THE PUBLIC UTILITIES COMMISSION OF OHIO

IN THE MATTER OF THE APPLICATION OF OHIO POWER COMPANY TO INITIATE PHASE 2 OF ITS GRIDSMART PROJECT AND TO ESTABLISH THE GRIDSMART PHASE 2 RIDER.	CASE NO. 13-1939-EL-RDR

OPINION AND ORDER

Entered in the Journal on February 1, 2017

I. SUMMARY

{¶ 1} The Commission approves the Stipulation, as modified herein, and Ohio Power Company's application to implement Phase 2 of its gridSMART Project and the related tariff rider provisions.

II. APPLICABLE LAW

{¶ 2} Ohio Power Company, d/b/a AEP Ohio (AEP Ohio or the Company), is an electric distribution utility as defined in R.C. 4928.01(A)(6) and a public utility as defined in R.C. 4905.02, and, as such, is subject to the jurisdiction of this Commission.

{¶ 3} R.C. 4928.02 declares that the policy of the State of Ohio regarding competitive electric retail service includes the following goals:

(A) Ensure the availability to consumers of adequate, reliable, safe, efficient, nondiscriminatory, and reasonably priced retail electric service;

(B) Ensure the availability of unbundled and comparable retail electric service that provides consumers with the supplier, price, terms, conditions, and quality options they elect to meet their respective needs;

(C) Ensure diversity of electricity supplies and suppliers, by giving consumers effective choices over the selection of those

supplies and suppliers and by encouraging the development of distributed and small generation facilities;

(D) Encourage innovation and market access for cost-effective supply- and demand-side retail electric service including, but not limited to, demand-side management, time-differentiated pricing, waste energy recovery systems, smart grid programs, and implementation of advanced metering infrastructure;

(E) Encourage cost-effective and efficient access to information regarding the operation of the transmission and distribution systems of electric utilities in order to promote both effective customer choice of retail electric service and the development of performance standards and targets for service quality for all consumers, including annual achievement reports written in plain language;

(F) Ensure that an electric utility's transmission and distribution systems are available to a customer-generator or owner of distributed generation, so that the customer-generator or owner can market and deliver the electricity it produces;

(G) Recognize the continuing emergence of competitive electricity markets through the development and implementation of flexible regulatory treatment;

(H) Ensure effective competition in the provision of retail electric service by avoiding anticompetitive subsidies flowing from a noncompetitive retail electric service to a competitive retail electric service or to a product or service other than retail electric service, and vice versa, including by prohibiting the

recovery of any generation-related costs through distribution or transmission rates;

(I) Ensure retail electric service consumers protection against unreasonable sales practices, market deficiencies, and market power;

(J) Provide coherent, transparent means of giving appropriate incentives to technologies that can adapt successfully to potential environmental mandates;

(K) Encourage implementation of distributed generation across customer classes through regular review and updating of administrative rules governing critical issues such as, but not limited to, interconnection standards, standby charges, and net metering;

(L) Protect at-risk populations, including, but not limited to, when considering the implementation of any new advanced energy or renewable energy resource;

(M) Encourage the education of small business owners in this state regarding the use of, and encourage the use of, energy efficiency programs and alternative energy resources in their businesses; and

(N) Facilitate the state's effectiveness in the global economy.

{¶ 4} In carrying out this policy, R.C. 4928.02 directs the Commission to consider rules as they apply to the costs of electric distribution infrastructure, including, but not limited to, line extensions, for the purpose of development in this state.

{¶ 5} R.C. 4928.141 provides that an electric distribution utility shall provide consumers within its certified territory a standard service offer (SSO) of all competitive retail electric services necessary to maintain essential electric services to customers, including a firm supply of electric generation services. The SSO may be either a market rate offer in accordance with R.C. 4928.142 or an electric security plan (ESP) in accordance with R.C. 4928.143.

III. PROCEDURAL HISTORY

{¶ 6} On August 8, 2012, the Commission issued its Opinion and Order in Case No. 11-346-EL-SSO, et al. (*ESP2 Case*), approving AEP Ohio's second ESP, which included the Company's request to initiate Phase 2 of its gridSMART (GS2) project. The Commission directed AEP Ohio to file its proposed expansion of the gridSMART project as part of a new gridSMART application and include sufficient detail on the proposed equipment and technology for the Commission to evaluate the demonstrated success, cost-effectiveness, customer acceptance, and feasibility of the proposed technology. Further, any gridSMART investment beyond Phase 1 that was not subject to recovery through AEP Ohio's distribution investment rider (DIR) was directed to be recovered through a gridSMART Phase 2 rider (GS2 Rider).[1]

{¶ 7} On February 25, 2015, the Commission approved AEP Ohio's request to transfer the remaining gridSMART Phase 1 costs to the Company's DIR, and to use the gridSMART rider to track GS2 costs, in AEP Ohio's third ESP case. *In re Ohio Power Co.*, Case No. 13-2385-EL-SSO, et al. (*ESP 3 Case*), Feb. 25, 2015 Opinion and Order at 51-52.

