

**BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO**

<b>In the Matter of the Application of</b>	)	
<b>Ohio Power Company to Initiate its</b>	)	<b>Case No. 19-1475-EL-RDR</b>
<b>gridSMART® Phase 3 Project.</b>	)	

---

**REPLY COMMENTS OF OHIO POWER COMPANY IN SUPPORT OF ITS  
GRIDSMART PHASE 3 APPLICATION**

---

**INTRODUCTION**

On July 26, 2019, Ohio Power Company (“AEP Ohio” or the “Company”) initiated this proceeding to continue and build upon its successful implementation of Phases 1 and 2 of its gridSMART deployment through a suite of gridSMART Phase 3 technologies and programs.

The Company’s Application seeks to further its grid modernization efforts undertaken to date by:

- A. Expanding the reliability benefits of Distribution Automation Circuit Reconfiguration (“DACR”), deploying DACR on an additional 80 schemes and 416 distribution circuits;
- B. Deploying Distribution Supervisory Control and Data Acquisition (“D-SCADA”), which provides details information about the existence and locations of outages to dispatchers, improving reliability, safety, and service restoration speeds, on 160 distribution circuits;
- C. Implementing the energy efficiency and retail power cost savings of Volt/Var Optimization (“VVO”), deploying VVO on an additional 190 substation buses and 492 distribution circuits;
- D. Completing the deployment of Advanced Metering Infrastructure (“AMI”) to the Company’s remaining customers by replacing an additional approximately 475,000 existing meters with “smart” meters;
- E. Deploying fiber optic infrastructure in areas of AEP Ohio’s service territory without readily-available broadband service;
- F. Installing a distribution line sensor demonstration of 3,100 total sensors on non-SCADA stations, hard-to-patrol segments of Phase 3 DACR circuits, and locations that have not received other reliability improvements to assess that technology’s reliability benefits;
- G. Implementing an Incremental VVO pilot through the installation and evaluation of 340 Dynamic Voltage Controller units on 20 circuits to analyze options to maximize future customer energy savings, peak demand reduction, and other benefits;

- H. Continuing to deploy and manage the Company's It's Your Power application, which facilitates customer access to AMI interval data; and
- I. Adding functionality to provide AMI data to competitive retail electric service providers via electronic data interchange for customers on time of use programs.

(See Application at 3-4.) The Company's Application and the accompanying Direct Testimony of Company witnesses Scott S. Osterholt and Dona R. Seger-Lawson demonstrate that AEP Ohio's proposed gridSMART Phase 3 project will deliver significant customer benefits, is just and reasonable, and is consistent with the Commission's approval of the continuation of the Company's gridSMART Rider in Case No. 16-1852-EL-SSO, *et al.* ("*ESP IV*").

Pursuant to the Attorney Examiner's August 10, 2020 Entry establishing a procedural schedule in this case, the Staff of the Public Utilities Commission of Ohio ("Staff") filed its Review and Recommendations regarding the Company's Application and several parties filed initial comments on September 9, 2020. AEP Ohio hereby submits the following reply comments. Because the authority to make this filing results from the Commission's *ESP IV* orders, and because the Company's Application, its attachments, and the supporting testimony filed contemporaneously with the Application include sufficient detail on the equipment and technology proposed for inclusion in the gridSMART Phase 3 project and their demonstrated success, cost-effectiveness, feasibility, and customer acceptance, AEP Ohio continues to support approval of its Application by the Public Utilities Commission of Ohio ("Commission") based upon the record established to date. But given the passage of time and some of the arguments based on developments that have occurred since the Application was filed, a supplemental testimony or hearing process could be of value to assist the Commission in fully resolving some of the issues presented by intervenors – especially if there are remaining concerns with the proposed advanced technology implementation after reviewing the record.

## **OHIO POWER COMPANY'S REPLY COMMENTS**

### **A. The Commission should approve the Company's proposal to deploy DACR on an additional 80 schemes and 416 distribution circuits.**

AEP Ohio's DACR proposal in this case principally involves the installation of additional "smart" reclosers on the distribution grid, function to sense faults on a distribution circuit and automatically cut off electricity flows to isolate the faulted section of line. (Osterholt Test. at 9 and Ex. SSO-2 p. 1.) As Company witness Osterholt's testimony explains, AEP Ohio has realized significant reliability benefits from the deployment of DACR on 70 circuits in gridSMART Phase 1. (*Id.* at 11-12.) For example, on average over the years 2016 through 2018, the System Average Interruption Frequency Index ("SAIFI") and the System Average Interruption Duration Index ("SAIDI") on circuits with DACR annually improved 21% and 15%, respectively. (*Id.*) If the Company's DACR proposal in this case is approved, AEP Ohio anticipates a 15.8% average annual SAIFI improvement, excluding major events, attributable to DACR on distribution schemes and circuits where this technology is deployed. (*Id.* at 12.)

In addition to the reliability benefits realized on the circuits where it is deployed, DACR provides several maintenance and safety benefits. First, smart reclosers have the ability, when installed in conjunction with a centralized controller, to automatically identify and react to outages without human action. (*Id.* at 9.) Without any required input from human operators, DACR technology can quickly (typically in less than two minutes) reconfigure circuits so that outages are isolated to the smallest area practicable and electric service is automatically restored to customers in other areas. (*Id.*) Second, DACR provides detailed information about outages to dispatchers in AEP Ohio's Distribution Dispatch Center ("DDC"), as well as to line personnel working in the field. (*Id.* at 10.) Without DACR, dispatchers and line personnel have only limited visibility regarding faults on the grid and must rely on customer reports and physical

inspection to determine the extent of an outage and diagnose its cause. (*Id.*) The information that smart reclosers provide regarding the existence and location of faults significantly improves the ability of dispatchers and line personnel to diagnose, prioritize, and resolve outages. (*Id.*) Third, the ability to remotely operate smart reclosers provides significant safety and maintenance advantages, such as by eliminating in-person recloser switching. (*Id.*) In addition to improved safety, the ability to remotely switch a recloser also reduces response time and enables line personnel to more quickly attend to other trouble areas. (*Id.*)

As detailed in Exhibit SSO-3 to Mr. Osterholt's direct testimony, the Company's proposed DACR deployment will provide an estimated \$219,962,699 in reliability benefits to customers on a 15-year net present value ("NPV") basis. (*Id.* at 13 and Ex. SSO-3, p. 8.) Stated differently, the Company's proposed deployment of DACR is anticipated to deliver \$1.63 of DACR-related reliability benefits per \$1.00 of DACR-related capital and O&M costs incurred over 15 years. (*Id.*) AEP Ohio proposes to monitor DACR operations by outage to confirm these anticipated benefits are being delivered to customers by tracking the number of potential customers interrupted, the number of customer interruptions avoided as a result of DACR, the percentage of customers restored, and the estimated number of customer minutes of interruption ("CMI") avoided because of the DACR operation. (*Id.* at 14.) Data on these metrics since 2018 for the 70 circuits included in the Phase 1 DACR deployment demonstrates DACR's significant reliability benefits, showing nearly 50% avoided customer interruptions and more than 17 million avoided CMI. (*Id.*)

Given the current status of the Phase 2 deployment, Staff believes (at 4) that it is premature for the Commission to approve an expanded deployment at this time. In the gridSMART Phase 2 Stipulation approved by the Commission on February 1, 2017, in Case No.

13-1939-EL-RDR, the Company agreed to provide annual reports on DACR performance once ten circuits are equipped with DACR technology for at least six months. Staff indicates that this initial threshold has not yet been met. Ohio Partners for Affordable Energy (“OPAE”) also recommends (at 2-3) that the Commission should delay approval until more deployment progress is realized from Phase 2, especially regarding DACR. As a related matter, the Office of the Ohio Consumers’ Counsel (“OCC”) claims (at 4-6) that the DACR delays are significant because that technology was the most likely to provide improved reliability but has not performed as expected (2018/19 outages could have been reduced).

AEP Ohio strategically placed the VVO deployment first as a risk mitigation strategy and was successful in delivering these customer savings at the low cost / high value that was envisioned at the time its gridSMART Phase 2 application was filed. This strategic effort did result in fewer DACR deployments than would have been the case had the Company simply installed DACR without regard to risk mitigation. For Phase 2, AEP Ohio placed two DACR circuits in service at the end of 2018 and another five in May 2019; although some of these circuits were not in service to deliver customer benefits for the entire year, the Company still delivered solid customer outage improvement on the deployed circuits:

	<b>SAIDI Improvement</b>	<b>CAIDI Improvement</b>	<b>SAIFI Improvement</b>
<b>Excluding OMEDs</b>	30.4%	2.9%	28.3%
<b>No Exclusions</b>	32.7%	1.2%	31.9%

Additionally, Phase 1 DACR continues to deliver solid customer reliability improvements on deployed circuits. For the three-year period of 2017 to 2019, the average SAIDI improvement on these circuits was 16.2% and SAIFI improved 21.2% (excluding OMEDs). AEP Ohio has a

deployment plan that is scheduled to place approximately 30 additional DACR circuits in service by the end of 2020 and another 130 in 2021. AEP Ohio continues to investigate options for delivering these DACR impact assessment reports and associated customer reliability benefits at a faster pace.

Separately, OPAE recommends (at 3-4) that the existing waiver for personal notice on disconnection day should be revoked; as a related matter, OPAE posits that the Phase 2 waiver should not be extended to Phase 3. OPAE argues (at 4) that there is good cause to terminate the waiver because there are more disconnections in the AMI deployment areas versus non-deployment areas and because the COVID-19 pandemic increases the risk of disconnection. These issues are beyond the scope of this proceeding. As with the initial waivers, the extensions should be addressed in separate proceedings. In any case, OPAE's position really is that it simply continues to disagree with the waivers – just as it did when the Commission decided to grant them.

**B. The Commission should approve the Company's proposal to deploy Distribution Supervisory Control and Data Acquisition (D-SCADA), which provides details information about the existence and locations of outages to dispatchers, improving reliability, safety, and service restoration speeds, on 160 distribution circuits.**

D-SCADA is similar to DACR technology, without an automatic circuit switching and reconfiguration component. (Osterholt Test. at 15.) D-SCADA, like DACR, provides detailed information from smart reclosers about the existence and location of faults and outages to dispatchers and line personnel. (*Id.*) Additionally where the deployed circuit has a physical connection to an adjacent circuit, dispatchers are able to manually reconfigure circuits to enable power restoration to the maximum number of customers. (*Id.*) AEP Ohio evaluated 564 circuits that have limited or no physical interconnections to other adjacent circuits or have a negative

DACR business case and determined that 160 circuits have a positive business case for D-SCADA. (*Id.* at 17.) The Company proposes in this case to deploy D-SCADA on those circuits, many of which are in rural areas, over the first 5 years after a Commission order approving the deployment. (*Id.* at 17-18.)

D-SCADA significantly improves the ability of dispatchers and line personnel to diagnose, prioritize, and resolve outages, thereby reducing restoration time. (*Id.* at 15.) As Company witness Osterholt described, D-SCADA also offers a host of qualitative benefits, including improved public safety; operational safety, distribution grid visibility, and situational awareness for distribution operators and crews; timely detection and reporting of momentary interruptions; and future detection of distribution line device loading and maintenance issues. (*Id.* at 16-17.) AEP Ohio expects that deployment of D-SCADA on the 160 distribution circuits identified within the proposed Phase 3 project area will achieve an average 10% improvement in outage duration on those circuits, as measured by Customer Average Interruption Duration Index (“CAIDI”). (*Id.* at 17.)

