ohio's admission that the PJM Market more than adequately serves AEP Ohio's capacity, energy and reliability needs. (Staff Ex. 2, pp. 7-8).

13. Given that there is no demonstrated "need" for the proposed projects based on resource planning, there is no basis to proceed to next steps to determine whether the specific projects proposed are the "least cost resource option." "Least cost resource options" could include considerations such as cost, flexibility, environmental attributes, dispatch availability, fuel diversity and economic impact. (Staff Ex. 2, pp. 4-8). However, AEP Ohio attempts to put the "cart before the horse." There is simply no basis to consider options as "least cost resource options" absent a demonstrated "need" for capacity and energy resources in the first place. (*Id.*, p. 8).

14. Staff's position is clearly consistent with R.C. 4928.143(B)(2)(c) which requires a predicate showing of "need" based on resource planning projections and with prior Commission precedent. (Benedict, Vol. VIII, 2292, 2317). The position also makes good common sense. There is no basis for an EDU to proceed with costly resource facilities under R.C. 4928.143(B)(6)(c) when there is no demonstrated "need" for the facilities to serve capacity or energy demands in the first place. Staff's position is supported by the majority of stakeholders in this case. See OCA Witness Brown (REB Ex. 1, pp. 5-7, 12-13, 30) and OCA Witness Medine, (OCA Ex. 3, pp. 3, 6-10), OCC Witness Lesser (OCC Ex. 18, pp. 4, 6-8), IGS Witness Joseph Haugen, (IGS Ex. 10, p. 5); and IGS Witness Matthew White (IGS Ex. 12, p. 17); IEU Witness Kevin Murray (IEU Ex. 1, p. 5, KMM-2); OMAEC Witness John Seryak (OMAEG Ex. 16, p. 8); Kroger Witness Justin Bieber (Kroger Ex. 4, p. 5).

15. In short, by AEP Ohio's own admission and as unequivocally confirmed by the Staff and Intervenors, AEP Ohio cannot demonstrate any "need" for the projects based on resource planning projections. AEP Ohio has wholly failed to satisfy the predicate condition of

R.C. 4928.143(B)(2)(c) and these cases should be summarily dismissed and the requested relief denied. The remainder of AEP Ohio's contentions are irrelevant.

IV. THE PJM MARKET IS A COMPETITIVE MARKET THAT PROVIDES DIVERSE, RELIABLE AND EFFICIENT ENERGY RESOURCES. THERE IS NO BASIS TO INVOKE THE LIMITED EXCEPTION OF R.C. 4928.143(B)(2)(c) TO FORCE CAPTIVE CUSTOMERS TO GUARANTEE AND SUBSIDIZE THE PROPOSED RENEWABLES PROJECTS.

16. AEP Ohio's own witnesses agreed that the PJM Market is a competitive market providing a diverse resource mix of coal-fired, natural gas-fired, nuclear and renewables resources. (Allen, Vol. I, 269). The PJM Market addresses flexibility, resource diversity, reliability and ancillary services. (*Id.*, 270). The PJM Market has 195,000 MW of installed capacity - more than enough capacity to meet demand of 168,000 MW. (Ali, Vol. II, 427). Across the load, new generation resources are being developed regardless of LMP pricing consideration. (Ali, Vol. II, 437).

17. Generation resources within the PJM Market are diverse, currently including 33% coal-fired, 33% natural gas-fired, 18% nuclear and 6% renewables including wind and solar. (Medine, OCA Ex. 3, Attachment ESM-3, pp. 9-10; Benedict, Vol. VIII, 2375; Allen, Vol. I, 269). Coal-fired generation is the "backbone" of the PJM capacity market. PJM employs 56,000 MW of coal-fired capacity which is over 20% of the entire U.S. coal fleet. (Medine, OCA Ex. 3, Attachment EJM-3, p. 2).

18. Renewable generation resources have an advantage of zero fuel costs but cannot contribute materially to PJM system capacity, flexibility, load regulation or other ancillary requirements. These resources are, by nature, intermittent resources dependent on location, wind pattern and sunlight. (Medine, OCA Ex. 3, Attachment ESM-3, pp. 4, 9).

19. AEP Witness Ali conceded that the proposed solar projects will not meaningfully impact rate stability in the PJM Market given the projects are only 1/2% of PJM installed capacity. (Vol. II, 416). He testified that the PJM Market is an efficient market where the most cost-effective units are dispatched first. (Vol. II, 418) Renewable resources cannot, and will not, displace the capacity of baseload units because of their intermittent nature but will displace energy produced by baseload units depending on the availability of the renewables resources. (*Id.*, 418). There will still be required baseload provided spinning reserve when renewable resources are not available. (*Id.*, 418-419).

20. Renewables are not expected to meaningfully impact frequency response, voltage regulation, ramping, load following or reserve requirements of the system because of the resource variability and intermittent nature. Mr. Ali did not consider either the benefit nor the liabilities of these ancillary system requirements in his LMP analysis. (Vol. II, 419-420). His analysis included no analysis of capacity impact at all and was focused solely on the energy impacts. (*Id.*, 422). Renewables are not valued for capacity benefits and PJM discounts renewable capacity values. (*Id.*, 422, 424). Mr. Ali did not consider "uplift" costs, which routinely apply when units are dispatched for reliability purposes, even though "uplift" costs definitely result in a loss of revenues in the system. (Vol. II, 417, 453). In fact, renewables are a detriment to the system since PJM is required to carry higher reserves to compensate for the inherent variability of renewables resources. (Ali, Vol. II, 453, 459). See also OCA Witness Brown (OCA Ex. 2, REB Ex. 1, pp. 47, 50-51).