{¶ 8} On September 13, 2013, AEP Ohio filed the Application (AEP Ohio Ex. 2) in the above-captioned docket, to establish a GS2 Rider as the mechanism to recover any gridSMART project investment beyond Phase 1. The application originally requested that the proposed expansion include Advanced Metering Infrastructure (AMI) for

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[1] *In re Columbus Southern Power Co. and Ohio Power Co.*, Case No. 11-346-EL-SSO, et al., Opinion and Order (Aug. 8, 2012) at 62-63.

approximately 894,000 customers, Distribution Automation Circuit Reconfiguration (DACR) for approximately 250 priority circuits, and Volt/VAR Optimization (VVO) for approximately 80 circuits. The Company proposes that the GS2 rider will operate in a similar manner as the Company's gridSMART rider for Phase 1, with an annual true-up and reconciliation.

{¶ 9} By Entry issued on October 2, 2013, the attorney examiner directed that motions to intervene be filed by October 25, 2013, and that initial and reply comments be filed by November 1, 2013, and November 18, 2013, respectively.

{¶ 10} Motions to intervene and comments were filed by the Ohio Consumers' Counsel (OCC), Ohio Partners for Affordable Energy (OPAE), Environmental Defense Fund (EDF), Interstate Gas Supply, Inc. (IGS), Ohio Environmental Council (OEC), Ohio Hospital Association (OHA), Retail Energy Supply Association (RESA), Environmental Law & Policy Center (ELPC), Direct Energy Business, LLC and Direct Energy Services, LLC (jointly, Direct Energy), and FirstEnergy Solutions Corp. (FES). Industrial Energy Users-Ohio (IEU-Ohio) also filed comments and a motion to intervene, but subsequently withdrew its motion on December 18, 2015.

{¶ 11} On April 7, 2016, AEP Ohio filed a Stipulation and Recommendation (GS2 Stipulation) that was joined by Direct Energy, IGS, OHA, EDF, OEC, FES, and Staff. On April 11, 2016, OCC filed correspondence indicating it would oppose the Stipulation at hearing.

{¶ 12} On April 20, 2016, AEP Ohio filed the direct testimony of Company witnesses Scott S. Osterholt, Director of Distribution Risk and Project Management, and Andrea E. Moore, Director of Regulatory Services, in support of the GS2 Stipulation; and Direct Energy filed the direct testimony of Teresa Ringenbach, Senior Manager of Government and Regulatory Affairs, Midwest, in support of the Stipulation.

{¶ 13} On June 14, 2016, the attorney examiner issued an entry setting a procedural schedule for the filing of testimony, and scheduling an evidentiary hearing for July 19, 2016. The entry also granted the motions to intervene of OCC, OPAE, EDF, IGS, OEC, OHA, RESA, ELPC, Direct Energy, and FES. On June 20, 2016, the attorney examiner issued an entry modifying the procedural schedule and rescheduling the hearing for August 1, 2016, at the request of the parties.

{¶ 14} On June 21, 2016, Staff filed the direct testimony of James W. Schweitzer, Public Utilities Administrator in the Research and Policy Division of the Rates and Analysis Department, in support of the Stipulation.

{¶ 15} On July 22, 2016, the OCC filed the direct testimony of Peter J. Lanzalotta, principal with Lanzalotta & Associates, LLC, James D. Williams, Senior Consumer Protection Research Analyst, and Wilson Gonzalez, President of Tree House Energy and Economic Consulting, LLC, in opposing the GS2 Stipulation. Revisions to the testimony of OCC witnesses Gonzalez and Lanzalotta were filed July 29 and August 1, 2016, respectively.

{¶ 16} The hearing of this matter was held on August 1 through 3, 2016. Rebuttal testimony was filed by AEP Ohio witness Osterholt on August 8, 2016, and the hearing was concluded with his cross-examination on August 15, 2016.

{¶ 17} Initial briefs were filed on September 2, 2016, by AEP Ohio, Staff, IGS, and Direct Energy in support of the Stipulation; and by OCC and OPAE in opposition to adoption of the GS2 Stipulation without modification. Correspondence in support of the Stipulation was also filed by RESA on September 2, 2016, and by EDF and OEC on September 12, 2016. Reply briefs were filed by AEP Ohio, Staff, IGS, Direct Energy, OCC, and OPAE on September 16, 2016.

{¶ 18} On December 28, 2016, the Company and OCC filed a joint statement regarding OCC's withdrawal of its opposition to the Stipulation in this docket pursuant

to the stipulation filed in Case No. 10-2929-EL-UNC, et al., on December 21, 2016, (Global Settlement). Under the Global Settlement, OCC agreed not to contest the GS2 Stipulation conditioned upon the Commission's adoption of an annual audit for prudency and review of the operational cost savings credit in this proceeding. Upon adoption of both the AEP Global Settlement and the GS2 Stipulation, residential customers will be allocated 45 percent of the GS2 costs (as opposed to 62.4 percent proposed in the GS2 Stipulation) on a going forward basis and for the remainder of the GS2 recovery. The remaining 55 percent of the GS2 costs will be allocated to other rate schedules in proportion to the existing allocation.

IV. SUMMARY OF THE STIPULATION

{¶ 19} As noted above, the GS2 Stipulation is supported by AEP Ohio, Staff, Direct Energy, IGS, OHA, FES, OEC and EDF (collectively, the Signatory Parties). RESA did not sign the Stipulation but filed correspondence supporting the Company's GS2 deployment and the establishment of an AEP Ohio gridSMART Collaborative. OCC presented testimony of three witnesses and filed initial and reply briefs opposing the Commission's adoption of the GS2 Stipulation, but subsequently withdrew its opposition. OPAE does not directly oppose the GS2 Stipulation, but requests that the Commission make certain modifications to its terms in the interests of low-income residential customers. A summary of the notable provisions is set forth below.