As detailed in Exhibit SSO-3 to Mr. Osterholt’s direct testimony, the Company’s proposed D-SCADA deployment will provide an estimated \$88,283,605 in reliability benefits to customers on a 15-year NPV basis. (*Id.* at 18.) In other words, the Company’s proposed deployment of D-SCADA is anticipated to deliver \$2.31 of D-SCADA-related reliability benefits per \$1.00 of D-SCADA-related capital and O&M costs incurred. (*Id.*) AEP Ohio proposes to monitor D-SCADA operations to ensure that these reliability benefits are realized by monitoring annual aggregated CAIDI improvement, excluding major events, attributable to D-SCADA on the Phase 3 circuits on which that technology is deployed and comparing that data to aggregate pre-deployment CAIDI on those circuits. (*Id.* at 18-19.)

Staff (at 5) recognizes the potential reliability improvements associated with the proposed deployment of D-SCADA and intelligent line sensors. However, Staff recommends that the Commission deny the recovery of these investments through the gridSMART Rider, as the DIR is the more appropriate cost recovery mechanism. Similarly, OCC asserts (at 10) that D-SCADA is not a new technology that should be funded through the gridSMART Rider but is a normal capital budgeting expenditure that should be invested and recovered in base rates.

AEP Ohio internally debated what to call this deployment technology and the selected name has caused some external confusion regarding the proposed deployment technology. SCADA is a general term used to describe any Supervisory Control and Data Acquisition system. The term D-SCADA has been used in the past to describe the process of adding SCADA to the breaker within a distribution station to obtain real-time data regarding the operation of that equipment. The Company agrees that the previously-defined D-SCADA concept is not extremely innovative, but that is not what the Company's incremental D-SCADA proposal comprises in this case.

In the Application, AEP Ohio is using the term D-SCADA to describe a new application of applying SCADA beyond the station breaker and connecting Distribution Field Devices. This technology application is similar to DACR and delivers reliability improvement from having real-time information on the performance of these field devices and having the ability to manually control them from the DDC. This D-SCADA deployment has been focused to augment the DACR deployment and deliver new technology and reliability improvements to more rural circuits where it has been difficult to cost justify the DACR technology due to the rural nature of the circuits and the often lack of connections to other adjacent circuits.



As described above, AEP Ohio performed a D-SCADA cost-benefit study on each of the circuits where the DACR business case was not positive and is only recommending moving forward with D-SCADA deployment on the 160 circuits where the benefits exceed the costs. (Osterholt Test. at 17.) The gridSMART Rider, not the DIR, is the appropriate place for recovery of these advanced technology deployments.

**C. The Commission should approve the Company's proposal to implement VVO on an additional 190 substation buses and 492 distribution circuits.**

Volt/Var Optimization involves installing “smart” distribution infrastructure that allows AEP Ohio to measure voltage on various parts of the grid and to adjust voltage to respond to fluctuating voltage conditions. (*Id.* at 19 and Ex. SSO-2.) Over time, this allows AEP Ohio to achieve an overall reduction in grid voltage levels while ensuring that voltage at the meter never drops below the permissible range, thereby providing energy efficiency benefits. (*Id.*) AEP Ohio expects to achieve a 3 percent average improvement in energy efficiency (or reduction in energy usage) attributable to VVO on distribution buses and circuits where this technology is deployed plus an additional 1 percent using meter interval data from the current Phase 2 and proposed Phase 3 AMI deployments. (*Id.* at 20.)

In addition to improving energy efficiency, VVO reduces CO<sub>2</sub> emissions by reducing energy usage and optimizing circuit distribution voltages and power factor. (*Id.*) By enabling the Company to deliver energy at lower voltage levels, VVO also allows AEP Ohio's customers to realize an overall reduction in energy consumption on circuits where the technology is installed, thus reducing retail power costs. (*Id.* at 20.)

Out of the 445 candidate buses involving 973 circuits that were studied by AEP Ohio, 190 substation buses impacting 492 distribution circuits had positive 15-year NPVs. (*Id.* at 20-21.) AEP Ohio proposes to implement VVO on these buses in gridSMART Phase 3. These

buses and circuits collectively provide an estimated 15-year NPV of \$91,246,725 in customer power cost savings, meaning that the proposed deployment of VVO on these 190 substation buses and 492 distribution circuits is anticipated to deliver \$1.28 of VVO-related power cost savings per \$1.00 of VVO-related capital and O&M costs incurred. (*Id.* at 21 and Ex. SSO-3 p. 13.) In addition to these benefits, improved energy efficiency on these buses and circuits associated with VVO is estimated to reduce CO<sub>2</sub> emissions by 6,611,509 metric tons over 15 years. (*Id.*) AEP Ohio will monitor VVO operations, implement Measurement & Verification (“M&V”) protocols to evaluate the impact of the VVO system, and will undertake ongoing disturbance testing to continually measure the energy savings and voltage reductions provided by the VVO system throughout the deployment period. (*Id.* at 21.)

Regarding VVO, OCC recommends (at 8) that until and unless AEP Ohio completes the deployment of VVO on Phase 2 circuits and assesses the actual benefits customers are receiving, the Commission should not approve an expansion of the number of circuits that are equipped with VVO technology as part of Phase 3. AEP Ohio is approaching the completion of the Phase 2 VVO program. Physical construction has been completed on all VVO circuits except for one. As of September 1, 2020; AEP Ohio has placed 150 of the 160 VVO circuits in service. At the end of September 2020, AEP Ohio will have 155 of the 160 VVO Circuits in service. Another four will be in service by the end of October 2020, bringing the total to 159. And the final VVO circuit will be in service in early 2021 due to a right of way challenge that required re-engineering.

AEP Ohio has also completed the M&V on 26 commissioned VVO circuits resulting in an average voltage reduction of 3.1%. MWh saved to date totals 11,852. The Company is scheduled to complete M&V on 32 additional circuits by the end of the year. Advanced M&V to

show the VVO energy savings from including the AMI data in the VVO algorithm has been completed on 6 circuits, resulting in an average additional savings of the promised additional 1%. Further AMI data will be integrated into the larger VVO deployment in 2021 when all 160 circuits are commissioned and M&V has been completed. AEP Ohio is scheduled to report on these and the environmental benefits from these VVO savings in early Q1 2021 with the 2020 Smart Grid Non-Financial Metrics report.

Staff (at 4-5) supports the continued deployment of cost-effective VVO. Staff recommends that the Commission require the Company to reevaluate the feasibility and prioritization of planned circuits on an annual basis to ensure that only cost-effective investments in VVO are made. Staff further recommends that the Commission direct the Company to provide the results of this analysis to Staff. AEP Ohio is willing to work with Staff to periodically update the data used for the cost-effective analysis and use the refined data to select and move forward the technology on all circuits with positive business cases using the established mechanism.

Environmental Law and Policy Center (“ELPC”) and Ohio Environmental Council (“OEC”) support (at 6) rigorous and transparent monitoring of VVO investments by measuring the effect of those investments on peak demand, energy usage, and line losses. ELPC and OEC also support rigorous and transparent monitoring to determine how the demand, energy use and line loss reductions from VVO investments might vary when deployed adjacent to or upstream from other grid technologies, such as AMI, customer-owned distributed energy resources (“DER”), or smart inverters. AEP Ohio is focused on delivering very beneficial energy savings for customers through the deployment of the VVO technologies. The Company plans to continue to measure and verify various success metrics in groups after these circuits are placed in

service throughout the deployment timeline to maintain visibility into delivering the expected results. The Company will agree to work with Staff and intervenors to establish reporting metrics that balance costs to the customers and visibility into the success of the VVO deployment.

As a related matter, ELPC and OEC recommend (at 7) considering use of customer-owned smart inverters as part of the Company's VVO strategy. The technology to fully integrate customer-owned DER smart inverters and the regulatory environment are both currently in their infancy. DERs effectively function as another source with an uncontrolled voltage added to the distribution grid, which adds significant complication to the functioning of the VVO system. Substantial maturing and standardization of technology and regulatory aspects must occur. AEP Ohio could agree to monitor the technology, regulatory environment, costs, and benefits of integrating additional data, including smart inverters, into the vendor's VVO algorithm to further inform system optimization decisions and to enhance grid stability.

Finally, Industrial Energy Users-Ohio ("IEU") argues (at 5) that the Commission should scrutinize the "energy efficiency" components of the VVO proposal in light of HB 6 and mandate that mercantile customers can opt out of those costs. IEU's position should be rejected. The fact that some programs/components under the gridSMART Rider happen to have energy efficiency benefits does not change their grid modernization impact or nature. More importantly, the gridSMART Rider approved in the *ESP IV* cases is nonbypassable and does not have an opt-out feature; it would be inappropriate for the Commission to modify the rider in this proceeding.

**D. The Commission should approve the Company's proposal to complete the deployment of AMI to the Company's remaining customers by replacing an additional approximately 475,000 existing meters with "smart" meters.**

AEP Ohio proposes in this case to complete the deployment of its AMI meters and bring the benefits of AMI to the remainder of its customers by installing approximately 475,000 AMI meters in predominantly rural areas of its service territory. (Osterholt Test. at 22.) The proposed Phase 3 AMI deployment will allow customers and the Company to realize incremental benefits above those already realized with the legacy drive-by automated meter reading (“AMR”) system presently in service in the area. (*Id.*) Such benefits include incremental meter reading benefits, the ability to remotely connect and disconnect meters, reduced bad debt expenses on past due accounts, and utilizing meter interval data to expand and promote energy efficiency programs. (*Id.* at 23.) As Company witness Osterholt explained, AMI also generates real-time customer and operational data that can be utilized by increasingly sophisticated software to drive a multitude of other benefits for customers, such as those associated with DER, electric vehicles, and smart home devices. (*Id.*) AMI is a necessary part of gridSMART Phase 3 for numerous other reasons detailed by Mr. Osterholt, including because of the energy efficiency, customer energy usage data and control, service response and restoration benefits it enables, its ability to allow customers to participate in time-of-use and future incentive rate programs, and because it enables more reliable and cost-effective integration of DERs. (*Id.* at 23-24.)

OCC cautions (at 6-7) that it is not in consumers’ interest to rush to install smart meters. ELPC and OEC recommend (at 3-4) the Company implement robust time-of-use tariffs in parallel with AMI deployment, including modifications to existing time-of-use (“TOU”) programs that ELPC and OEC recommended in Case No. 17-1234-EL-ATA. ELPC and OEC also submit (at 5) that AMI data can enhance and modernize utilities’ existing distribution planning processes, including load forecasting, hosting capacity analysis, and voltage monitoring; accordingly, the Company should incorporate this benefit and strengthen its case for

expanding AMI. Finally, ELPC and OEC recommend (at 4) that the Company expand its smart thermostat program to match the scale of its proposed AMI deployment in this proceeding, not only to ensure that customers receive the purported benefits of AMI, but also to establish the foundational infrastructure necessary to make the Company's grid more flexible.<sup>1</sup>

AEP Ohio continues to observe customer benefits being delivered from AMI meters. With AMI meters installed at approximately two-thirds of the Company's customers' premises, delivering these benefits to the remaining customers is critical to these customers being on a level playing field to reap these benefits. AEP Ohio has been very deliberate with the AMI deployment pace to realize the cost and technology benefits for the most rural AEP Ohio customers. At the time of the gridSMART Phase 2 filing in 2013, AEP Ohio had proposed the AMI installation to include just the urban-based customers because of new technology advancements that were forthcoming from the AMI vendor. These new technology enhancements have been in production and have been used by many utilities including AEP Ohio for a few years. This positions AEP Ohio to deliver a more cost-efficient solution in rural areas.

AEP Ohio continues to see immense customer value from TOU rates and/or smart technology powered by the smart meter. The outcome of this case, the TOU tariff docket (Case No. 13-1937-EL-ATA), and other related cases will help guide the Company in its role in these areas in the future. If the Commission decides that the Company should have a bigger role in TOU rates and technology powered by the smart meter, that prospect will be welcomed.