21. Renewables resources are heavily subsidized through the Investment Tax Credit and Production Tax Credit. The PTC generates \$24/MWH for wind and \$12/MWH for solar. The ITC generates fixed contributions for utility investments. Given these tax incentives,

coupled with zero fuel costs, renewables will be automatically dispatched displacing available energy output from baseload units. (Ali, Vol. II, 413). Wind production receives the PTC at \$24/MWH even overnight when demand diminishes and can be dispatched at zero energy or even negative energy prices. This adversely impacts baseload operation and distorts the market. (Medine, Vol. VII, 1928, 1930, 1945; Brown, OCA Ex. 2, REB Ex. 1, pp. 52-55).

22. Renewable resources are also subsidized by state sponsored Renewable Energy Portfolio Mandates. This is true in Ohio as well as Ohio has implemented mandatory portfolio benchmarks in R.C. 4928.64. (Medine, Vol. VII, 1928). Significantly, AEP Ohio does not attempt to justify the REPAs proposed as necessary to meet these portfolio requirements. AEP Ohio has satisfied benchmarks and will do so for the next ten (10) years or more. (Allen, Vol. I, 117, 160, 210; Brown, OCA Ex. 2, REB Ex. 1, pp. 12-13).

23. AEP Ohio asserts that Ohio is a net importer of energy and there is a need for new, in -state renewable generation. The fact of the matter is that Ohio has been a net importer of energy for years, before and after deregulation. (Allen, Vol. I, 99, 101 -102, 210). Furthermore, in-state generation resources have declined in large part due to premature retirement of in-state coal generation units by electric utilities including AEP. (Medine, Vol. VII, 1629).

24. In any event, the Ohio General Assembly in Senate Bill 310 eliminated the in-state mandate for renewables in the RPS. These in-state mandates were eliminated due to the excessive cost of in-state renewables. Accordingly, the Ohio General Assembly has not seen fit to mandate in-state renewables resources. (White, IGS Ex. 12, pp. 6-8; Allen, Vol. I, 77).

25. AEP Ohio concedes that the PJM Market offers market driven alternatives to supply renewable generation resources. Merchant generators can, and do, make their own

choices for generation which depend on relative economics and a wide variety of economic considerations. (Allen, Vol. I, 276). Nothing precludes AEP Energy, AEP Renewables or another affiliate from entering into bilateral arrangements, joint ventures or self-construction to build and market renewables resources. (Allen, Vol. I, 155, 163, 181, 275). (Lesser, OCC Ex. 18, pp. 13-14). Utility scale resources can be, and are being developed, without the REPA artifact. (Medine, Vol. VII, 1958, 1963).

26. OCA Exhibits 4 and 5 reflect both currently operating and pending wind and solar projects in Ohio. Utility scale wind and solar projects are subject to the siting authority of the Ohio Power Siting Board (OPSB). There are 327 operating wind turbines in Ohio providing 669.8 MW of generation. There are 794 potential turbines pending OPSB approval providing 1910 MW of capacity. There are also 1,249.9 MW of solar facilities pending for OPSB approval - including Hardin Solar, Alamo Solar, Angelina Solar, Vinton Solar and Hilcrest Solar. All are utility scale projects.

27. The record is replete with evidence of renewables alternatives available in the market and offered by CRES providers including Intervenors in this case. (Rever, IGS Ex. 9, p. 5; Haugen, IGS. Ex. 10, p. 4; Murray, IEU Ex. 1, p. 12; White, IGS Ex. 12, pp. 17-18; Sioshonsi, OCC Ex. 25, p. 22). Renewable energy can be supplied by CRES providers with as much as 100% renewables sourcing. As discussed above, Staff Witness Benedict testified that there are alternatives available in the market. As of November 8, 2018, residential customers in the AEP load had 29 CRES offerings with 100% renewables and small commercial, GS-1, had 14 offers with 100% renewables. There are also "Green Tariff" options, net metering options and governmental aggregation programs available in the market. (Benedict, Staff Ex. 2, p. 10). The Staff is concerned that AEP's proposal would crowd out these competitive offerings. (*Id.*, p. 11).

28. In sum, the record demonstrates that the PJM Market is a competitive market that provides diverse, reliable and efficient energy resources. In contrast, AEP Ohio's REPA proposal distorts the market and is anticompetitive. Additionally, there is no assurance that the output of any REPA will actually serve Ohio customers. AEP Ohio reserves the option of entering into "reasonable arrangements" for the output. (Allen, Vol. I, 208). In any event, in the PJM Market, output is liquidated into the market and the provider then purchases needs in the market. (Allen, Vol. I, 287). There is no assurances Ohio customers will receive any purported benefit of these proposed renewables projects. (Torpey, Vol. V, 1422, 1424; Lesser, OCC Ex. 18, p. 20).

**V. AEP OHIO'S CONTORTED PERCEPTION
OF "NEED" IS SELF-SERVING, IRRELEVANT
AND INCONSISTENT WITH THE PREDICATE
CONDITIONS OF R.C. 4928.143(B)(2)(c).**

29. Acknowledging that there is no capacity or energy "need" for 900 MW of renewable energy based on resource planning, AEP Ohio attempts to redefine and enlarge the meaning of "need" beyond that addressed in R.C. 4928.143(B)(2)(c). AEP Ohio redefines "need" to include:

- Consideration of claimed cost/benefit of renewable resources;
- Customer "wants" or "desires" for renewable energy; and
- Economic benefit to the Ohio economy.