A. Business Case Development

{¶ 20} The GS2 Stipulation notes that the Company submitted its Business Case for GS2 as Attachment A to its Application in this case, which demonstrated a benefit-cost ratio of 2.8 on a cash basis and 2.0 on a net present value basis. Based on additional compromises agreed to by the Company, such as an operational cost savings credit and additional Volt/VAR Optimization (VVO) deployment,[2] the benefit-cost ratio remains

[2] VVO refers to technology which monitors the voltage and the reactive power needs on each segment of a distribution circuit and adjusts each on a segment-by-segment basis, thereby lowering the overall average voltage on the distribution circuit and reducing loads and consumption.

the same even with additional investment. Moreover, the GS2 Stipulation expressly provides that there will be a formal evaluation of benefits to be reported which will serve to further illustrate the benefits associated with the proposed implementation so that no further Business Case development is necessary. (Jt. Ex. 1 at 4.)

B. DACR and AMI Feasibility Studies and Deployment

{¶ 21} The GS2 Stipulation promises that AEP Ohio will use best efforts to submit engineering feasibility and selection studies for DACR and AMI scopes of work as proposed in the Application within one year of approval of the GS2 Stipulation. Further, the Company will move forward with deployment of AMI meters and DACR while the feasibility and selection studies are being finalized. The Company's installation of approximately 894,000 AMI meters is expected to take approximately forty-eight months from approval of the GS2 Stipulation. As part of this effort, the Company will initiate efforts to develop the needed systems and/or processes to provide customers and CRES providers with customer interval data. Where possible, the Company will develop such systems and processes using a phase-in approach, and transfer as much data as possible to customers and CRES providers through the implementation stages. (Jt. Ex. 1 at 4-5.)

{¶ 22} The DACR deployment will involve a total of 250 circuits and is expected to take approximately 72 months from approval of the GS2 Stipulation. The Company will work with Staff in determining the location of DACR deployment to prioritize those circuits that have been the worst performing in recent years and identify those circuits which will yield maximum customer reliability benefits for the 250 circuits. (Jt. Ex. 1 at 5.)

C. Full System Feasibility Study and Phase 3

{¶ 23} In conjunction with the GS2 feasibility and selection studies described above, the Company will conduct a feasibility study that encompasses all circuits and all meters to determine the full extent of cost justified future possible deployments of AMI, DACR, and VVO (including Volt-Amp Reactive power and Conservation Voltage

Reduction technology), with the VVO cost/benefit study broken down by distribution circuit and substation to determine the total amount of cost-effective investment. Any additional future deployments of smart grid technology will be determined through a potential gridSMART Phase 3 rider filing based upon completion of GS2, including a cost/benefit study and a proposal for seeking cost recovery of deployment of all cost-effective VVO technology. AEP Ohio will not seek any additional incentive for installing the equipment or shared savings for any resulting energy savings. (Jt. Ex. 1 at 5-6.)

D. DACR Performance Reports

{¶ 24} With respect to the DACR implementation, the GS2 Stipulation provides two measurement metrics, with a penalty provision that will be determined by the Commission if neither target is met. The Company will provide Staff with annual reports by August 15th of each year through 2021 of performance improvements for the prior year ending June 30 for Phase 2 circuits equipped with DACR for more than six months. The first report will be due when there are at least 10 circuits that have had DACR technology installed for at least six months. The Company commits to achieving a 3-year average annual improvement of 15.8 percent, excluding major events, in the AEP Ohio System Average Interruption Frequency Index (SAIFI),[3] on the aggregated performance of DACR-installed circuits, when compared with the SAIFI performance for the same circuits that would have occurred without the DACR installation. Since reliability improvement has many factors outside of the Company's control, the GS2 Stipulation contains a secondary metric regarding successful operation of the DACR systems to be used if the SAIFI savings target is not reached.

{¶ 25} For this secondary metric, the Company expects to achieve an 80 percent successful operation of the DACR systems using a 3-year rolling average for the aggregate of circuits equipped with DACR more than six months. The secondary metric

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[3] SAIFI is the system average interruption frequency index, a measure of the number of outages an average customer experiences in a year.

will only be evaluated if the group of circuits experienced an average of at least 15 reconfigurable events per year and will incorporate factors agreed to by Staff and the Company. If the minimum requirement of 15 reconfigurable events is triggered for a particular year, that year will be excluded from the 3-year rolling average calculations and an additional historical year will instead be included. If neither measure is met, the Company will submit to Staff the reasons both measures were not met as well as an action plan in order to meet the measures the following year. If the commitment is missed two consecutive years, the Company is required to file a report explaining its failure and show cause as to why the misses should not constitute a violation of the GS2 Stipulation with consequences to be determined by the Commission (Jt. Ex. 1 at 6).

E. Volt/VAR Optimization for SEET Investment

{¶ 26} The GS2 Stipulation provides that the Company will make a capital investment of at least $20 million through installation of VVO technology on 160 circuits, with the associated costs to be recovered under the GS2 rider with no shared savings or return on investment incentive. The VVO investment will resolve the Company's outstanding obligation for a $20 million renewable or similar investment arising from AEP Ohio's 2009 Significantly Excessive Earnings Test (SEET) proceeding in Case No. 10-1261-EL-UNC (*2009 SEET Case*). Any lost distribution residential revenues associated with the VVO deployment shall be recovered through the current decoupling pilot approved in Case No. 11-351-EL-AIR[4] or another mechanism if that pilot ends prior to the filing of a base distribution case after the VVO installation. The GS2 Stipulation also provides that the Company will implement another mechanism to recover any lost distribution revenue associated with demand- metered commercial and industrial class customers. The Signatory Parties have also agreed that the Commission can sever this provision from any adoption of the GS2 Stipulation without triggering a withdrawal by those parties. (Jt. Ex. 1 at 6-7.)