---

<sup>1</sup> As a related matter, Staff believes (at 4) that the current case is the appropriate forum to address the wholesale settlement issues and data access enhancements necessary to advance the retail market and to better leverage existing AMI deployments before further deploying AMI meters, which the Company further addresses below in Section I.

AEP Ohio is optimistic that it will be able to provide value from use of AMI data to enhance and modernize its existing distribution planning processes, including load forecasting, hosting capacity analysis, and voltage monitoring. While this enhanced data may prove to be beneficial as new tools are developed, the Company has not included any direct costs in the AMI cost-to-benefit evaluation since they could not be objectively quantified.

AEP Ohio maintains that one of the most impactful aspects of the AMI meter is the access to data it provides to help the customer better manage their electricity consumption. Real time data and control functionality enhances the ease of achieving these energy efficiencies. While the Company does not anticipate that every customer will participate in the proposed It's Your Power program; experience allows AEP Ohio to estimate that 8-9% of customers will download the app and nearly half of these will request an Energy Bridge. (Osterholt Test. at 45-46.) The Energy Bridge is the tool that allows smart thermostats and other automation tools to be connected. AEP Ohio envisions working with our It's Your Power vendor to continue to pursue additional smart thermostat integrations bringing additional flexibility and customer preference to this energy management tool.

**E. The Commission should approve the Company's proposal to deploy fiber optic infrastructure in areas of AEP Ohio's service territory without readily-available broadband service.**

As Company witness Osterholt's Direct Testimony details, AEP Ohio proposes in this proceeding to install "middle mile" fiber optic cable ("fiber") to select Access Points and to the first distribution line device outside the station for DACR and VVO circuits rather than installing traditional wireless communication to those devices. (Osterholt Test. at 24, 30.) AEP Ohio anticipates that the incremental cost of its fiber deployment for a 15-year period will be \$52.6 million. (*Id.* at 26-27.) AEP Ohio plans to lease all excess dark fiber capacity above the

Company's operational needs to third parties to enable the macro-economic benefits of the high-speed broadband connectivity. (*Id.* at 27.) The Company expects that the incremental cost will likely be offset by anticipated dark fiber leases on these fiber segments as well as other AEP Ohio fiber in an aggregate amount equal to or greater than \$52.6 million. (*Id.*) Fiber lease revenues will be credited against and offset the cost of the fiber deployment included in the gridSMART rider's revenue requirement. (Seeger-Lawson Test. at 7.)

Implementing fiber provides numerous operational, individual, and societal benefits. Fiber will enhance the other smart grid technologies that the Company already has deployed and proposes in this case. (Osterholt Test. at 24.) The Phase 3 deployment locations include many rural areas that have limited existing cellular service. Fiber also provides other significant operational benefits, including benefits associated with cybersecurity, reduced dependency and costs related to third-party cellular providers, and rural broadband expansion.

Installing fiber that is owned by AEP Ohio allows the Company to monitor for threats at every point in the communications and gives the Company control over the hardening, use, and protection of the network components earmarked for its purposes. (*Id.* at 25.) Because the fiber would be maintained by the Company, access to the fiber would be restricted to only Company personnel and the Company would have control over repairs. This control would enable the Company not to rely on the availability and scheduling of third party infrastructure providers should network issues arise. (*Id.*) The actual physical construction of fiber also helps mitigate cybersecurity risk: because fiber consists of multiple glass strand bundles, physically cutting into the line to try to intercept data will more than likely end in a ruined line with no effective data communication. (*Id.*) Moreover, because fiber uses light transmission instead of frequency



transmission, there is no radiant signal that can be intercepted by third parties, which prevents cross-talk and radio frequency interference. (*Id.*)

Additionally, in areas where fiber communications are deployed, the communication network will be owned and controlled by AEP Ohio, which reduces the Company's dependence on third parties to ensure that the communication system is functioning adequately. (*Id.* at 26.) This also will enable the Company to respond to outages or other events in a way that serves the Company's and customers' needs, rather than being dependent upon a third party whose interests may not align with the Company's. (*Id.*) Reducing the need for public cellular wireless communication reduces the ongoing expense for third party monthly cellular expenses by approximately \$5.3 million over a 10-year period and will eliminate ongoing monthly expenses associated with cellular backhaul. (*Id.*) Owning the facilities also reduces forced expensive upgrades from third parties for such items as equipment or the latest wireless technology (such as moving from 3G to 4G). (*Id.*)

Importantly, deploying fiber infrastructure in support of AEP Ohio's grid modernization programs also positions the Company well to assist in supporting rural broadband expansion in unserved and underserved areas within its service territory. (*Id.* at 27.) The FCC reports that 39% of rural Americans (~23 million people) lack access to 25 Mbps download/ 3 Mbps upload (the current federal definition of "broadband") services. (*Id.*) As of May 2017, 300,000 rural households (equating to approximately 1 million residents) and 88,500 Ohio businesses did not have broadband access. (*Id.*) State leadership has recognized the need to explore non-traditional service models to address Ohio's ongoing connectivity needs, particularly in rural areas. (*Id.*)

Now, more than ever, access to broadband is essential to support educational, health care, public safety, and access to information. (*Id.* at 27.) As AEP Ohio and other electric utilities

modernize the electric grid and add more communications infrastructure to existing utility assets in order to gather the data needed to create a smart system, they can leverage communications advancements for an incremental expense to facilitate broadband expansion for customers. (*Id.*) Company witness Osterholt's testimony describes in detail the role that AEP Ohio can play in overcoming cost and other barriers to broadband deployment in rural markets, as well as the significant individual and societal benefits associated with the opportunity to expand rural broadband access in connection with the Company's fiber deployment. (*Id.* at 28-30.) Such benefits include, *inter alia*, economic, education, workforce, government, healthcare, civic engagement, healthcare, quality of life, entertainment, energy efficiency, and others. (*Id.*)

AEP Ohio proposes to size its fiber deployment to balance cost and need for the specific area and target having adequate excess fiber capacity to serve the underserved need of the community where the fiber is being deployed. (*Id.* at 31.) Typically, AEP Ohio will deploy a fiber cable with a minimum of 96 total fibers. (*Id.*) The utility communication need for fibers and associated spares within these new fiber optical cables is expected to be 48 or less. (*Id.*) The remaining dark fiber, which typically will comprise a minimum of an additional 48 fibers (for a total fiber cable of 96 or more total fibers), will be made available to various groups including new and existing broadband providers to expand their service coverage and eliminate the upfront capital investment into building the infrastructure that would otherwise be required to deliver high-speed broadband services to customers in the area. (*Id.*)

Making dark fiber leases available to broadband providers and internet service providers ("ISPs") will significantly reduce the barriers to a provider entering a rural market by reducing their construction and permitting costs. (*Id.*) As Company witness Osterholt's Direct Testimony explains, typical fiber construction costs approximately \$50,000/mile; leasing fiber from AEP

Ohio, however, will be at a fraction of this cost. (*Id.*) Therefore, AEP Ohio expects that its fiber deployment will incentivize ISPs to build out to serve those areas of Ohio that have until now been difficult to reach and will connect rural customers with this essential and beneficial service. (*Id.*)

OPAE explains (at 5-6) that its position supporting the proposed fiber deployment to unserved areas is based on the fact that, as the recent pandemic conditions make painfully clear, internet is critical for jobs, education, economic development, and other benefits. OPAE specifically notes (at 6) that its low-income clients frequently cannot enroll for services such as bill payment assistance and weatherization online, along with a host of other services provided by our member community-based agencies. On this basis, OPAE concludes (at 6) that it “absolutely supports fully using the capabilities of a fiber network as proposed by AEP Ohio and paid for by its ratepayers.”

**1. As a threshold legal matter, approval of the fiber proposal under the gridSMART Phase 3 Rider approved in the *ESP IV* proceeding “renders inapplicable” arguments by some commenters that the fiber proposal violates the corporate separation statute, RC 4928.17.**

Ohio Cable Telecommunications Association (“OCTA”) argues (at 7-8) that the fiber proposal would violate R.C. 4928.17. Likewise, Ohio Telecom Association (“OTA”) argues (at 7-9) that the Company as a provider of non-competitive services is prohibited under RC 4928.17 and O.A.C. Chapter 4901:1-37 from selling competitive services or other services, except through a separate affiliate, and from creating an anticompetitive subsidy. As a related matter, OTA argued (at 11-13) that the limited exception for interim functional separation and the recent Duke Supreme Court decision are designed to promote competition in the non-electric market and confirm this result (regardless, AEP Ohio is not asking for an interim corporate separation plan under RC 4928.17(C)). Similarly, IEU argues (at 6-9) that the Commission should restrict

AEP Ohio from providing competitive retail electric services or non-electric products or services, arguing that the service should instead be provided through a separate affiliate.

As a threshold matter, the gridSMART Phase 3 initiative is being implemented under an ESP plan, which is an exception to RC 4928.17. As the Supreme Court of Ohio has held:

In R.C. 4928.17(A), the General Assembly set forth the exceptions to the requirements of that statute. Specifically, R.C. 4928.17(A) begins, “Except as otherwise provided in sections 4928.142 or 4928.143 or 4928.31 to 4928.40 of the Revised Code \* \* \*.” This language signals that R.C. 4928.17(A) is not absolute; it yields to those specifically listed statutes when appropriate. See *State v. Evans*, 102 Ohio St.3d 240, 2004-Ohio-2659, 809 N.E.2d 11, ¶ 15. Moreover, the use of the “[e]xcept as otherwise provided in” language in R.C. 4928.17(A) indicates that the General Assembly has deliberately chosen to qualify the application of that statute in certain situations.

*In re Application of Duke Energy Ohio, Inc., for Approval of its Fourth Amended Corporate Separation Plan*, 148 Ohio St.3d 510 (2016) at ¶ 42 (“2016 Duke Decision”). Here, the Company’s authorization to pursue gridSMART Phase 3 as part of the *ESP IV* decision generally acts as an exception to the otherwise applicable requirements of the corporate separation statute.

Similarly, the Court has held that matters authorized under the ESP statute enable action that might otherwise be explicitly prohibited by other provisions in R.C. Title 49:

We read the “notwithstanding” clause of R.C. 4928.143(B) as allowing an ESP to include items that R.C. Title 49 would otherwise prohibit. This provision expressly states that with certain listed exceptions, any contrary provision of R.C. Title 49 does not apply to an ESP. So even though R.C. 4928.38 bars transition revenue, the “notwithstanding” clause renders R.C. 4928.38 inapplicable if the revenues are recoverable as one of the nine types of provisions listed in R.C. 4928.143(B)(2). Because, as we discuss below, the PPA Rider constitutes one of those types of provisions—specifically, a limitation on customer shopping under R.C. 4928.143(B)(2)(d)—it is permissible even if it otherwise could be deemed to constitute transition revenue.

*In re Application of Ohio Power Co.*, 155 Ohio St.3d 326, 2018-Ohio-4698 at ¶ 19 (“2017-752 Appeals”). Applying these principles to the case at bar, approval of the fiber plan as part of

implementing the gridSMART Phase 3 Rider adopted under the ESP statute “renders inapplicable” any potential technical violation under the corporate separation.

In reality, the fiber proposal does not involve AEP Ohio offering retail service of any kind.<sup>2</sup> And the fiber proposal does not involve provision of a telecommunications service, competitive or otherwise. Rather, the proposal is merely to provide third parties with access to fiber electric distribution *infrastructure* for their own use in providing telecom services and formulating their own fiber backhaul as a wholesale input to formulating a retail service. Legally, this is no different from providing access to a physical conduit, attaching to an electric pole, or subleasing office space to third parties. Thus, even if the Commission were to ignore the above Supreme Court precedent and apply the corporate separation statute without regard to the fact that the gridSMART Rider was adopted under the ESP statute, there are several additional “circuit breakers” that preclude the conclusion – as advocated by commenters – that the fiber proposal violates the corporate separation statute. Moreover, as further discussed below, the Company can file a compliance amendment to its corporate separation plan in conjunction with the Commission’s approval of the fiber plan in this case.