None of these considerations are relevant to the "need" for the facilities based on resource planning as required by R.C. 4928.143(B)(2)(c).

30. In these cases, AEP Ohio contends that there is a *generic* need for 900 MW of renewable energy projects. The AEP Ohio focuses exclusively on *generic* renewable resources rather than the two specific solar generation projects at issue - Highland and Willowbrook. The

operation, design, output, costs, cost allocation, capacity factors and reliability of the specific sources at issue can only be determined by critical examination of the actual REPAs at issue. AEP Ohio's hypothetical, *generic* cost analysis provides no real-world economic cost/benefit analysis of the two specific solar projects at issue under R.C. 4928.143(B)(2)(c).

A. Commissions In Other Recent Cases Have Rejected AEP's Forecasted Cost/Benefits Analysis.

31. AEP Ohio conveniently ignores the fact that AEP Ohio's forecasted analysis of cost/benefit has been soundly rejected by other state commissions in three (3) very recent cases. In each case, AEP conceded there was no capacity or energy "need" for the renewables projects. The Commissions found that AEP forecasted natural gas prices were inflated compared to market and other independent forecasts, benefits were highly speculative over a 20+ year term and the assumed future carbon burden costs were unsubstantiated. See *Re Application of Appalachian Power Company For A Rate Adjustment Clause Pursuant To § 56-581.1A6 of The Code of Virginia*, Virginia State Corporation Commission, Case No. PUR-2017-0031, Order Dated April 2, 2018. (Rejecting APCO's request to recover costs associated with the Beech Ridge II and Harden Wind generation facilities); *Re: Petition of Appalachian Power Company and Wheeling Power Company For Consent And Approval Of Acquisition of Wind Facilities*, Public Service Commission of West Virginia, Commission Order Dated May 30, 2018. (Also rejecting APCO's request for cost recovery of the same wind facilities); and *Re Application of Southwestern Electric Power Company For Certificate of Convenience and Necessity Authorization And Related Relief For the Wind Catcher Energy Connection Project In Oklahoma*, Public Utility Commission of Texas, PUC Docket No. 47461, SOAH Docket No. 473-17-5481 (Order Dated August 13, 2018). (Rejecting SWEPCO's request for authorization to acquire 70% of the 2000 MW Wind Catcher facility).

32. These cases were discussed in detail in OCA's Initial Brief, pages 20-24. The Commission would be well-served to follow the lead of the other state Commissions and reject AEP Ohio's approach for the same reasons as asserted for the basis for rejection in the three recent cases in Virginia, West Virginia and Texas.

B. AEP's Locational Marginal Pricing (LMP) Savings Analysis Was Flawed From The Beginning And Never Fully Corrected.

33. Contrary to AEP Ohio's latest argument, since LMP prices are determined at the relevant pricing nodes, location of the new generating source is important. (Ali, Vol. II, 505). Mr. Ali had to have a specific location of the interconnection in order to model LMP pricing. The specific generating facility is also important to input the load and rate profile. Mr. Ali relied on the load and rate profile and location of the Highland and Willowbrook solar facilities. The assumption Mr. Ali made was that the location and profile of these projects would have similar representative characteristics to the study case model. (Vol. II, 439-440).

34. Significantly, Mr. Ali assumed that both the Highland and Willowbrook facilities interconnected to the AEP East Zone. If a facility were located in a different zone, modeling could be affected. (Vol. II, 527). As the hearing progressed, it became apparent that Mr. Ali's assumption that the Highland facility would connect to the AEP East Zone was incorrect. The facility actually connects to the DP&L zone at the 345 kv Stuart-Clinton line. Accordingly, AEP Ohio recalled Mr. Ali on "rebuttal" to correct the LMP analysis to model the Highland project interconnection at the Stuart-Clinton line and to model the expected output at 400 MW. (AEP Rebuttal Ex. 26, p. 2).

35. Contrary to AEP Ohio's assertion, changing the location of the interconnection and the load output does impact Mr. Ali's calculation of LMP savings. This is clearly demonstrated by a comparison of Figures 1 and 2 in Mr. Ali's Rebuttal Direct.

(AEP Rebuttal Ex. 26, pp. 6-7; Vol. XII, 2792).

36. The relevant pricing nodes change with the change in location of the interconnection. The power is transmitted now from a new interconnection at the Stuart-Clinton line to a new substation south of the existing Clinton substation. According to Mr. Ali, from that substation, the power is transmitted to the **AEP West Zone** - not the **AEP East Zone** as originally assumed. Mr. Ali testified that the power is integrated into the DP&L power zone and liquidated into the **AEP West Zone**. (Vol. XII, 2779-2780). Mr. Ali performed no analysis of the DP&L system to reflect any changes in congestion at any given pricing node and presents no evidence as to congestion and relevant pricing nodes in the **AEP West Zone**. (Vol. XII, 2784, 2786, 2787).

37. Significantly, Mr. Ali's LMP Savings (\$/MWH) change in the update for each of the three years projected - 2021, 2024 and 2027. These results were passed on to Mr. Torpey and he had to extrapolate LMP pricing for all intervening years including all future years in the 20 year analysis after 2027. There is no evidence that Mr. Ali passed on the corrected figures to Mr. Torpey or that Mr. Torpey reflected the corrected figures in his analysis. Based on the present record, Mr. Torpey's analysis is based on faulty numbers for 2021, 2024 and 2027.

38. Mr. Ali's correction of the LMP savings figures for 2021, 2024 and 2027 certainly does not cure any of the flaws in his original analysis.