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4 *Columbus Southern Power Co.*, Case No. 11-351-EL-AIR, et al., Dec. 14, 2011, Opinion and Order at 9.

{¶ 27} AEP Ohio will work with Staff and OHA members to prioritize the Company's VVO deployment, which is expected to take approximately 72 months from approval of the GS2 Stipulation. AEP Ohio will file annual reports with the Commission stating the amount of energy reductions, peak demand reduction, and monetary savings and greenhouse gas emission reductions, resulting from this equipment. (Jt. Ex. 1 at 7.)

F. gridSMART Collaborative

{¶ 28} The GS2 Stipulation also calls for the creation of an AEP Ohio gridSMART Collaborative (GS2 Collaborative), separate from the existing EE/PDR Collaborative that will be open to all stakeholders through the GS2 deployment. The GS2 Collaborative will advise on the benefit analysis, structure of time of use rate offerings, provide deployment updates and annually report the level of customer savings being achieved, review customer enrollment activities as well as customer and CRES provider access to interval data, and possible ways for customers to connect in-home technologies with real time electric usage data, and to review performance and environmental metrics. (Jt. Ex. 1 at 7.)

G. Time Differentiated Rates and other gridSMART Tariffs

{¶ 29} The GS2 Stipulation provides that the Company will work with Staff and CRES providers to administer a Time-of-Use (TOU) Transition plan. The signatory CRES providers (Direct Energy, IGS, and FES) agree to develop programs similar to the Company's SMART Shift (2-tier Time of Use), SMART Shift Plus (3- tier TOU plus Critical Peak Pricing), and SMART Cooling (Thermostat) programs within 6 months of the GS2 Stipulation being adopted, using the same on/off peak meter program structure. The GS2 Stipulation specifies that the costs associated with the TOU plan and interval data portal will be recovered through the GS2 rider, but also provides that if the Company is at fault in delaying implementation of this initiative, the Commission may consider reducing the recovery of GS2 costs. As part of the transitional period, the Company will enable CRES providers to provide rate-ready and bill-ready billing for time of use rates that meet the same criteria of AEP Ohio's SMART Shift and SMART Shift plus. In addition, the

Company will support bill-ready billing for customers on CRES Smart Cooling programs, where compliance and customer credit calculations will be performed by the supplier. AEP Ohio also commits to allowing CRES settlement using actual load data from TOU customers, and will add an AMI flag to the enrollment list to allow CRES providers to identify customers with an AMI meter. (Jt. Ex. 1 at 7-8.)

{¶ 30} After the above steps have been completed, the Company will provide customer communications for approximately six months to inform customers of their options and to aid customers in moving to CRES TOU programs. Within 90 days of the adoption of the GS2 Stipulation, the Company will also propose a simple two-tier, non-technology TOU rate reflecting default load auction prices for AMI customers to be used if the CRES TOU market has, in the Commission's judgement, not evolved to be sufficiently competitive after the Customer communication phase. (Jt. Ex. 1 at 8.)

{¶ 31} Within 90 days after completing the necessary system changes and customers outreach steps, the Company and Staff will file a joint report containing the latest data available concerning CRES TOU offerings. Within 90 days after the report is filed, the Commission will either determine if the CRES TOU market is sufficiently competitive or establish a process for reaching that determination. If the Commission deems the CRES TOU offers are sufficiently competitive, the Company's simple AMI TOU tariff filing will be dismissed and the Company's application to withdraw its existing experimental TOU tariffs in Case No. 13-1937-EL-ATA will be deemed approved and such tariffs will be discontinued. The Company agrees to work with customers who have not enrolled in a CRES TOU to transition them to a program of their choice including CRES TOU or the Company's SSO rate. If the Commission deems that the CRES programs are not sufficiently competitive, the Commission will grant the Company's application in Case No. 13-1937-EL-ATA, and authorize the Company's newly-proposed AMI TOU program until the market becomes sufficiently competitive. (Jt. Ex. 1 at 8-9.)

{¶ 32} AEP Ohio will also develop a CRES AMI interval data portal approximately 24 months after approval of the GS2 Stipulation to allow CRES providers to offer more strategic and competitive TOU options and programs. After completion of the portal, AEP Ohio's system will allow for CRES settlement using actual load data for all CRES TOU customers. The Company will also install a communication module within the AMI meters to facilitate program offerings with in-home technologies. (Jt. Ex. 1 at 9.)

H. GS2 Rider Recovery and Operational Cost Savings Credit

{¶ 33} Costs incurred for the GS2 project will be recovered through a GS2 rider rate filed quarterly with automatic approval 30 days after the filing unless otherwise determined by the Commission. These costs will be subject to an annual audit for prudency, and no carrying charges will be imposed on over/under recoveries due to quarterly collections. The costs will be allocated and recovered from customers in the same manner as gridSMART Phase 1. Upon Commission approval of the GS2 Stipulation, the Company will move the approved gridSMART Phase I assets to the DIR and file for any unrecovered O&M expenses in a GS2 rider application. Because meters are capitalized at the time of purchase, the value of uninstalled gridSMART meters authorized for recovery through this Rider shall, on average, include only the aggregate supply necessary for approximately three months of meter deployment activity. Uninstalled meters in excess of this limitation will not be eligible for recovery through any other rider. (Jt. Ex. 1 at 9-10.)