The Commission in the instant case can approve the fiber plan as a reasonable implementation of the gridSMART Phase 3 Rider approved in *ESP IV* and dispose of the corporate separation issues – that would be an especially reasonable and defensible outcome where the Commission, as recommended by Staff and several of the other parties, adopts reasonable competitive and consumer protections as part of that approval (as further discussed

---

<sup>2</sup> An additional discussion is set forth below regarding the Company’s passing statement of potential future interest in providing retail service if the rules change and where no ISPs come forward. See Section E.5, *infra*.

below). The remaining question is whether a decision to adopt the fiber proposal here is within the scope of the ESP statute. As discussed below, the answer is affirmative.

**2. The fiber proposal is lawful as an infrastructure and modernization investment regarding distribution service under Division (B)(2)(h) of the ESP statute**

The Kroger Company and The Ohio Manufacturers' Association Energy Group (jointly, "Kroger/OMAEG") argue (at 3-5) that the Company's fiber proposal is unrelated to the objectives of gridSMART as required by RC 4928.143(B)(2)(h). OTA also contends (at 9-11, 14-15) that the ESP statute does not support the Company's fiber proposal and nothing in the *ESP IV* order contemplated the fiber proposal. As a related matter, OTA claims (at 14) that the Company's authorization for gridSMART is directed at improvements in its distribution plant under R.C. 4928.143(B)(2)(h). Similarly, Interstate Gas Supply, Inc. ("IGS") alleges (at 9-11) that the Company's fiber proposal should be rejected because it does not constitute a distribution service. OCTA also contends (at 10) that the fiber proposal is not supported by the *ESP IV* decision. Reviewing additional background concerning the above-discussed appeals from *ESP III* and *PPA Rider* decisions, as well as understanding the impact of the Court's more recent decision in the *ESP IV* appeals, will help dispel the intervenors' position that the ESP statute does not encompass the fiber proposal as part of gridSMART Phase 3.<sup>3</sup>

---

<sup>3</sup> OTA and IEU make related claims that can be quickly dispatched. OTA also claims (at 16-17) that the overbuild fiber cannot be allowed in rates as the investment will not be used and useful under the traditional ratemaking statute, RC 4909.15. This position also ignores that the gridSMART Phase 3 rider and programs are approved under the ESP statute and not under the general ratemaking statutes. Similarly, IEU proposes (at 9) that the Commission mandate a structure for availability of smart grid technologies that can be also offered by third parties to be available on an opt-in basis with costs bypassable by those that do not opt in. This position also ignores that the gridSMART rider was adopted as a nonbypassable rider.

In the *2017-752 Appeals*, intervenors challenged the Commission’s *PPA Rider* decision to populate the placeholder PPA Rider with the purchased power agreement associated with the Ohio Valley Electric Corporation (“OVEC”). Specifically, intervenors challenged the Commission’s decision in the PPA Rider case to incorporate only the OVEC agreement in the PPA Rider as being unlawful transition revenue under R.C. 4928.38 that does not meet the criteria in division (B)(2)(d) of the ESP statute – all of which was rejected by the Court. *Id.* at ¶ 19, 37-38. In the *2017-749 Appeals*, intervenors challenged the initial adoption of the placeholder PPA Rider as part of the Commission’s *ESP III* decision. *In re Application of Ohio Power Co.*, 155 Ohio St.3d 320, 2018-Ohio-4697 (“*2017-749 Appeals*”). The Court noted that the *ESP III* decision did not permit AEP Ohio to recover any costs through the placeholder rider and required that the Company demonstrate the merits of populating the rider in a subsequent proceeding. *2017-749 Appeals* at ¶ 4. The Court affirmed the Commission’s finding that it did not have to quantify the specific components or costs up front in the first decision and intervenors suffered no legal harm under those circumstances. *Id.* at ¶¶ 11-14, 17.

Even under those circumstances, the two-step process under the ESP statute (*i.e.*, approval of the placeholder rider in an ESP case and later approval of a specific implementation plan for the rider) was sufficient for the Court to conclude that the ESP statute supports the outcome in the second decision. *2017-752 Appeals* at ¶ 25. This factual background highlights the context of the Court’s rulings on the *ESP III* and *PPA Rider* decisions and confirms the impact of this precedent on the case at bar: even where an initial placeholder rider decision did not contemplate the outcome or the specific components to be adopted in a subsequent decision to populate the rider, the ESP statute can still encompass the second decision. So intervenors’

premise that the initial *ESP IV* decision somehow had to specifically reference the fiber proposal is wrong.

Of course, it is important to address how the fiber proposal is properly considered as being encompassed by division (B)(2)(h) of the ESP statute, the provision that the Commission relied upon in adopting the gridSMART Rider. The pertinent statutory language authorizes the Commission to adopt:

*Provisions regarding the utility's distribution service, including, without limitation and notwithstanding any provision of Title XLIX of the Revised Code to the contrary, provisions regarding single issue ratemaking, a revenue decoupling mechanism or any other incentive ratemaking, and provisions regarding distribution infrastructure and modernization incentives for the electric distribution utility.*

R.C. 4928.143(B)(2)(h) (emphasis added). The structure of the language chosen by the General Assembly – provisions regarding distribution service ... and provisions regarding distribution infrastructure – suggests that the latter category of distribution infrastructure and modernization incentives is not necessarily limited to being related to distribution service. Regardless, under a common sense and plain meaning view of the “distribution infrastructure and modernization” and “incentive ratemaking” categories, the fiber proposal would be encompassed within Division (B)(2)(h)’s broad, undefined phrase “regarding the utility’s distribution service.” *Accord Cablevision of the Midwest v. Gross*, 70 Ohio St.3d 541, 545, 639 N.E.2d 1154 (1994) (holding that a reasonable use of a broad, undefined statutory term would be to reflect the General Assembly’s belief that the statute should be broad and inclusive); *see also Sunoco, Inc. (R&M) v. Toledo Edison Co.*, 129 Ohio St.3d 397, 2011-Ohio-2720, 953 N.E.2d 285, ¶ 44 (rejecting the Commission’s unduly narrow construction of the statutory term “arrangement”). Thus, by using broad phrases like “regarding the utility’s distribution service” and “distribution infrastructure and modernization,” the General Assembly has by necessity included within those phrases



programs that are related to distribution service such as the fiber proposal. And as a provision for access to fiber infrastructure by third parties, the fiber proposal is plainly a provision “regarding distribution infrastructure and modernization incentives for the electric distribution utility.” R.C. 4928.143(B)(2)(h).

The Supreme Court’s recent decision rejecting similar challenges in the *ESP IV* appeals concerning the Smart City Rider is instructive here. *In re Application of Ohio Power Co.*, 159 Ohio St.3d 130, 2020-Ohio-143 (“*2018-1396 Appeals*”). In challenging the Smart City Rider, OCC argued as follows:

The Smart City Rider Charge is not “necessary to maintain essential electric service to consumers,” R.C. §§ 4928.141, nor is it “distribution service[.]” R.C. § 4928.143(B)(2)(h). Nowhere in the statutory regime governing Ohio’s electric utilities are they charged with fostering a market, facilitating the travel of a certain type of vehicle within the state (or by citizens of other states to or through the state), or gathering data for a certain industry.

*2018-1396 Appeals*, OCC Merit Brief (Dec. 31, 2018) at 12 (internal citations omitted). Hence, OCC challenged adoption of the Smart City Rider under Division (B)(2)(h) of the ESP statute because the underlying EV charging stations and microgrid equipment was not necessary to provide distribution service and it was not necessary to foster competition in the market through those activities. These points are essentially the same legal challenges being advanced in this case: concluding that the fiber proposal invades a competitive market and is not needed to provide distribution service.

The Supreme Court rejected OCC’s challenge of the Smart City Rider in the *ESP IV* appeal, saying:

The OCC, quoting R.C. 4928.141(A), maintains that the rider is not “necessary to maintain essential electric service” for customers, as that statute requires. However, the OCC cites no case authority holding that R.C. 4928.141(A) limits the provisions in an electric-security plan to those that are necessary to maintain essential electric service, and “[u]nsupported legal conclusions do not demonstrate error,” *In re*

*Comm. Rev. of Capacity Charges of Ohio Power Co.*, 147 Ohio St.3d 59, 2016-Ohio-1607, 60 N.E.3d 1221, ¶ 28. Further, R.C. 4928.143(B)(2)(h) permits an electric-security plan to include certain provisions regarding a utility's distribution service even if other statutes within R.C. Title 49 would otherwise prohibit them. See *In re Application of Ohio Power Co.*, 155 Ohio St.3d 326, 2018-Ohio-4698, 121 N.E.3d 320, at ¶ 19.

*2018-1396 Appeals* at ¶ 30. As a related matter, the Court concluded that “[w]hether a rider is a provision regarding power distribution is a factual question.” *Id.* at ¶ 28. When it comes to factual findings, the Court consistently imposes a “heavy burden for the party challenging an order, because [it] has consistently deferred to the commission’s judgment in matters that require the commission to apply its special expertise and discretion to make factual determinations.” *Ohio Consumers’ Counsel v. Pub. Util. Comm.*, 117 Ohio St.3d 301, 2008-Ohio-861, 883 N.E.2d 1035, ¶ 13; see also *Stephens*, 2004-Ohio-1798, ¶ 16; *Cincinnati Bell Tel. Co. v. Pub. Util. Comm.*, 92 Ohio St.3d 177, 180, 749 N.E.2d 262 (2001); *AT & T Communications of Ohio, Inc. v. Pub. Util. Comm.*, 51 Ohio St.3d 150, 154, 555 N.E.2d 288 (1990); *Cleveland Elec. Illuminating Co. v. Pub. Util. Comm.*, 46 Ohio St.2d 105, 108, 346 N.E.2d 778 (1976).

This section of the Company’s Reply Comments primarily relates to the legal issues and other factual and regulatory policy issues are addressed separately below. But if an EV charging system that is behind the meter and a microgrid that may be used to island a group of customers from the distribution grid can be legally funded under Division (B)(2)(h) as being related to distribution service, it logically follows that leasing of dark fiber strands physically embedded within a distribution network is also permitted under the same statute.