39. LMP pricing is only one of the possible ancillary benefits or liabilities associated with the REPA arrangement. Mr. Ali did not review the actual REPAs for either the Highland or Willowbrook facilities and made no assumption as to the contractual point of delivery or allocation of benefits / costs. (Vol. XII, 2776). In a typical REPA arrangement, the buyer assumes the output at the contractual point of delivery and dispatches the power where and how

the buyer determines. (Vol. XII, 2779). The typical REPA will allocate ancillary benefits / liabilities at the point of delivery including regulation, frequency, energy imbalance, spinning reserve, capacity benefits or penalties and other ancillary attributes. The REPAs will allocate ancillary benefits, charges or credits between the generator and buyer in some fashion. In this case, AEP has not addressed whether AEP Ohio would be considered the generator for purposes of receipt of LMP pricing payments. (Vol. XII, 2788).

40. For that matter, Mr. Ali's LMP savings analysis does not indicate any need for capacity or energy. (Vol. II, 462). Nor does his analysis take into account any countervailing or offsetting ancillary service costs or credits. (Vol. II, 417). He did not take into account uplift costs (Vol. II, 417, 455), reserve costs (Vol. II, 418-419), capacity performance assessments (Vol. II, 422), or other ancillary service revenue offsets (Vol. II, 429, 446, 447).

41. Mr. Torpey did not verify the location of the Highland interconnection and merely assumed the differential would apply consistently throughout the entire AEP East Zone. (Vol. V, 1468-1471). Mr. Torpey also acknowledged that LMP prices would be paid to the generator at the relevant pricing node. He assumed AEP Ohio would buy all 46,000 GWH from the generic projects and would sell the output into PJM and receive the revenues. (Vol. V, 1472-1473). He, like Mr. Ali, did not review the actual REPAs to determine how LMP credits or charges would be allocated between the parties. (Vol. V, 1474).

42. In any event, Mr. Torpey acknowledged that LMP savings, assuming no congestion, would apply uniformly across the entire AEP East Zone (Vol. V, 1373, 1454-1456). The AEP East Zone is three times larger than the AEP Ohio load. (Vol. V, 1460). Accordingly, Mr. Torpey acknowledged that LMP savings were a function of system savings and would apply

irrespective of whether AEP Ohio entered the REPA contract or secured the output in an alternative arrangement. (Vol. V, 1374).

43. OCA Witness Brown criticized AEP's LMP analysis on several bases. First, LMP pricing is not a resource planning tool and does not establish any "need" for capacity or energy as Mr. Ali conceded. (Vol. II, 462). Any viable PROMOD simulation must be based on simulation of the actual project's location, operation, load profile and generation output as opposed to any "generic" analysis. (OCA Ex. 2, REB Ex. 1, p. 39).

44. OCA Witness Medine also criticized Mr. Torpey's LMP analysis in Table 4. Ms. Medine testified that a .12% difference in the Net Present Value of claimed savings over a 20-year period fails to demonstrate that one scenario is lower in cost than any other. The difference is within the margin of error of the forecasts. A microscopic change in any number of assumptions can impact the outcome. The results are not dispositive of any relative LMP savings. In fact, many of the assumptions in the analysis are problematic. Specifically, the average annual growth in energy costs at 4.5% is inconsistent with other reported costs. (OCA Ex. 3, pp. 18-19).

45. Based on the flaws addressed above, AEP's analysis of LMP savings (Table 4) should be rejected in its entirety. Mr. Ali's original analysis improperly assumed the connection point would be the AEP East Load Zone. This analysis was subsequently modified to reflect a connection to the DP&L Zone with assumed liquidation of output into the AEP West Zone - not the AEP East Zone. The many errors in the LMP analysis were never corrected in Mr. Torpey's analysis. The analysis constructed by Mr. Torpey is flawed in this respect and many others.

**C. AEP's Fundamentals Forecast
Is "Fundamentally Flawed".**

46. The record here demonstrates, as found by the Virginia, West Virginia and Texas Commissions in recent cases, that the Fundamentals Forecast is consistently overaggressive and speculative both in the projections of energy cost and PJM market prices. There is no basis for the assumption of a carbon burden in 2028 that dramatically impacts forecasted prices. There is not now, nor is there contemplated in the future, a proposed carbon tax of \$15/ton commencing in 2028.

47. A review of the Fundamentals Forecast reflects significant variation in PJM peak and off peak prices. It also reflects substantially increasing natural gas commodity prices at the Henry Hub between 2018 and 2048, increasing from \$2.79/MMBTU in 2018 \$9.17/MMBTU in 2048. The review also reflects disparate natural gas prices at the Henry Hub compared to other locations closer to Ohio such as the TCO Pool or the Dominion South Point Pool. The most dramatic impact in the PJM forecasts is the assumed carbon burden commencing in 2028 which increases forecasted energy prices by \$11/MWH alone. (Vol. III, 832; IGS Exs. 4 and 5).

48. OCA Witness Medine reviewed AEP's assumptions for natural gas prices compared to EIA's 2018 Annual Energy Outlook. Ms. Medine concluded that AEP forecast prices for natural gas at the Henry Hub were substantially greater than EIA forecasted prices. Further, Marcellus Shale gas, produced locally, currently trades at a negative basis differential to Henry Hub. (OCA Ex. 3, p. 20-21, Table A-1).

49. OCC Witness Lesser also testified that AEP's forecast price at the Henry Hub varied between 2.5% and 18% higher than the EIA 2018 Annual Energy Outlook Agreement. For the entire period of 2018 through 2048, AEP's forecasted prices averaged 12% higher than for EIA forecasts. (OCC Ex. 18, pp. 43-44). Moreover, assuming a differential of

\$.76/MMBTU between the AEP and EIA forecast and a 10,000 MMBTU/kwh average heat rate, the differential between the AEP gas forecasts and the EIA gas forecasts translates to a \$7.60/MWH price differential. (OCC Ex. 18, p. 46).