{¶ 34} Concurrent with the inclusion of costs in the GS2 rider, a credit reflecting projected operational cost savings will be incorporated to offset costs otherwise recovered through the rider. The initial cost savings credit will be $400,000 per quarter starting in the fourth quarter of the first year, which will extend until the Commission adopts a new operational cost savings credit as described below. (Jt. Ex. 1 at 10.)

{¶ 35} Staff may retain an external consultant under Staff's direction to review the Phase 1 and Phase 2 operational benefits of the gridSMART project. The cost for the

consultant and the Company's incremental resources to manage and support the consultants shall be paid by AEP Ohio and be fully recoverable through the GS2 Rider, subject to prudence review. The consultant will evaluate and recommend an ongoing level of operational benefits to be achieved and recognized in rates as part of the annual rider filing, to the extent such operational savings are not already reflected in rates. After this assessment is made, the Commission shall establish a process to determine the appropriate operational cost savings credit in the absence of an agreement by the Company and intervenors. (Jt. Ex. 1 at 10.)

I. Accounting

{¶ 36} The accounting life of all AMI meters will be 15 years instead of 7 years. Twenty-two thousand additional AMI meters that were deployed in order to perfect the Phase I pilot project, as well as all replacement and in-stock AMI meters will be moved to the GS2 rider for recovery upon approval of the GS2 Stipulation. The Company will retire the existing meters through the normal course of business, which will be included in the DIR rider, and any undepreciated amount for the retired meters will be accorded standard accounting treatment and included in the calculation of the accumulated depreciation reserve for distribution and general plant in the next base distribution case. If during the GS2 meter rollout, the difference between the actual and theoretical reserve, as provided to Staff annually, becomes a negative five percent of the original cost on that same study, the Company will file, within two years, a base distribution case unless mutually agreed by the Company and Staff and approved by the Commission that a base case is not necessary. Pursuant to the Commission's Feb. 25, 2015 Opinion and Order in *ESP 3* at 52, the Company will file its final reconciliation for the gridSMART Phase 1 Rider to transfer the approved capital cost balance into the DIR and unrecovered O&M into the GS2 Rider. (Jt. Ex. 1 at 10-11.)

J. Audit Review and Data Measure

{¶ 37} AEP Ohio will continue the Phase 1 review process of annual physical audits, financial audits and review of costs recovered through the GS2 Rider. The Company will file quarterly updates in a single docket created for each calendar year and the annual review connected to that year shall occur in the same docket. In conjunction with the next six annual rider filings, the Company will also report the non-financial metrics shown in the Attachment to the GS2 Stipulation for the prior calendar year. (Jt. Ex. 1 at 11-12.)

K. Air Emissions Benefits

{¶ 38} AEP Ohio agrees to work with stakeholders to develop a method to quantify the air emissions benefits from the program (resulting from any VVO efficiency gains, fewer truck rolls and time-based rate plans, etc.). The parties will use their best efforts to obtain approvals for using these air emissions benefits for compliance with regulations for greenhouse gas emissions from fossil fuel plants. AEP Ohio also agrees to work with a third party to: (a) quantify the operational impacts of distributed generation on its distribution system; (b) identify additional changes needed for the distribution system to accommodate greater penetration of distributed generation; and (c) share its non-confidential findings with stakeholders. AEP Ohio will update and file the estimated cost of third party work, which will be fully recoverable through the GS2 rider, subject to audit and review. AEP Ohio will use its best efforts to seek approval for the energy and peak demand reductions to be used as a compliance tool under the Clean Power Plan. (Jt. Ex. 1 at 12.)

L. Other Provisions

{¶ 39} Any approved VVO installations will be reflected in AEP Ohio's forecasts for demand. Although VVO is not currently eligible for bidding into the PJM Capacity Auction, the Company will bid such resources into PJM if allowed by future rules, and

will develop a plan for allocation of the incremental revenues received and any associated risks. (Jt. Ex. 1 at 12.)

{¶ 40} AEP Ohio agrees to provide residential and small business customers with access to Green Button Download, and inform customers of this tool as part of the post-AMI meter installation communications. The Company will monitor the implementation costs and associated customer benefits of Green Button Connect, and discuss with the gridSMART Collaborative. (Jt. Ex. 1 at 12.)

{¶ 41} AEP Ohio will work with Staff and interested parties within the gridSMART Collaborative to identify any legal and regulatory barriers and address consumer protections for an EDU or CRES pilot opt-in prepaid metering program. (Jt. Ex. 1 at 12.)

{¶ 42} AEP Ohio will provide a customer web portal that displays the customer's AMI interval usage data on a next-day basis. (Jt. Ex. 1 at 12.)

V. DISCUSSION AND CONCLUSIONS

{¶ 43} Ohio Adm.Code 4901-1-30 authorizes parties to Commission proceedings to enter into a stipulation. Although not binding on the Commission, the terms of such an agreement are accorded substantial weight, particularly where the stipulation is unopposed by any party and resolves all issues in the proceeding. *Consumers Counsel v. Pub. Util. Comm.*, 64 Ohio St.3d 123, 125, 1992-Ohio-122, 592 N.E.2d 1370, citing *Akron v. Pub. Util. Comm.*, 55 Ohio St.2d 155, 157, 378 N.E.2d 480 (1978).