**3. The fiber proposal does not conflict with Ohio energy policies in R.C. 4928.02, as claimed by some commenters, but actually promotes those policies.**

OCTA argues (at 10-12) that the fiber proposal is not supported by the Ohio energy policy statute, RC 4928.02. OCC argues (at 11) that the fiber plan “contradicts” R.C. 4928.02

policy. AT&T Ohio and Ohio Bell Telephone Company (“AT&T”) maintains (at 2-3) a policy argument that dark fiber access is a competitive service that should not be subsidized by monopoly revenues; competitive providers risk their capital and should not have to compete against a utility with guaranteed cost recovery. Kroger/OMAEG maintain (at 9-10) that the fiber proposal allows AEP Ohio to use customer funds to subsidize an unrelated, non-electric competitive business. Kroger/OMAEG conclude (at 7-8) that the fiber proposal violates Ohio law by creating a subsidy from noncompetitive service to support a competitive service in violation of state policy in RC 4928.02(H). Similarly, OCTA claims (at 12-13) that the fiber proposal violates RC 4928.02(H) by creating an anticompetitive subsidy.<sup>4</sup>

Like intervenors in this case, OCC also argued in the *2018-1396 Appeals* from the Commission’s *ESP IV* decision that R.C. 4928.02(H) would be violated because AEP Ohio’s customers were being “asked to subsidize such activity when the vast majority of them will not even be participating or benefitting from these non-distribution service investments.” *2018-1396 Appeals*, OCC Merit Brief (Dec. 31, 2018) at 12. The Court rejected this argument as follows:

The OCC also argues that the demonstration projects constitute an impermissible customer-funded subsidy that violates R.C. 4928.02, which prescribes Ohio’s electric-energy policies. As explained above, if the projects are permitted by R.C. 4928.143(B)(2)(h), they may be included even if they might otherwise violate another provision in R.C. Title 49. Moreover, we held in *In re Application of Ohio Power Co.* that R.C. 4928.02 neither “impose[s] strict conditions” on the PUCO nor “require[s] anything.” 155 Ohio St.3d 326, 2018-Ohio-4698, 121 N.E.3d 320, at ¶ 49. Rather, the policy provisions are guidelines for the PUCO to weigh when

---

<sup>4</sup> OTA also argues (at 17) that under the telecom equivalent of R.C. 4928.02 for energy policy, R.C. 4927.02(A)(3) and (4), it is the policy of Ohio to “[r]ely primarily on market forces, where they exist, to maintain reasonable service levels for telecommunications services at reasonable rates” and “[e]ncourage innovation in the telecommunications industry and the deployment of advanced telecommunications services.” While AEP Ohio disputes OTA’s insinuated factual predicate that market options for fiber access “exist” for the areas unserved by broadband services (as discussed elsewhere), the Company maintains that its fiber proposal is consistent with a policy of relying on market forces “where they exist.”

it considers a utility proposal. *Id.* As in that case, here the PUCO “weighed these policy considerations in reviewing the stipulation” and “[t]hat alone is grounds to reject [the OCC’s] argument.” *Id.*

*2018-1396 Appeals* at ¶ 31. Policy considerations support deployment of dark fiber as part of gridSMART Phase 3.

Public policy promotes efficiency and sharing of facilities, especially when those are located in the public right-of-way. One example of this policy is pole attachments. In its comments, OPAE recognizes the relevance of the pole attachment example and argues that the same model should be followed for the fiber proposal:

AEP Ohio and other utilities are compensated for pole attachments. The payments from cable and other users of the polls is credited back to customers during a rate case. That should be the rule when broadband is leased. The fiber is a utility capital investment. It will receive a return on the investment, initially through the gridSMART Phase 2 Rider. Any revenue generated as a result of the deployment should inure to ratepayers who have paid for the infrastructure. That is a basic principal of regulation.

OPAE Comments at 6.

Ironically, the intervenors that argue loudest against the fiber proposal are the same ones that benefit from the pole attachment protocol: AT&T, OCTA, and OTA. The inconsistency in their position is readily apparent and demonstrates that their arguments should be heavily discounted, if not completely ignored. Another example is that AEP Ohio also sells excess capacity, energy and ancillary services in the market – both relating to OVEC and to its renewable energy purchase agreements that were deemed prudent by the Commission in conjunction with R.C. 4928.64. The real issue is how the proposal is implemented in order to incorporate reasonable consumer and competitive protections while maintaining the proposal’s win-win nature.

**4. The Company’s fiber overbuild proposal is reasonable and sufficiently well-developed**

AT&T argues (at 5-6) that there are too many unanswered questions about the open-ended fiber plan, such as where and how much fiber will be built, whether the routes duplicate other providers, whether other federal programs might overlap with the unserved area, or the total cost. Likewise, OTA criticizes the Company (at 5-7) for failing to address “where” and “how much” for overbuild component of fiber deployment as well as failing to provide a cost-benefit or revenue study. OCTA (at 2) seeks clarification of the Company’s fiber proposal as to whether it will be for a communications system or using radio frequency mesh. Similarly, IEU asserts (at 7) that the Company’s Application lacks sufficient detail to demonstrate that the monopoly utility is best suited for the task of expanding high speed internet into the unserved areas of Ohio. OCTA concludes (at 13-15) that AEP Ohio failed to present crucial details to support the reasonableness of the fiber proposal such as a business case study or a detailed cost/benefit analysis. In the same vein, AT&T alleges (at 3-4) that the Company’s fiber proposal has none of the features the FCC would require for a rural broadband program, such as objective investment criteria, administrative oversight, broadband speed standards, or a commitment to provide retail broadband service.

AEP Ohio’s incremental fiber plan, while simple is well developed. A smart grid field device requires a way to communicate with it. Often, the Company uses wireless to address these communication needs. As an alternative, when deploying smart grid technologies into a community deemed not adequately served by high-speed internet; the plan envisions deploying fiber optic cable to connect these devices.

Specifically, AEP Ohio plans to install fiber to the first device on a DACR, VVO, or D-SCADA circuit in communities that lack high-speed internet connectivity. As well, the Company has anticipated installing fiber to AMI Access Points that are in areas that lack high-

speed internet connectivity and require less than one mile of fiber construction. This plan would allow for the deployment of middle-mile fiber cable into the communities. AEP Ohio would propose to allow the excess capacity within the fiber optic cable to be leased and used by telecom providers to deploy new high-speed internet solutions for the community.

Significant efforts to further refine the proposed fiber deployments are ongoing. AEP Ohio is excited to be in a position to help enable new community telecom services in communities that need them and expect to help enable new high-speed broadband to approximately 90% of the AEP Ohio customers who currently lack these services. AEP Ohio has been working to develop or reinvigorate relationships with the telecom communities in the region. An AEP Ohio affiliate company has had great success in finding and engaging an Internet Service Provider (ISP) or a Wireless Internet Service Provider (WISP) to provide these high-speed internet services to proposed communities in need from the deployment of similarly proposed utility middle mile fiber facilities connecting smart grid field devices. This model is something that could and should be replicated to view the same success in Ohio.

OCC argues (at 11-12) that the fiber proposal is unreasonable because it is not needed for distribution service and the Company is not guaranteeing revenue or the presence of ISP partners to actually offer retail service to customers. IGS alleges (at 9-11) that the Company's fiber proposal should be rejected because it is too expensive compared to the potential savings. Kroger/OMAEG express concern (at 5-7) that the fiber proposal improperly allocates all of the financial risk to customers and all of the potential financial benefits to shareholders. OCC even recommends (at 11-12) rejecting the fiber portion that would be used strictly for smart grid functions as being too expensive.

The Company's proposal to use fiber optic technology on select devices is primarily for the benefits it provides to smart grid technologies. Fiber optic technology is widely recognized as superior to wireless technologies due to increased speed, bandwidth, cyber security, longer life span, reliability, reduced dependency on third party cellular providers, traffic congestion, and maintenance. Further, the D-SCADA candidates included as part of the Company's gridSMART Phase 3 proposal are included in more rural areas. Since these D-SCADA circuits still require communication to the line devices on these circuits, the Company can provide this communication via fiber, thereby extending more rural fiber into these communities.

AEP Ohio finds it rewarding to assist in bringing new high-speed internet service to a community where these services are not available or substandard to other communities. What is even more exciting is the opportunity to do this at a cost lower than what others could. There are two primary reasons for this. First is the dual-use aspect of the proposed fiber optic cables. AEP Ohio will be using the fiber to provide the communication to the proposed smart grid devices but still allowing the excess dark fiber within the cable to be used by the community to enable high-speed internet services. This dual purpose equates to cost savings versus the standard cost of a traditional fiber cable used for a single purpose. Second is the plan to offset the cost of the proposed fiber cost from dark fiber revenues from the ISPs/WISPs to use it to serve the community.

AEP Ohio has proposed that the majority (if not all) of these dark fiber revenues be passed back to the customers. While there may be debate on whether the dark fiber revenue could equal zero; it is hard to debate that this approach will realize a cost per mile that is lower than most or all other options. In addition to the benefits to smart grid technologies, the

Company's proposed fiber provides the important dual benefit of serving as middle mile dark fiber infrastructure to help bridge the rural broadband gap if designed and deployed correctly.

Staff (at 5-6) recommends safeguards to mitigate the risk to ratepayers, if the Company is ultimately authorized to move forward with the project. Staff recommends that the Commission prohibit the Company from providing "last mile" or end-use telecommunication services directly to retail customers. Staff further recommends that the Commission direct the Company to demonstrate that, if it is authorized to deploy the excess fiber capacity, that there are end-use telecommunication services providers willing to bridge the "last mile" gap. Otherwise, there is a risk that ratepayers will be paying for telecommunications infrastructure that is not in-service and has no revenues to offset the costs.

In order to maximize the social benefit of this fiber infrastructure, the Company plans to partner with an ISP during the design and construction of the network, while targeting devices that are approximately one mile or less from Company-owned fiber and within regions that have been defined as unserved or underserved of high-speed broadband as defined by the FCC. The Company's fiber proposal is primarily to enhance smart grid technologies, most notably, fiber optic has a much higher communication speed than wireless, its bandwidth is not constrained, and it is not susceptible to wireless interference. The majority of the cost of installing fiber optic cable is in the engineering, design and construction; the actual overbuild cost from the 48 fibers required for smart grid purposes, to the proposed 96 fibers has a much less significant impact on the overall cost.

AEP Ohio has previously discussed the customer value to deploying fiber option cable with a dual purpose and the effect of customers getting credit for most of the revenue from the excess dark fiber. Another important factor that makes this fiber proposal so value is the



incremental cost approach. The standard installation of a 48-count fiber optic cable is \$50,000 per mile cost. Adding another 48 fibers within the cable increases this cost by only approximately 10%. These three strategies combined result in a value based approach for getting incremental fiber into the community to allow ISPs/WISPs to augment the communities high speed internet needs.

Any doubts about any of these factual matters should be resolved through an evidentiary hearing, where the Company is given the opportunity to address Staff and intervenor concerns.

**5. The competition-related arguments and concerns regarding the fiber proposal raised by some of the commenters are based on false premises or involve issues that can be resolved without rejecting the fiber proposal.**

OTA maintains (at 4) there are many competitive telecom providers today relying on market forces to invest instead of relying on rate-of-return price regulation like AEP Ohio. Similarly, OCTA points out (at 6-7) that there are many existing competitive broadband providers but AEP Ohio is not certified to provide telecom services. But these commenters fail to explain how the utter lack of broadband in unserved areas can be considered competitive. AEP Ohio is proposing to provide fiber access in areas that presently (and historically) are unserved. Staff correctly observes (at 5) that “middle mile” telecommunications service in areas of the Company’s service territory without readily available broadband service is likely not competitive, where the Company can clearly demonstrate that the customers in the area are indeed underserved and that other entities have not already received federal or state funding to provide service in the area.

OTA clarifies (at 15-16) that “[t]he means by which Ohio Power backhauls data from its meters and operates its distribution signaling are not in dispute. What is in dispute is Ohio Power’s unlawful entry into the middle mile communications business and how it finances that

entry.” OTA’s concession that the Company’s internal communications system is materially different from the dark fiber proposal (inadvertently) highlights an important distinction that favors the Company. The Company does “light up” the fiber it uses for distribution/smart grid functions by connecting electronic equipment to the fiber and transmitting signals over the fiber as part of an internal communications system. By contrast, the dark fiber that would be leased to third parties to enable broadband would not be lit by AEP Ohio because the Company would not connect its electronic equipment to the fiber or transmit any signals or communications data over that fiber. Rather, the dark fiber lease would simply permit third-party access to the infrastructure. Stated differently, AEP Ohio would not provide backhaul service, telecom service, or internet service under its fiber proposal; rather, it is merely an opportunity for third parties to lease access to utility infrastructure and formulate their own services.