50. IGS Witness Paul Leanza also found that the AEP Fundamentals Forecast consistently overstated natural gas prices. (IGS Ex. 13, pp. 3, 5). For example, by 2030, AEP's natural gas estimate is \$6.479 while market forecasts the price at \$3.389, half AEP's forecast. Based on heat rate correlation, the price difference translates to an over inflated power price of \$29/MWH in 2030. (IGS Ex. 13, pp. 5-6).

**D. AEP Ohio's "Generic" Economic Benefit Analysis
Is Skewed To Favor Renewable Resources, Is
Based On Unfounded Assumptions And Is Speculative.**

51. It is apparent from a critical review of Tables 5 and 6 presented in Mr. Torpey's generic Avoided Cost analysis that the analysis is skewed in favor of renewables, is based on numerous unfounded assumptions and is speculative.

52. First of all, the analysis is based on AEP's Fundamentals Forecast which has been proven to be overaggressive and speculative. Forecasting hourly, let alone real time, energy and capacity values which vary by year, season, day and hour out twenty (20) years is inherently speculative and problematic. Comparing intermittent and baseload resources based on an LNCOE basis with varying load curves, utilization rates and capacity factors is problematic and grossly misleading. Tax credits, including the Production Tax Credit, distort energy and capacity pricing. Mr. Torpey's analysis improperly considers a single 400 MW generic source rather than separate facilities with different load curves, capacity factors and operating characteristics. Again, any of the critical assumptions of the analysis change, the results would change. (Vol. V, 1312).

53. Mr. Torpey did not consider the potential addition of new generation resources over the next twenty (20) years - including specifically pending or approved solar or wind projects. New generation source could impact the analysis particularly as to assumptions for future energy and capacity market prices. (Vol. V, p. 1448).

54. Mr. Torpey's analysis incorporates the so-called "carbon burden" engrained in the AEP Fundamentals Forecast which increases the forecasted energy price in 2028 by \$11/MWH and escalating at 5% for every year thereafter. (Vol. V, 1333, 1345). That factor alone skews Solar Energy Priced at Market and the Net Costs of Energy, pushing the Break Even date for solar to at least 2030 and beyond. (See Table 7, Column N).

55. Worse yet, Mr. Torpey *assumes* that AEP Ohio could sell 100% of the capacity value and monetize the capacity value in the market. (Vol. V, 1317, 1486). The assumption is that if a solar resource is bid and clears the PJM capacity auction, some value would be realized. (Vol. VI, 1210). The evidence strongly indicates that solar (and wind) are intermittent sources not likely to be bid or clear the capacity market. Further, there may actually be capacity performance assessment or penalties that apply but were not considered. (Vol. V, 1322, 1342). If no capacity credit is received in the future, the value of Net Avoided Cost of Energy is reduced by \$33.9 million. (Vol. VI, 1211).

56. OCA Witness Dr. Brown reviewed AEP Ohio's generic project analysis. (OCA Ex. 2, REB Ex. 1, pp. 13-17). He also reviewed a specific analysis for the Highland and Willowbrook solar facilities but that analysis has been deferred to Phase II. (REB Ex. 1, pp. 18-24). Initially, Dr. Brown concluded that assuming the Break-Even for solar at \$56.82/MWH and a Break-Even for wind at \$48.40/MWH, AEP Ohio expects that the discounted cost of solar power over the next 20 years is approximately 17% higher than wind. (REB Ex. 1, p. 13). AEP

Ohio also assumes that a Solar REPA would cost \$45/MWH compared to a Wind REPA at \$40/MWH. AEP Ohio's own evidence suggests that a Solar REPA is less advantageous than a Wind REPA.

57. Dr. Brown also concluded based on the Generic Solar Break-Even Analysis (Table 7, Ex. JFT-1), the net cost of energy would exceed market for the first seven (7) years of the analysis. Mr. Torpey projects Avoided Energy and Capacity Costs will increase significantly over the 20 year term. The Net Cost of Energy is lower than market in years 2028 through 2040. The analysis for later years is particularly suspect given increased uncertainty in later years of the analysis. AEP Ohio incorrectly uses the same discount rates for all 20 years of the forecast (based on AEP Ohio current weighted cost of capital). Higher discount rates should have been used in later years given this uncertainty. Just considering inflation, yield curves have significantly different values in the short-term versus longer terms. (REB Ex. 1, p. 15).

58. Mr. Torpey projects an average annual price increase for Solar Energy Priced at Market of 4.2% over 20 years and an average annual market price increase for Capacity of 12.1% over 20 years. These projections are significantly in excess of historical inflation rates of 2.16% over the last 20 years. In fact, Torpey's projected Capacity price increases are five (5) times the historic inflation rate. (Table 3-1, REB Ex. 1, pp. 15-16).

59. Further, as discussed, Mr. Torpey merely assumes a fixed Solar REPA Contract Price of \$45/MWH over the 20 year term. Mr. Torpey asserts this fixed Solar REPA price provides a hedge against his overly aggressive projections of market capacity and energy prices. AEP Ohio itself projects that solar installation costs for both utility scale and residential and commercial installations will decline through 2030. Recent solar REPA prices have generally been priced in the range of \$20 to \$30/MWH. Far from being a "hedge", locking in a REPA

price over the current market presents an enormous financial risk to AEP Ohio and its customers. (REB Ex. 1-1, pp. 16-17).