{¶ 44} The Commission has established a three-prong test in considering whether a stipulation is reasonable and should be adopted: (1) Is the settlement a product of serious bargaining among capable, knowledgeable parties? (2) Does the settlement, as a package, benefit ratepayers and the public interest? (3) Does the settlement package violate any important regulatory principle or practice? The Supreme Court of Ohio has endorsed the Commission's use of these criteria to resolve issues in a manner economical

to ratepayers and public utilities. *Indus. Energy Consumers of Ohio Power Co. v. Pub. Util. Comm.*, 68 Ohio St.3d 559, 1994-Ohio-435, 629 N.E.2d 423, citing *Consumers' Counsel*, at 126. The Court stated in that case that the Commission may place substantial weight on the terms of a stipulation, even though the stipulation does not bind the Commission. Furthermore, in determining the reasonableness of a stipulation, the Commission should consider the agreement as a package. *Ohio Edison Co.*, Case No. 14-1297-EL-SSO, Oct. 12, 2016 Fifth Entry on Rehearing at 99-100.

{¶ 45} AEP, Staff, and the supporting intervenors, note this Commission's support for the modernization of the Company's infrastructure through the deployment of smart technologies, including AMI, DACR, and VVO, dates back to our Opinion and Order in AEP Ohio's first ESP Case.[5] The Company and Staff witnesses have provided credible evidence regarding the expected costs and benefits provided by the proposed GS2 implementation.

{¶ 46} As noted above, OPAE does not directly oppose the Company's GS2 deployment but, instead, requests that the Commission modify the Stipulation to (1) prohibit remote customer disconnections; (2) expedite the process by which operational costs savings are identified and returned to customers through the credit to the GS2 Rider; and (3) reduce the tariffed fee for reconnection of service for customers with smart meters. OPAE's proposed modifications are discussed below, after consideration of the three-part test.

A. Is the settlement a product of serious bargaining among capable, knowledgeable parties?

{¶ 47} AEP Ohio filed this application after approval of the Company's request to initiate Phase 2 of the gridSMART project in AEP Ohio's ESP2 Case.[6] The Signatory

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5 Columbus Southern Power Company, Case Nos. 08-917-EL-SSO, et al., Mar. 18, 2009 Opinion and Order at 37.

6 *ESP2 Case*, Aug. 8, 2016 Opinion and Order at 62.

Parties assert that the Stipulation will build on the Company's gridSMART Phase 1 project and bring beneficial AMI, DACR, and VVO technologies to many more customers in a much larger portion of the Company's service territory. The Signatory Parties note the testimony of Staff witness Schweitzer that the Stipulation meets the Commission's three-part test used in considering such agreements, and he recommends that the GS2 Stipulation be adopted. He testified that the signatory parties have all been a part of shaping the terms of the GS2 Stipulation during the two-plus years since AEP Ohio made their original filing in this case, and that each of the signatory parties employ experts in the industry and are represented by experienced and competent counsel, who are knowledgeable in regulatory matters and regularly participate in Commission proceedings. He contends that the terms of the GS2 Stipulation resulted from serious bargaining and concessions between the parties to arrive at a mutually acceptable agreement that complies with all important and relevant regulatory principles and practices (Staff Ex. 1 at 2-3).

{¶ 48} Company witness Moore also testified that the GS2 Stipulation meets the Commission's three-part test. With respect to the first prong, she testified that the GS2 Stipulation was the product of meetings and negotiations involving experienced counsel as well as technical expert familiar with regulatory matters. She noted the changes from AEP Ohio's original application as a result of comments and discovery, and numerous meetings in which the parties had the opportunity to negotiate each provision of the GS2 Stipulation and, she asserted that no party was left out of the opportunity to negotiate. Further, she stated that many of the Company's commitments in the GS2 Stipulation directly addressed the intervenors' comments, such as the structure and timing of the GS2 Rider. AEP Ohio's original proposal was to forecast the Electric Plant in Service and true those amounts up to actuals. As stipulated, the Company will file the actual plant in service balances quarterly, for automatic approval within 30 days unless otherwise ordered by the Commission, with an annual prudency audit to be conducted in similar fashion to the process used for the gridSMART Phase 1 rider. Other provisions she

identified as resulting from negotiations between the parties include the additional VVO investment which will exclude shared savings, the GS2 Collaborative and consideration of prepaid metering capability, an expanded potential Phase 3 feasibility study of the entire system, the TOU Transition Plan, data storage and sharing initiatives, and air emission reporting (AEP Ohio Ex. 3 at 5-8, Tr. II at 301, 305).

{¶ 49} Staff notes that it did not support the Company's original application in this case, and raised concerns in Staff's comments. Further, Staff reports that negotiations in this case were put on hold while the Company's ESP III and PPA proceedings were being litigated. At the conclusion of the PPA case, negotiations in the instant case resulted in the accommodations of certain provisions from the PPA settlement that had been the subject of considerable compromise that are included as provisions in the Stipulation in this case. (Staff Brief at 4-6.)