As a related matter, OCTA points out (at 5) that other providers of this backhaul service such as Crown Castle Fiber and AEP’s own affiliate have applied for public utility certificates from the Commission in order to provide competitive telecommunications services. But again, unlike those situations, the Company’s fiber proposal would passively lease excess dark fiber infrastructure access to ISPs in order to enable *them* to provide retail broadband services. Dark fiber is considered infrastructure that contains a fiber optic cable which has no equipment connected to it and is not transmitting any data. In order for dark fiber to be useful, connection equipment and electronics are required to transmit data.

Crown Castle Fiber provides (and in previous years AEP’s old telecom affiliate provided) lit fiber services, in which they own, provide, and maintain the fiber infrastructure as well as the connection equipment and electronics. Further, AEP Ohio currently owns and leases its excess dark fiber infrastructure to third parties, with the resulting revenues being credited against the

cost of service. So while the scope of the new fiber proposal may be more expansive (albeit limited to unserved areas), it does not transform wholesale infrastructure access to dark fiber into a competitive telecom service.

Staff argues in its comments (at 5) that the corporate separation statute prohibits the Company from providing noncompetitive retail electric service and supplying a non-electric product or service, unless it has been authorized as part of a corporate separation plan approved by the Commission. Based on Staff's conclusion that the Company's proposal includes provision of non-electric telecommunications services, Staff recommends that the Company's existing corporate separation plan should be consistent with the statutory requirements before it begins offering the service. The Company could timely file a corporate separation amendment, if needed; even assuming that an amendment is needed, such an amendment filing would not have preceded the Application in this case. Rather, it would follow approval of the fiber proposal in this case and perhaps be a condition of implementing it. Stated differently, it would have been premature for the Company to file the corporate separation amendment before getting approval of the fiber proposal in this case (and parties would have surely lodged that criticism if the Company had made such an early filing). Staff seems to understand this dynamic though other parties (as discussed above) simply criticize the Company's proposal – wrongly and prematurely – as already violating the corporate separation statute.

In the event the Company is required to submit a corporate separation amendment, as referenced above, Staff (at 5) recommends that documentation supporting the unserved nature of proposed dark fiber deployment areas should be included in the filing. Through this recommendation, Staff seems to confirm that the Company can justify an interim corporate separation plan under R.C. 4928.17 to permit fiber deployment (*i.e.*, to enable wholesale fiber

leasing of dark fiber) where it can show that customers in the area are underserved and that other entities have not already committed to provide retail broadband service in the area based on receipt of federal or state funding. To the extent the Company is required to file a corporate separation amendment as a condition of approving the fiber proposal, Staff's approach seems like a logical and reasonable one.

OTA also describes the fiber proposal (at 13) as AEP Ohio proposing to overbuild the fiber communications system so that it may enter the competitive communications business, initially in the middle mile sector and potentially into the last mile, retail sector. OTA speculates (at 13) that AEP Ohio is "making a long-term play into the competitive communications business" without protections against discriminatory pricing or cross subsidies. As a related matter, much has been made of the Company's passing reference to exploring its role as a backup provider of last resort. Indeed, these intervenors assume that the Company would be providing retail broadband service even though (as discussed above) it is merely leasing access to dark fiber without providing any wholesale or retail telecom service. *See* Section E.2, *supra*. That false premise severely undercuts any credibility to their positions. In reality, AEP Ohio witness Osterholt merely stated in his testimony:

AEP Ohio does not currently plan to offer last mile or end-user broadband service. However, if the rules changed to allow AEP Ohio to offer these services to customers and traditional ISPs did not take the opportunity to expand to these rural customers, AEP Ohio will evaluate the business case associated with offering these services.

(Osterholt Test. at 33.) Thus, the Company merely expressed a potential future interest in evaluating a potential business opportunity if the rules change.

The statement of contingent future interest in evaluating that role if the rules change should not serve as a barrier to approving the current proposal to lease dark fiber infrastructure

for third party access. Stated differently, the Company is fine with a current condition or restriction against providing retail broadband service and does not have any present intention or plan of doing so anyway. If the Commission decides to approve the request, AT&T recommends (at 9) that the Commission impose competitive safeguards to ensure that AEP Ohio does not obtain unfair competitive advantages in the provision of fiber transport. If the Commission determines that it is necessary to impose additional requirements or safeguards, the Company will work with the Commission and Staff to ensure that the fiber deployment is done in a competitively-neutral fashion, promotes availability of broadband service to unserved areas, and is priced fairly.

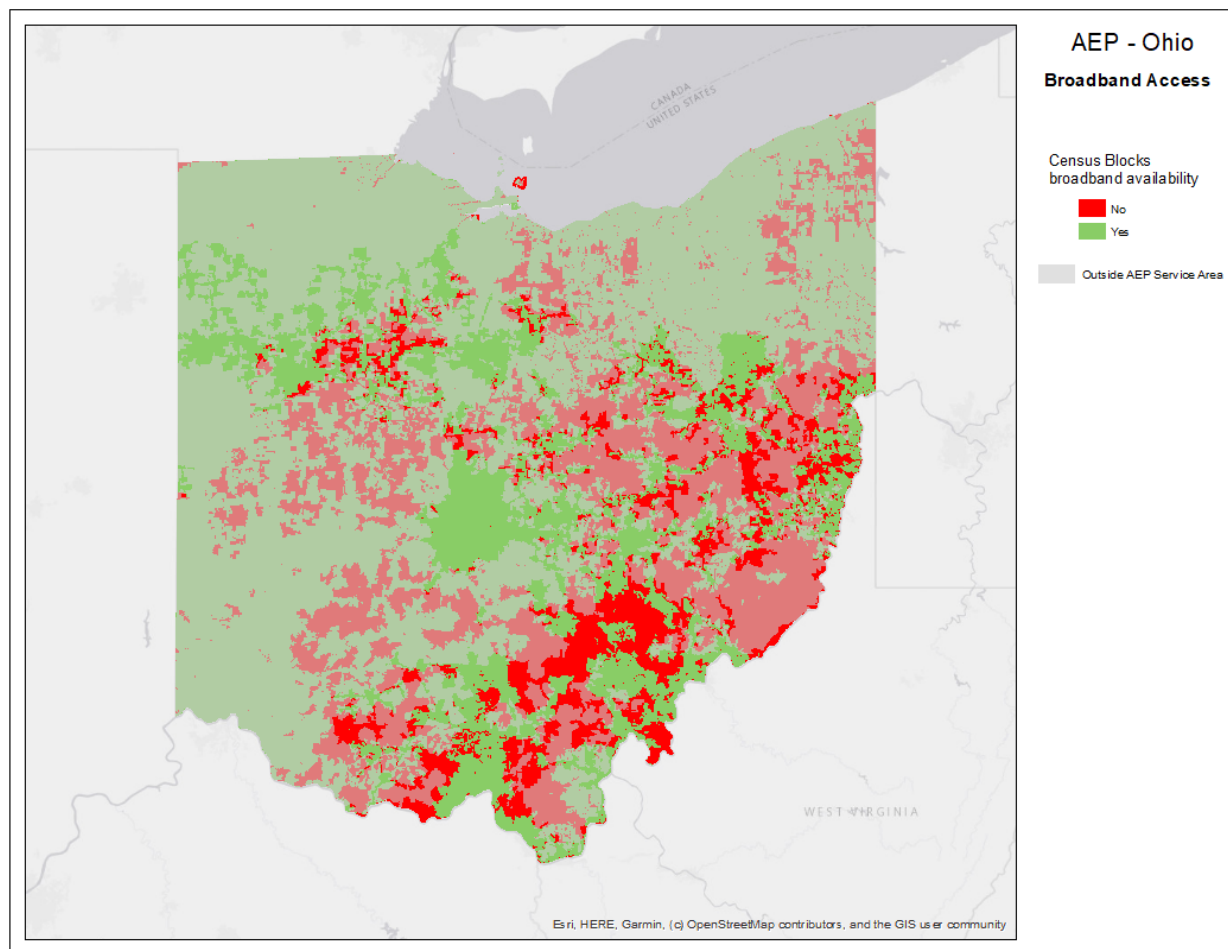
**6. The Company's fiber lease revenue proposal is reasonable but the Company is also open to other reasonable alternatives.**

OPAE recommends (at 4-5) that all revenue from fiber leases should be credited to ratepayers – but OPAE does support the proposed fiber deployment. IEU recommends (at 7) that the Commission reject the Company's sharing proposal for fiber lease revenues since ratepayers are bearing all the risk. Staff recommends (at 6) that the Commission direct the Company to credit all revenues associated with leasing the excess capacity to the gridSMART Rider through the life of the Rider, since the entire cost of the project is being funded by ratepayers through the gridSMART Rider. While the Company continues to believe that its revenue sharing proposal is a reasonable way to incentivize optimal third-party revenues while first covering the incremental investment costs, the Company is open to considering a full revenue credit model as part of a satisfactory package of terms and conditions to resolve this case.

**7. The Commission should not await further action by the Ohio General Assembly or the Federal Communications Commission before ruling on the Company's Application.**

OTA (at 18-20) and IGS (at 9-11) argue that ongoing efforts by the FCC and pending legislation before the Ohio General Assembly, HB 13, are adequate to address the unserved areas of Ohio. Similarly, AT&T concludes (at 6-8) that the FCC's rural broadband efforts are sufficient and dwarf the Company's proposal and render it unnecessary. Not surprisingly, AT&T also recommends (at 8-9) that the Commission should wait for the pilot in HB 13 in order to avoid duplication or working at odds.

Through discovery, the Company provided Staff and intervenors definitive, updated information that shows the substantial unserved areas within and bordering our service territory:



DR-03-001 Supplemental Attachment 1 (Supp. Response as of February 12, 2020). The pervasive level of market failure to remedy the situation, despite decades of opportunity to do so,

is indisputable. The Company's fiber proposal is good public policy and represents an economic and efficient step toward solving the rural broadband problem in Ohio. The Ohio House of Representatives expressed support for the concept when they passed HB 13 during the many months when this case remains pending. But it is simply not known whether the bill will be enacted into law. And although delay and lack of solution will continue to sustain the intervenors' free option on potential future investments, it does nothing to serve the unserved.

OTA also argues (at 20) that the amendment within HB 13 tends to confirm that AEP Ohio does not have authority to build middle mile today and the Commission should just wait to see what happens in the legislature. Similarly, OCTA argues (at 8-9) that AEP Ohio's actions in legislative proposals (HB 247 and HB 13) confirm that the fiber proposal is unlawful. As already demonstrated above, the corporate separation arguments lack merit. Supporting a clarification in HB 13 that confirms corporate separation statute is not violated is good sense and, despite the current legality, would avoid the time and expense of litigation challenges that intervenors will surely pursue to protect their self-serving position. More importantly, the potential fiber deployment under HB 13 would not be done under the gridSMART Rider or the ESP plan and but is an independent program, so the legislative clarification is arguably necessary in that context whereas it is not necessary here. As to HB 247, that is a multi-faceted proposal that would broadly encompass non-electric services unrelated to anything related to broadband or telecom. Trying, as OCTA does, to attribute AEP Ohio's support of that bill to undermine the fiber proposal here assumes too much and smacks of desperation. It is illogical and unfair to use AEP Ohio's support of those legislative proposals to undermine the Company's fiber proposal in this case.

The potential competitive providers of broadband would like to preserve their current free option to provide (or not provide) service in the future if the economic business case improves. But the present lack of broadband is devastating to those rural Ohioans that cannot meaningfully access broadband at a time when it has become even more vital. Now is not the time for the Commission to wait longer to see what, if anything, happens as these intervenors suggest – now is the time to act and help resolve the issue.