60. Finally, Mr. Torpey's analysis does not reflect "debt equivalency costs". (Vol. V, 1599). AEP Ohio seeks recovery of over \$110 million in debt equivalency costs over the twenty year term of the REPAs. However, Mr. Torpey did not factor these debt equivalency costs in his analysis. (Vol. V, 1295). Dr. Brown addresses in his Report the significant impact of debt equivalency costs. This evidence (REB Ex. 1, p. 20) was deferred to Phase II. However, OCA has made a Proffer and urges the Commission to consider the impact of debt equivalency costs in this Phase. Again, Proffer follows:

PROFFER: AEP OHIO CALCULATES THE ANNUAL DEBT EQUIVALENCY COST TO BE \$4.30 MILLION FOR HIGHLAND AND \$1.36 MILLION FOR WILLOWBROOK OR OVER \$113 MILLION OVER THE 20 YEAR TERM. THE RESULT IS AN INCREASE OF \$7.05/MWH FOR HIGHLAND AND \$6.69/MWH FOR WILLOWBROOK. THE ADDITION OF THESE COSTS PUSHES BACK THE HIGHLAND BREAK-EVEN BY 16 YEARS AND THE WILLOWBROOK BREAK-EVEN BY 12 YEARS. (REB Ex. 1, pp. 20, 23).

61. OCA Witness Medine also criticized Mr. Torpey's Break-Even Analysis. (OCA Ex. 3, pp. 21-24). Most importantly, AEP Ohio fails to consider the risk to ratepayers associated with committing to a 20 year Solar REPA at \$45/MWH when all indications are that solar installation costs are declining. This is similar to AEP Ohio's commitment to Wind projects which required AEP Ohio ratepayers to pay higher Wind REC prices through the AER even if REC prices drop. (OCA Ex. 3, p. 21).

62. Referencing Table 5 of the Torpey analysis, Ms. Medine concludes, as did Dr. Brown, that in the early years of the 20 year term, generic solar energy costs exceed the market. It is only in the later future years do the projects break-even. That is due to Mr. Torpey's overly

aggressive projections of future market and capacity price increases. (ESM-3 of OCA Ex. 3, pp. 23-24).

63. OCC Witness Dr. Lesser expressed similar criticisms of Mr. Torpey's analysis. Dr. Lesser concluded the suggested benefit is overstated and is based on inaccurate future gas prices. He also testified that solar REPA costs must be offset by the claimed debt equivalency costs. Contrary to fact, there is no carbon burden presently and none is contemplated in the future. The presumed carbon burden in year 2028 dramatically impacts projected costs. (OCC Ex. 18, pp. 8, 48). Further, AEP Ohio assumes a capacity credit but ignores probable capacity nonperformance penalties. (OCC Ex. 18, p. 9). Given renewables' intermittent character, there is no assurance that AEP Ohio will be able to collect capacity revenues at all. (OCC Ex. 18, p. 50). AEP Ohio also did not take into account possible FERC actions in Docket No. EL-18-178 to reduce capacity revenues for renewables. (*Id.*). Finally, Mr. Torpey assumes an unreasonable and rapid escalation in PJM capacity and energy market prices. The 2018 Base Case projects market capacity prices increasing at an average rate of 14.6% rising from \$30.12/MW day in 2022 to \$350.55/MW day in 2040. There is no basis to support this projected price escalation. Based on Dr. Lesser's analysis, the average rate of growth should only be 3.8%. (OCC Ex. 18, pp. 50-54).

64. OCC Witness Dr. Sioshansi was particularly critical of AEP Ohio's so called "Monte Carlo" simulation. Mr. Torpey testified that PJM historical data yielded a standard deviation of 25% relative to average energy price over the last 10 years. The 25% standard deviation was employed in the probalistic simulation. Accordingly, 66% of the time the value would fall between plus (+) or minus (-) 25% of the mean value. (Vol. V, 1425-1426).

65. Dr. Sioshansi testified that relying on the prior 10 years of PJM price data was unreliable to calculate standard deviation of future prices since the historical prices were driven by skewed decreases in natural gas prices and in the rate of growth of electricity. Normal distribution (Gaussian) does not provide a good fit to historical data in any event. Mr. Torpey did not address autocorrelation in the simulation at all. Normal distribution (Gaussian) does not provide a good fit to empirical renewable availability data. The mistaken assumption in Monte Carlo is that random variables such as wind and solar availability are statistically independent. (OCC Ex. 25, pp. 19-22).

66. IGS Witness Joseph Haugen also agreed that AEP Ohio's forecast of capacity cost benefits was flawed. As discussed, PJM is moving to change capacity market rate charges (FERC Docket EL-18-178) which would only allow state subsidized resources to bid at Minimum Offer Price Rates (MOPR) or capacity would fall under the Resource Carve-Out option. Given the large amount of generation reserves currently in the PJM Market, it is unlikely renewables resources would clear the capacity auction. (IGS Ex. 10, p. 5).

67. Sierra Club Witness Goggin even acknowledged that the MOPR would effectively prevent state subsidized renewable sources from clearing the capacity market. AEP's REPA proposal may very well result in AEP Ohio not being able to realize sales of renewable capacity. Moreover, there is a risk AEP Ohio would actually be subjected to Capacity Performance assessments (penalties). PJM has recently proposed reducing Wind capacity values from 13% to 7.9% of nameplate capacity. Under PJM Capacity Performance Rates, penalties for under-performance are significant. (Sierra Club Ex. 1, pp. 12-15, 18).