Commission Conclusion

{¶ 50} With respect to the first prong of the Commission's three-part test, we first note that this matter has been pending for over three years and involved the comments and reply comments by more than a dozen parties, which included environmental, residential and industrial advocate groups, and included four days of hearings from seven witnesses. In determining whether a settlement is the product of serious bargaining among capable, knowledgeable parties, we consider the extent of negotiations and the diversity of the negotiating parties, but there is no requirement that any particular party be a signatory to satisfy this first prong. *See, Vectren Energy Delivery of Ohio, Inc.*, Case No. 13-1571-GA-ALT, Opinion and Order (Feb. 19, 2014) at 10; *In re FirstEnergy*, Case No. 12-1230-EL-SSO, Opinion and Order (July 18, 2012) at 26, citing *Dominion Retail, Inc. v. The Dayton Power and Light Co.*, Case No. 03-2405-EL-CSS, et al., Opinion and Order (Feb. 2, 2005) at 18, Entry on Rehearing (Mar. 23, 2005) at 7-8; *In re The Dayton Power and Light Co.*, Case No. 12-3062-EL-RDR, et al., Opinion and Order (Dec. 17, 2014) at 9.

{¶ 51} Further, there is no evidence in the record here that any class of customers was excluded from the settlement negotiations in this case. *See Time Warner AxS v. Pub. Util. Comm.*, 75 Ohio St.3d 229, 233, 661 N.E.2d 1097 (1996). Moreover, we note the Company's commitment to the creation of the GS2 Collaborative in the Stipulation, and we trust that OCC and OPAE will fully participate in addressing the concerns raised in this proceeding as these new technologies and systems are installed in the AEP Ohio service territories. Therefore, upon review of the record, the Commission finds that the first prong of the three-part test for the reasonableness of a stipulation has been met.

B. Does the settlement, as a package, benefit ratepayers and the public interest?

{¶ 52} The Signatory Parties argue that the Stipulation's proposed GS2 deployment will lead to significant benefits, which AEP Ohio witness Osterholt expects will exceed $1 billion in customer value attributable to reduced customer minutes of interruption from DACR deployment, plus $210 million in customer bill savings attributable to energy and capacity savings from VVO deployment, and nearly $200 million in operational savings attributable to AMI deployment (AEP Ohio Ex. 1, Ex. SSO-1 at 9, AEP Ohio Brief at 24-25, AEP Ohio Reply Brief at 19, 25, IGS Brief at 3-5, IGS Reply Brief at 1-3).

{¶ 53} Staff witness Schweitzer asserts that the Stipulation does benefit ratepayers and the public interest through improved service reliability, reduced service outages, and faster restoration of service, as well as gains in energy efficiency and demand reduction. In addition, he contends that the GS2 Stipulation will result in new TOU rate options from customer choice marketers. He also stated that the Stipulation provides an operational savings credit against the GS2 Rider that will offset the implementation costs, and Staff requests that the Commission clarify that an operational savings audit will occur after sufficient operational experience to allow for a meaningful audit (Staff Ex. 1 at 3, Staff Brief at 10-11, Staff Reply Brief at 8-10).

{¶ 54} AEP Ohio witness Osterholt provided testimony regarding the Company's rollout of AEP Ohio's GS1 and GS2 implementations and details regarding most of the provisions of the Stipulation filed in this case. According to Mr. Osterholt, no further business case development is needed to implement the GS2 rollout or to demonstrate that the GS2 Stipulation will provide substantial benefits over the next 15 years. These benefits include more than $1 billion through reduced outages resulting from the DACR deployment, $210 million in reduced consumption and capacity requirements from the VVO deployment, and $200 million in operational savings from the AMI deployment (AEP Ohio Ex. 1 at 4-5).

{¶ 55} With regard to the benefits of DACR technology, the Company witness explained that DACR significantly reduces both the extent of outages (i.e., the number of customers affected) and the duration of outages (i.e., how long customers are without power), while providing significant maintenance and safety benefits. When smart reclosers are installed at key points in the distribution grid, these reclosers, in conjunction with a centralized controller, can automatically identify and react to outages. Without any required input from human operators, DACR can reconfigure circuits so that power flows are restored or outages are isolated and limited to the smallest possible area in a process that usually takes less than two minutes. DACR also provides detailed information about outages to dispatchers in AEP Ohio's Distribution Dispatch Center, as well as to the Company's lineman working in the field. Mr. Osterholt stated that without DACR, dispatchers and linemen have only limited visibility regarding faults on the grid and often, must rely on reports from customers to know that an outage has occurred. In some cases, linemen must physically inspect equipment and segments of the distribution grid to determine the extent of an outage and diagnose its cause.

{¶ 56} With DACR, dispatchers and linemen receive continuous information from smart reclosers regarding the existence and location of faults that Mr. Osterholt contends will significantly improve the ability of dispatchers and linemen to diagnose, prioritize, and resolve outages. Furthermore, he explained that the remote operation of

smart reclosers provides significant advantages when circuits require switching for maintenance, construction, or returning to normal following an outage event. He testified that for "non-smart" reclosers, linemen must physically visit the reclosers and perform the switching at the pole location, but with DACR and smart reclosers, this switching can be accomplished remotely by a distribution dispatcher, which frees line personnel for other priorities, reduces truck rolls, and improves safety (AEP Ohio Ex. 1 at 6-8).