**F. The Commission should approve the Company’s proposal to install a distribution line sensor demonstration of 3,100 total sensors on non-SCADA stations, hard-to-patrol segments of Phase 3 DACR circuits, and locations that have not received other reliability improvements to assess that technology’s reliability benefits.**

The Company also proposes a demonstration to deploy 3,100 intelligent distribution line sensors to determine the value of this technology by collecting timely data about the condition of the Company’s distribution system in areas that currently lack this type of visibility. (Osterholt Test. at 35.) Intelligent distribution line sensors are devices that are attached to the distribution lines and continuously monitor various parameters of the lines in real time (*e.g.*, current, voltage, fault currents). These devices use a variety of communication capabilities that can be integrated with AEP Ohio’s existing DMS, SCADA and Outage Management System (OMS) technologies to identify when a fault occurs. (*Id.*) The data from this technology enables AEP Ohio to monitor the state of the grid in real time, more quickly and accurately identify and locate faults and outages, and more efficiently resolve issues to restore service. (*Id.*) The Company plans to continue to deploy this technology in conjunction with current traditional circuit reliability improvement efforts. (*Id.*) Additionally, the Company plans on incorporating this technology with underground residential distribution (URD) cable as part of a program, which would enable quicker restoration. (*Id.*)



The Company is proposing three applications of intelligent distribution line sensors for this demonstration: 900 units on non-SCADA stations, 1,000 units on hard to patrol segments on the Phase 3 DACR circuits, and 1,200 units as a trial to learn the reliability improvements and circuit planning on locations with no other reliability improvement efforts. (*Id.* at 37-38.) As Company witness Osterholt explains, there are benefits associated with each of the three planned deployment applications:

Deploying intelligent distribution line sensors at stations without SCADA improves the visibility of distribution feeders, as well as improves the ability to troubleshoot faults at these stations. Coupling intelligent distribution line sensors on DACR and D-SCADA circuits improves fault location capability, and reduces the amount of time personnel need to locate faults on circuits. Placing intelligent distribution line sensors in various locations that have not been part of other reliability efforts would increase the visibility of these circuits, as well as reduce the amount of time personnel need to locate faults on circuits.

(*Id.* at 38.) AEP Ohio estimates that its intelligent distribution line sensor demonstration will cost approximately \$9.9 million in capital and \$1.8 million in O&M over a five-year deployment period. (*Id.* at 39.)

OCC asserts (at 12) that distribution line sensors are not a new technology that should be funded through the gridSMART Rider but is a normal capital budgeting expenditure that should be invested and recovered in base rates. Line Sensors are not new technology but the intelligent line sensors being proposed are. These are new advanced line sensors that communicate and send advanced data that continues to advance the insight into the distribution grid's performance and ability to reduce the customer's outage exposure. AEP Ohio's approach to deploying these sensors (as described above) is very deliberate to allow the Company demonstrate the reliability improvements from the advanced sensors before proposing a large-scale program.

**G. The Commission should approve the Company's proposal to deploy an incremental VVO pilot through the installation and evaluation of 340 Dynamic Voltage Controllers (Distributed VAR Compensators, or DVCs)**

**units on 20 circuits to analyze options to maximize future customer energy savings, peak demand reduction, and other benefits.**

The Company proposes to deploy a pilot project to assess the incremental performance of power electronics-based, or “incremental” or “Enhanced” VVO technology, an innovation that has emerged to address grid voltage fluctuations that have become visible through the widespread adoption of advanced metering infrastructure. (Osterholt Test. at 39.) In addition to assessing this technology’s incremental performance, the Company’s proposed pilot also would demonstrate successful integration of power electronics-based VVO technologies with the first- and second-generation VVO systems that the Company has previously deployed. (*Id.*)

Company witness Osterholt discusses in detail the Enhanced VVO technology and its potential voltage regulation and operational benefits. (*Id.* at 40-42.) By studying this technology in a pilot setting, the Company will be able to obtain meaningful data that will inform future decision-making and enable it to best maximize customer benefits through the deployment of grid modernization technology. (*Id.* at 41.) The proposed scope of the pilot is modest and would encompass 20 circuits and a cost of approximately \$1.2 million. (*Id.* at 42.)

OCC makes an unsubstantiated claim (at 12-13) that enhanced VVO is not an existing proven technology that can provide used and useful benefits for customers and it should be pursued with corporate funding and not rates. AEP Ohio’s vendor for the enhanced VVO offering is offering a very mature product yielding a solid history of success, such as commercial large-scale multi-thousand-unit deployments currently live and operating at two large IOUs – Xcel Energy in Colorado and one confidential MidWest IOU. This vendor put its first Enhanced VVO circuit in service in 2014 at both Duke Energy and Southern Company. Since the technology has been validated by large IOUs back in 2018, the vendor has deployed a total of more than 150 substations / 400 circuits for more than 5GW of Peak

Load, and with more than 7,000 units currently energized & operating in the field. While results vary based on numerous conditions including baseline voltage levels, numbers of deployed units, and other circuit specifics, this vendor has produced an average of 1.6% voltage “savings” (equivalent to 1.15% energy savings) across deployed Enhanced VVO circuits, with observed performances up to of 5.5% voltage “savings” on certain circuits.

The aspect of this enhanced VVO deployment that is innovative is the approach of layering these VVO technologies together to demonstrate the ability to achieve incremental voltage reductions on top of the base VVO system. The AEP Ohio Grid Modernization team is looking to prove that it is possible to get a 3% voltage savings using the base VVO system as well as another 1% from incorporating AMI data into the base VVO algorithm and finally that the Enhanced VVO system contributes another 1% voltage reduction for a total of 5%. Proving that these VVO efforts layer together to yield a total of 5% would allow the Company to model the costs and customer savings benefit across all of its circuits and lead to a future opportunity to further expand this technology resulting in even more VVO (electrical bill reduction) savings for our customers.

The Enhanced VVO offering is also one promising method to solve the challenges created by high Photovoltaics (“PV”) penetration. The vendor has deployed more than 150 units at HECO to achieve a fast and dynamic response (sub-cycle operation) to PV generation and load changes in order to increase the circuits’ PV hosting capacity by a factor of 2x or 3x, while reducing frequent operation of medium voltage equipment such as tap changes due to high PV penetration.

Enhanced VVO tightly regulates grid voltage and automatically adjusts to keep voltage at targets set by the distribution operator, and provides optimal reactive power in response to local

conditions. It therefore complements the capabilities of advanced inverters to solve the voltage issues observed on the grid (refer IEEE technical papers – SVCs and Smart Inverter Interplay and SVCs to increase solar hosting capacity).

**H. The Commission should approve the Company’s proposal to continue deploying and managing the Company’s It’s Your Power application, which facilitates customer access to AMI interval data.**

AEP Ohio proposes in this proceeding to continue to provide its “It’s Your Power” application, which serves as a platform for customers to access and utilize real-time AMI data, for an additional 5 years. (Osterholt Test. at 44-45.) The Its Your Power app, combined with AMI through an in-home Energy Bridge device, provides for better home energy management and access to real-time usage information, leading to energy savings. (*Id.*) It’s Your Power also provides customers with a wealth of information and resources, including the ability to see disaggregated appliance usage, appliance health and coaching, set budgets, receive notifications, and control other smart connected devices in the home like thermostat, smart lights, and EV charging. (*Id.* at 45.) The app also provides individualized coaching to customers on best actions to take, with personalized tips and information regarding whole house usage. (*Id.*) AEP Ohio estimates that the average annual cost to provide the It’s Your Power app will be \$1.275 million per year for five years. The Company further estimates that approximately 8-9% of customers that receive an AMI meter during the Phase 3 deployment will download the app, and that approximately half of those who download will request and receive an Energy Bridge. (*Id.* at 45-46.)

OPAE (at 6) supports cost recovery through the gridSMART rider for software and applications used by customers to interact with smart meters, such as the It’s Your Power application. The Smart Thermostat Coalition recognizes that AEP Ohio has devoted

considerable resources to Phases 1 and 2 of its gridSMART program. However, in considering whether to approve Phase 3, the Smart Thermostat Coalition recommends (at 9) that the Commission take into account the lessons learned from the first two phases of the AEP Ohio project as well as from numerous research studies of other grid modernization plans. Those lessons indicate that the Commission should require AEP Ohio to abandon its proposed investment in a proprietary It's Your Power app that has thus far proven to be largely ineffective and instead support a properly conceived smart thermostat program that will maximize the benefits of AMI to the AEP Ohio's customers and the entire grid. Regarding the It's Your Power application, ELPC and OEC recommend (at 6) that the program only continue if it is paired with an expanded smart thermostat program.

OCC argues (at 13) that the It's Your Power application should be a competitive service that is not subsidized by ratepayers. AEP Ohio's It's Your Power platform aims to provide its customers with insightful information about energy usage in their home, which includes energy usage disaggregation, recommendations and automated smart device controls, delivering customer benefits as part of the AMI deployment. This customer-side intelligence is focused on customer benefits while maintaining confidentiality and privacy of customer data.

AEP Ohio's It's Your Power app is not a closed system and supports several types of thermostats, including any thermostat that uses the Zigbee or Z-Wave open smart home standard, and can also support any Wi-Fi-enabled thermostat, provided integration support from the thermostat manufacturer. It's Your Power does not require use of the low-cost Powerley Thermostat – it has been featured due to its low-cost and ease of setup and installation for the customer. AEP Ohio has previously pursued integrations with multiple other thermostats and envisions working to further integrate with high customer demand thermostats with a focus on

keeping integrations costs low and customer choice focused. Finally in this regard, IEU argues (at 5) that the Commission should scrutinize the “energy efficiency” components of the It’s Your Power proposal in light of HB 6 and mandate that mercantile customers can opt out of those costs. IEU’s position should be rejected. The fact that some programs/components under the rider happen to have energy efficiency benefits does not change the grid modernization impact or nature. More importantly, the gridSMART Rider approved in the *ESP IV* cases is nonbypassable and does not have an opt-out feature; it would be inappropriate for the Commission to modify the rider in this proceeding.

**I. The Commission should approve the Company’s proposal to add functionality to provide AMI data to competitive retail electric service providers via electronic data interchange for customers on time of use programs.**

Competitive retail electric service (“CRES”) providers currently have access to 15-minute interval AMI data through the CRES Business Partner Portal (“BPP”) that was developed as part of the Company’s gridSMART Phase 2 project on an approximately day-after basis. (Osterholt Test. at 46.) AEP Ohio proposes in this case to expand its data sharing with CRES providers to include sharing AMI interval data for CRES TOU product customers to CRES providers via electronic data interchange (“EDI”) to enable a more automated transmittal of data that is more efficient for the CRES providers. (*Id.*) EDI data automates the gathering of the information for the CRES providers and allows them to have machine-to-machine access to the data. (*Id.* at 46-47.) It would eliminate the current manual process that CRES providers must utilize to access the portal to retrieve the information and add the data to their system in order to bill the customer. (*Id.*) The Company estimates that the cost to provide the described functionality for CRES access to AMI interval data for CRES TOU product customers is approximately \$0.7M. (*Id.* at 47.)

Staff believes (at 4) that the current case is the appropriate forum to address the wholesale settlement issues and data access enhancements necessary to advance the retail market and to better leverage existing AMI deployments before further deploying AMI meters. Staff reiterates the recommendations made in Case No. 17-1234-EL-ATA and recommends that the Commission direct the Company to amend its pending application in this case. Specifically, Staff recommended in that case that “the Commission direct the Company to file supplemental testimony that details a timeline to update the wholesale settlement systems and processes needed to calculate and settle individual THEO, NSPL, and PLC values for all customers with AMI meters. The supplemental testimony should also include the estimated cost of implementation.” Similarly, the Company should detail how this data would be made available to CRES marketers.