68. IEU Witness Murray sponsored the 2021/2022 PJM Base Residual Auction Results. These results indicate that, for the most part, Wind and Solar resources are not bid into

the capacity market and do not clear the capacity market. (IEU Ex. KMM-2). Out of 8,126 MW of nameplate capacity, only 1,416.7 MW of Wind cleared the market. Out of 1641 MW of Solar nameplate capacity, only 569.9 MW of Solar cleared the market. (IEU Ex. KMM-2, pp. 13-14).

69. Finally, Kroger Witness Justin Bieber was likewise critical of AEP Ohio's generic benefit analysis. If the Low Band is utilized from the AEP Fundamentals Forecast, there is a loss of \$13 million on a NPV basis over the life of the solar REPA and a significant annual loss for the first eight (8) years. (Kroger Ex. 4, p. 18). Again, Mr. Torpey's analysis does not reflect debt equivalency costs which substantially offsets the projected savings. (*Id.*, p. 19). The real price of a REPA is more expensive in early years and less in later years. AEP Ohio's forecast of avoided cost of energy and capacity in the PJM Market has just the opposite shape. The avoided cost of energy and capacity is lower in early years and increases substantially during later years of the REPA duration. There is a misalignment between the REPA fixed price and the avoided cost of energy and capacity results. (*Id.*, p. 23).

70. In short, the overwhelming evidence demonstrates that AEP Ohio's "generic" economic benefit analysis is skewed to favor renewables, is based on unfounded assumptions and is speculative. The analysis should be rejected.

**E. The Navigant Survey Is Irrelevant To
The Issue of "Need" And Ridiculously Biased.**

71. AEP Ohio places an inordinate reliance on the Navigant Survey. (See AEP Initial Brief, pp. 27-45). The Navigant Survey is irrelevant to the issue of "need" under R.C. 4928.143(B)(2)(c). The Survey is biased and cannot be extrapolated to reflect "wants" or "desires" of the AEP Ohio residential or commercial customer base.

72. AEP Ohio has over 1.1 million non-PIPP residential customers. The survey was sent to 120,000 accounts. Only 7,498 responded. Accordingly, 92.8% of AEP Ohio non-PIPP

residential customers either were not solicited for a response *or* did not bother to respond.

Similarly, only 664 small C&I customers responded out of 150,000 customers - 96.75% provided no response. (Vol. III, 634-635, 637).

73. OCC Witness Dr. Noah Dormady, an expert in survey methods for economic measurement and a professor at Ohio State, concluded that the Navigant Survey was poorly designed and totally unreliable. Given his credentials and experience, his testimony is particularly credible and reliable. Dr. Dormady concluded that the Navigant Survey was biased in multiple ways - Framing Bias, Hypothetical Bias, Social Desirability Bias and likely Selection Bias. Stated Preference surveys notoriously misrepresent true behavior and attitudes. Navigant failed to provide sufficient, credible details concerning coding methodology, sampling method or content framing. There is no basis to suggest that the sample size was sufficient to mitigate bias. (OCC Ex. 24).

74. OCA Witness Dr. Brown was equally critical of the Navigant Survey. The response rate for Non-PIPP Residential Customers was only 6.2% and only 3.3% for Small C&I customers. Navigant cannot extrapolate results to the total customer base. Significantly, 92.8% of non-PIPP residential customers and 96.7% of the Small C&I customers either were not solicited or did not bother to respond. Non-response bias is a major problematic issue. Further, the nature of the questions and how posed introduce substantive bias in the response. In sum, Dr. Brown concluded that the Navigant Survey was substantially flawed, reflected low response rates, produced significant non-response bias and reflected biased response choices. (OCA Ex. 2, REB Ex. 1, pp. 31-34).

75. OCC Witness Medine, who has survey experience in working with utilities and state Commissions (Vol. VII, 1922-1923), testified that the Navigant Survey actually indicates

that customers care more about maintaining bill amounts than having AEP Ohio invest in renewables. Further, Navigant failed to establish the survey results were at all representative of the residential and commercial customer base. The survey was limited to customers with email addresses which were not available for 38% of non-PIPP residential and 65% of Small C&I accounts. The Survey was not directed to the issue of the 20 year risk of committing to a solar or wind REPA or the premium cost and risk that would be incurred. Based on her experience in Alaska, in general only 3% of customers are willing to see an increase in bills with renewables. (OCA Ex. 3, pp. 33-35).

76. If 6% of AEP Ohio's customer base truly desires renewable energy, these customers have a myriad of options through "green tariff" alternatives and renewable products available in the competitive market. If these customers want renewable energy, they can pay for it on their own accord. There is no justifiable reason to force over 92% of the customer base to subsidize the "desires" of less than 6% of the customer base.

**F. The Purported Economic Development Benefits Of
The Projects Are Also Irrelevant To The Issue of "Need".
Any Economic Development Benefit Would Apply Irrespective
of AEP Ohio's Participation In The REPA Contracts.**

77. As discussed above, the Commission has previously held that economic development benefits and job creation are irrelevant to the issue of "need" based on resource planning as provided by R.C. 4928.143(B)(2)(c). See *In The Matter Of the Long-Term Forecast of Ohio Power and Related Matters*, Case No. 10-501-EL-FOR et seq., Opinion and Order at 25-27 (Jan. 9, 2013).

78. The bottom line is that any economic development benefit of the two proposed solar projects will apply irrespective of whether the projects are developed in the market or through AEP Ohio's proposed commitment through the subject REPAs. (Allen, Vol. I, 105;

Buser, Vol. I, Tr. 1088). Further, solar projects exhibit substantial installed costs. Together, the total construction output above for the projects exceed \$332,396,000. For 400 MW of solar this equates to \$830,990/MW. (Ex. SB/BL-1, Table 1, p. 10). There is no "free lunch". Ultimately, these construction costs will be borne by ratepayers, including the Ohio ratepayers. (Lafayette, Vol. IV, 1141).

79. Dr. Lafayette did not review the specific REPA contracts to determine any contractual commitment to source of goods. (Vol. IV, 1152). Instead, he relied on AEP personnel to provide information on costs and source of goods. AEP, in turn, relied on representations from the developers and details were not produced at trial because of confidentiality restrictions. (Vol. IV, 1133, 1136, 1144, 1155). Accordingly, Dr. Lafayette's entire analysis is based on "double hearsay" - unreliable and unconfirmed evidence.

80. The largest component of a solar project are the solar panels and inverters. The source of these items impacts the entire flow chain from source of manufacture, through transportation to direct installation. (Vol. II, 1154-1155). Dr. Lafayette could provide no details of the breakdown of the total construction costs of \$332,396,000 for the projects reflected in Table 1 of Ex. SB/BL-1, p. 10. Dr. Lafayette was not told the number of solar panels or inverters at issue or the specific model or manufacturer. (Vol. IV, 1158). He had no direct communications with the developers. He could not independently verify that the source of the panels/inverters was from Canada, outside the United States or outside Ohio. (Vol. IV, 1160, 1166).

81. The projects will employ only a few permanent positions during operation. Willowbrook will employ 20 to 24 direct personnel during operation and Highland will employ only 5 new direct jobs during operation. (Vol. IV, 1165-1166). Dr. Lafayette could not address

any "premium" for Ohio jobs proposed in the REPA contracts or what the impact might be. (Vol. IV, 1151).

82. OCA Witness Dr. Brown addressed the economic development benefits analysis. The RIMS II model is heavily dependent on the assumptions made. Actual economic benefit may vary by a factor of ten (10). This analysis should be given little weight. (OCA Ex. 2, REB Ex. 1, p. 25). Although AEP Ohio suggests that no existing generation sources in Ohio will be displaced, generation output from existing sources will be displaced. Dr. Brown concluded that not recognizing these offsetting economic impacts results in an overstatement of ongoing net economic benefit. Higher electricity rates, including debt equivalency costs of over \$110 million, will negatively impact the Ohio economic, reduce sales tax revenue, reduce employment and discourage new businesses from locating in Ohio. Not recognizing these offsets further results in an overstatement of economic benefit.

VI. CONCLUSION

AEP Ohio has unequivocally conceded that it cannot establish a capacity or energy "need" for the subject facilities under R.C. 4928.143(B)(2)(c) pursuant to this Commission's precedent, that "need" is established only when, is that based on resource planning projections, generation needs cannot otherwise be more through the competitive market. See *In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company for Authority to Establish a Standard Service Office*, PUCO Case Nos. 11-346-EL-SSO et al., p. 39 (Dec. 14, 2011); *In re Long Term Forecast Report of Ohio Power Co.*, PUCO Case Nos. 10-501-EL-FOR and 10-502-EL-FOR (Jan. 9, 2013). The Commission's Staff has independently confirmed that there is no capacity or energy "need" for the renewable energy projects based on integrated resource planning. The competitive PJM Market is more than adequate to service capacity and

energy needs. AEP Ohio's reliance on purported "generic" economic benefits, customer "wants" or "desires", and "economic development" benefits are wholly irrelevant to the demonstration of "need" based on integrated resource planning as required by R.C. 4928.143(B)(2)(c).

Since there is no "need" for the projects based on resource planning, the standard that defines "need" under R.C. 4928.143(B)(2)(c), AEP Ohio cannot satisfy the predicate condition under R.C. 4928.143(B)(2)(c) and no nonbypassable surcharge is merited. The case should be summarily dismissed and the relief sought by AEP Ohio denied. Further, AEP Ohio's proposal to enter into a fixed price REPA's over a twenty (20) year term under the limited exception of R.C. 4928.143(B)(2)(c) is inconsistent with the free PJM competitive market, provides a guarantee and state out-of-market subsidy for the renewable energy projects, distorts the operation of the PJM Market and is anticompetitive.

Finally, AEP Ohio's contorted perception of "need" is self-serving, irrelevant and inconsistent with the predicate conditions of R.C. 4928.143(B)(2)(c). Commissions in three (3) states - Virginia, West Virginia and Texas - have, in the last year, soundly rejected AEP's Fundamentals Forecasts and methodology for asserting claimed cost/benefits of renewable energy projects. Besides being entirely irrelevant to the predicate issues of "need" under R.C. 4928.143(B)(2)(c), this approach has been demonstrated in this case to be flawed, skewed to favor renewable resources, based on unfounded assumptions and speculative.

There is no barrier to another affiliate of AEP - AEP Energy, AEP Renewables or another affiliate - to develop renewable energy projects, or other energy generation resources, in the competitive market. AEP is free to develop the projects at its benefit and risk rather than to invoke the limited exception of R.C. 4928.143(B)(2)(c) to force captive customers to subsidize and guarantee the projects.

AEP Ohio's proposal for authority to enter into a fixed price REPA locked in for twenty (20) years term with the attendant, forced nonbypassable surcharge should be summarily dismissed.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that the undersigned counsel served, or arranged for service of, a copy of the Reply Brief Of Intervenor Ohio Coal Association on counsel for all other parties of record in this case by e-mail, on this 27th day of March, 2019.

/s/ John Stock _____
John Stock

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