As stated in the testimony of Company witness Osterholt, the Company is exploring the expansion of the data access and once complete plans to make a subsequent filing. (Osterholt Test. at 47.) Staff concludes that this is the appropriate case to address the settlement of hourly load through PJM as referenced in its comments in Case No. 17-1234-EL-ATA occurred on May 30, 2019 (only two months prior to the Application being filed in this case). Two months is not a reasonable amount of time to develop a plan to change its complex systems in order to be able to provide a meaningful solution to the Commission. The Company is not opposed to pursuing these solutions in a reasonable manner but imposing that condition should not cause further delay of the current Application.

In particular, the Staff’s recommendation is that the Company provide the cost estimates for the settlement change as well as how the information will be provided to suppliers. It is clear from the comments in this case that the simple outcome-based position of the Staff will not

provide the necessary information the Commission needs to order a reasonable and fair result in this case. The comments suggest that a cost estimate and timeline are only a portion of the information the Commission would need. There are differing opinions in who should pay for these changes, there is no mention in the comments of how the cost-benefit analysis of these changes would be incorporated into the Company's current Application. And there is no clear direction on how to actually achieve the touted benefits without a requirement on the suppliers' part to show how they will provide information to the Commission or how they have utilized the settlement changes to provide benefits to customers.

These are not simple issues and as such, the complexity of this policy should be addressed in a separate proceeding as proposed by the Company. In addition, AEP Ohio's legacy customer information system (CIS) and market-supporting ancillary architecture that processes market settlement and EDI were deployed and based upon technology platforms and tools existing prior to the deployment of AMI metering. As such, changes to these systems and supporting integrations must be well planned and executed to assure resiliency and reliability for Ohio customers and CRES.

Direct Energy recommends (at 2) that the Commission should deny the Application because AEP Ohio does not propose to provide CRES with usable bill-quality data for use by all customers to shop for dynamic CRES provided products. For a competitive market to exist, Direct Energy claims (at 3) CRES must have access to data that will allow them to develop, market, and bill for innovative offerings.

The Company disagrees with Direct's suggestion that it did not fulfill its obligations in the Phase II Stipulation. These arguments were fully discussed by the Company in Case No. 17-



1234-EL-ATA. Direct's assertion that EDI data was ever a requirement in that case is just wrong. The Commission should reject Direct's recommendation.

It is also unclear how two suppliers have two different opinions on the Company's requirement to provide EDI data. Direct asserts that it is necessary to provide EDI data (at 3). However, IGS correctly notes that the suppliers have access to the data and can bill from the data, it is just, according to IGS, a manual process that is archaic and tedious (at 6), for which EDI transactions would make it much easier for the suppliers to analyze the data and bill the customer. It is also worthy of note that the existing AEP Ohio BPP functionality was originally designed and implemented using requirements that were gathered through good faith collaboration with Direct Energy and other CRES, as well as utility contacts that Direct Energy provided AEP Ohio from other markets.

If the Application is approved, Direct Energy recommends (at 4) that the Commission require AEP Ohio to work with parties of the gridSMART Collaborative to develop and implement a plan to provide CRES with equal access to bill-quality data for all shopping customers with AMI meters, to be completed within 6 months from a final order in this proceeding. The Commission should reject Direct's recommendation to work with suppliers through the collaborative process to come up with a plan to provide this data within 6 months. The Commission's decision in this docket should be based on the Company's proposal to file in a separate proceeding as to not delay the current proceeding, or accept the Staff's recommendation to update through testimony the cost to change systems and how the Company will provide the data. To require the collaborative process is not reasonable and that recommendation should be rejected.

IGS claims (at 2) that the Company's Application was developed "with little consideration for data access" and indicates (at 5) that "this disregard ... is disappointing." The sole legal authority cited repeatedly (at 5-6, 8) by IGS in support of this alleged foot-dragging is a new addition to the Ohio energy policy, RC 4928.02(O), which was enacted by the General Assembly *several months after the Company filed its Application in this case*. IGS also maintains (at 6) that the capability to receive a customer's interval data through an automated EDI transaction makes the data more readily available to analyze for forecasting, usage insight, and scheduling purposes is included in FirstEnergy's and Duke's data access commitments (Settlements in Case Nos. 16-481-EL-UNC and 17-32-EL-AIR).

The simple language of RC 4928.02 (O) states: *(O) Encourage cost-effective, timely, and efficient access to and sharing of customer usage data with customers and competitive suppliers to promote customer choice and grid modernization*. The Company currently has fifteen-minute interval data for every customer with an AMI meter on its business partner portal. IGS's argument that EDI transactions make it easier for suppliers does not indicate that the Company is required to provide the data through EDI and it certainly does not indicate that customer's should pay for such changes through a grid modernization filing.

IGS recommends (at 3-4) that the Commission order AEP Ohio to upgrade its systems and processes for wholesale market settlements (*i.e.*, THEO, PLC and NSPL) making the interval data through pre-enrollment lists and EDI, consistent with Rule 4901:1-10-24. Further, IGS recommends (at 7) that CRES access AMI interval usage data via EDI and enable machine-to-machine application program interface (API). As previously discussed, the Company disagrees that consideration of the Application in this case needs to be unnecessarily delayed and, instead, maintains that the interval data issues should be addressed in a different proceeding.

The Company is not unwilling to look into its systems to provide the costs and other information, but is not in agreement that this proceeding should be held hostage.

IGS notes (at 8-9) that the AEP Ohio's online Letter of Authorization (LOA) process is a positive step but recommends "minor" enhancements to establish electronic notification of CRES when a customer consents to sharing data and to establish a new process so customers can provide consent without logging into their account. The Company disagrees with IGS's proposal. The LOA process of sharing AMI data through the BPP was already addressed through the gridSMART collaborative through multiple meetings participated in by multiple stakeholders. AEP Ohio considers our responsibility for customer data very important and the customer logging in to share their information with third parties is what we believe to be a security point that ensures the safety and security of their data. The Company should not be required to provide any additional analysis on its LOA process and be required to spend additional time and money conducting such an analysis. The additional work for this special request can be utilized elsewhere in the business and the Commission should not order the Company to provide additional analysis at the request and benefit of one supplier, particularly when the process has previously been addressed through the collaborative process.

Finally, OCC (at 14) opposes recovery of the expenditure for expanding access to interval usage data and concludes that the costs should be borne by CRES providers that are interested in accessing the data. By contrast, IGS proposes (at 7) to get broad access without any fees. The Company submits that OCC's position is not unreasonable.

In sum, the Company reiterates that for the reasons stated above and the significantly differing opinions around the recovery responsibility and cost of settling hourly load data for all customers with AMI, providing all hourly load through EDI transactions and how the suppliers

can provide data to support the benefits they bring to the customers once the Company is able to set up the appropriate systems to settle on an hourly basis, these analyses, as proposed by the Company, are better addressed in a separate proceeding.

**J. The Commission should approve an operational savings credit that reflects actual savings and that credit can be updated as the savings level increases.**

Staff observes (at 6) that the Company references a number of operational benefits associated with the deployment of gridSMART Phase 3, e.g. reduction in meter reading and bad debt expenses, but has not proposed to credit the estimated savings to the gridSMART Rider. As such, Staff recommends that the Commission direct the Company to amend the gridSMART Phase 3 Application with an estimated operational cost savings credit for gridSMART Phase 3. Finally, in order to help ensure that the deployment of the program is cost-effective, Staff recommends that the Commission cap the total spending on all approved program components to the estimated spending amounts included in the gridSMART Phase 3 Application.

The Company expects any operational savings to flow through to customers through base rates. The Company is agreeable to provide operational savings credits through the rider once they are based on actual quantifiable savings such as labor reductions associated with meter reading once the deployment of AMI is complete. However, the issue with providing the credits through the rider occurs when there are unquantifiable savings. OCC's comments in this case regarding the savings credit of \$8M being well below the promised savings of \$200M is the perfect example. The amount of savings flowing through the rider were agreed upon through the operational savings audit that occurred. It is known that the entire \$200M is not a rider rate adjustment as was clarified in the operational savings audit in Case No. 18-1618-EL-RDR. Customers through other forms, not necessarily the rider rate adjustments, can recognize these savings. The Company is not opposed to passing back savings but the Company is opposed to

passing back unquantifiable savings or savings that are assumed inherent in the deployment. As such, the Company's proposed filing did not estimate savings and assumes the appropriate time to pass back these savings are through a base rate case.

The Commission should reject Staff's recommendation of a cap on the spending. The Company filed its application in this case in 2019. It is now over a year later and there are comments being filed. The Company's application in Case No. 13-1989-EL-RDR was filed in 2013 and a Stipulation approved in 2017. It is unreasonable that the Staff does not rely on the audit of the annual riders to determine prudence of expenses. While the Company does not view the lack of a cap as a blank check, it does recognize that as time goes by, costs could increase from the levels included in the initial estimate, especially given the timeline of the proposed implementation. Indeed, the Staff's recommendation in this case that the Company be required to provide costs of hourly load settlement in this proceeding in itself will delay the implementation of the technologies and in itself increase the risk of cost changes as time goes on. The Staff has the ability to audit the expenditures of the Company to ensure that the dollars spent are prudent. There is not a need to set a cap on the spending. The Company should collect the cost of providing service to customers based on its *prudently* incurred costs. The risk of changes in costs for materials and labor from the date of filing to the date of implementation should not be borne by the Company.

### **CONCLUSION**

For the foregoing reasons and based upon the detailed information contained in the Company's Application and supporting testimony, AEP Ohio respectfully requests that the Commission approve its gridSMART Phase 3 Application as proposed.

Respectfully submitted,

/s/ Steven T. Nourse

Steven T. Nourse (0046705), Counsel of Record

Christen M. Blend (0086881)

American Electric Power Service Corporation

1 Riverside Plaza, 29th Floor

Columbus, Ohio 43215

Telephone: (614) 716-1608 / 1915

Email: [stnourse@aep.com](mailto:stnourse@aep.com)

[cmblend@aep.com](mailto:cmblend@aep.com)

(willing to accept service by e-mail)

**Counsel for Ohio Power Company**

## **CERTIFICATE OF SERVICE**

In accordance with Rule 4901-1-05, Ohio Administrative Code, the PUCO's e-filing system will electronically serve notice of the filing of this document upon the following parties. In addition, I hereby certify that a service copy of the foregoing *Reply Comments* was sent by, or on behalf of, the undersigned counsel to the following parties of record this 25<sup>th</sup> day of September 2020, via electronic transmission.

/s/ Steven T. Nourse

Steven T. Nourse

### **EMAIL SERVICE LIST**

paul@carpenterlipps.com;  
BarthRoyer@aol.com;  
bethany.allen@igs.com;  
ccox@elpc.org;  
cmooney@ohiopartners.org;  
ctavenor@theoec.org;  
dparram@bricker.com;  
drinebolt@opae.org;  
dborchers@bricker.com;  
Fdarr2019@gmail.com;  
glpetrucci@vorys.com;  
jkylercohn@BKLawfirm.com;  
Joe.Oliker@igs.com;  
Bojko@carpenterlipps.com;  
fykes@whitt-sturtevant.com;  
whitt@whitt-sturtevant.com;  
mpritchard@mwncmh.com;  
mfleisher@dickinsonwright.com;  
mkurtz@BKLawfirm.com;  
Michael.Nugent@igs.com;  
mleppla@theOEC.org;  
mo2753@att.com;  
nvijaykar@elpc.org;  
tdougherty@theOEC.org;  
William.Michael@occ.ohio.gov;

**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**9/25/2020 3:24:04 PM**

**in**

**Case No(s). 19-1475-EL-RDR**

Summary: Comments -Reply Comments of Ohio Power Company in Support of Its  
gridSMART Phase 3 Application electronically filed by Mr. Steven T Nourse on behalf of Ohio  
Power Company