{¶ 57} Mr. Osterholt also noted that under §IV.2 of the GS2 Stipulation, AEP Ohio will install DACR technology on 250 circuits, prioritizing those circuits that have the greatest outage improvement opportunity. To ensure that the Company delivers on customer outage improvements from the DACR deployment, the GS2 Stipulation provides that AEP Ohio will achieve a 15.8 percent annual improvement in the aggregated SAIFI score, excluding major events, for all GS2 DACR circuits, with a secondary metric related to DACR system operation success in the event the 15.8 percent annual improvement goal is not met. Mr. Osterholt testified that this secondary metric is necessary because measuring short-term reliability improvements involve many factors beyond the Company's control, such as significant weather events. If the Company is unable to meet the SAIFI metric, AEP Ohio has committed to achieve a secondary metric of 80 percent successful operation of the DACR systems, based on a three-year rolling average, for aggregate GS2 circuits equipped with DACR for more than six months. AEP Ohio will report its performance annually to the Commission's Staff through 2021, with the first report due after DACR has been installed on at least ten circuits for six months. Mr. Osterholt estimates that the GS2 DACR implementation will produce more than $1 billion in reliability benefits over 15 years (Joint Ex. 1 at 5-6, *Id.* at 8-11).

{¶ 58} Mr. Osterholt also explained that the Company's proposed VVO investment provides energy efficiency benefits related to reducing voltage levels on the distribution grid. In areas where VVO has not been installed, ordinary voltage regulators and capacitors provide no visibility into actual voltage levels on the grid, requiring voltage levels to be set higher at the substation to ensure that voltage does not drop below

the lowest acceptable range for customers at the end of the circuit for all circumstances throughout the year. VVO technology involves installing "smart" distribution infrastructure that allows AEP Ohio to measure voltage on various parts of the grid and to adjust voltage in response to fluctuating voltage conditions. He stated that voltage sensors at key parts of the grid transmit real-time information to a centralized control, which can remotely and automatically increase and decrease voltage levels so that, over time, VVO allows an overall reduction in grid voltage levels while ensuring that voltage at the meter never drops below the permissible range. He testified that, all things being equal, lower voltage levels equate to lower energy usage. Therefore, he concludes that customers will realize an overall reduction in energy consumption on circuits where the technology is installed.

{¶ 59} Based on AEP Ohio's experience with VVO deployment on 17 circuits in gridSMART Phase 1, Mr. Osterholt stated that the Company expects to achieve an overall average VVO energy efficiency gain of 3%, resulting in energy efficiency savings of 235,390 kWh annually. This would translate into $210 million in overall bill savings related to the VVO deployment for the 15-year business case period. Mr. Osterholt notes that under §IV.3 of the Stipulation, AEP Ohio will deploy VVO on 160 circuits over seven years following approval of the Stipulation, and file annual reports to the Commission detailing the energy efficiency savings and emissions reductions attributable to VVO deployment (Id. at 12-14).

{¶ 60} Company witness Moore testified that the Stipulation will promote a number of the state policies expressed in R.C. 4928.02, such as ensuring the availability to consumers of adequate, reliable, safe, efficient, nondiscriminatory, and reasonably priced retail electric service. She also asserted that the Stipulation will help to ensure the availability of unbundled and comparable retail electric service pursuant to R.C. 4928.02(B). In addition, she testified that the Company updated its estimates of the cost/benefit ratios to 2.8 on a cash basis, and 2.0 on a net present value basis, for the

business case to include the additional commitments made under the Stipulation, as well as the benefits of AMI, DACR, and VVO technologies. (AEP Ohio Ex. 3 at 9-10.)

{¶ 61} Ms. Moore also sponsored an updated exhibit, Revised Ex. AEM-1 filed July 21, 2016, regarding AEP Ohio's estimates of GS2 bill impacts from the Stipulation on a per bill basis for both residential and non-residential customers that is set forth below (AEP Ohio Ex. 3 at 8-9, 17-21, Tr. II at 301, 305):

GridSMART Phase 2 Rate Impacts of AMI, VVO & DACR Implementations

Average Monthly Rate Impact ($)			Operating Benefits		Net Average Monthly Impact	
	Residential	Non-Residential	Residential	Non-Residential	Residential	Non-Residential
Year 1	0.34	1.40	(0.01)	(0.07)	0.33	1.33
Year 2	0.57	2.32	(0.07)	(0.27)	0.50	2.05
Year 3	1.10	4.49	(0.06)	(0.27)	1.04	4.22
Year 4	1.64	6.68	*	*	*	*
Year 5	2.07	8.44	*	*	*	*
Year 6	2.36	9.61	*	*	*	*
Year 7	2.48	10.08	*	*	*	*

*Bill impacts for operating benefits after year 3 to be determined per §IV.6 of the Stipulation.

{¶ 62} Ms. Moore indicated that under §IV.6 of the Stipulation, an evaluation of the operational savings of the project will be conducted to determine the ongoing operational benefits to be recognized as a credit to the overall GS2 costs, and she expects cost reductions will result in lower typical bills than shown above. She stated that the Company has not attempted to quantify the value for these savings in years four through seven, but that AEP Ohio is committed to passing back the quantifiable operating benefits through the GS2 Rider, and evaluating the ongoing level of benefits to be recognized as a credit to the Rider in the years 4-7 (AEP Ohio Ex. 3 at 9, -15-16).

{¶ 63} AEP Ohio also notes that under §IV.6 of the Stipulation, costs will be allocated and recovered from customers in the GS2 Rider in the same manner as in Phase 1, which reflects a base distribution revenue allocation to the classes and recovered as a fixed monthly charge as approved in Case No. 10-164-EL-RDR, Aug. 11, 2010 Finding and Order at 14 (AEP Ohio Brief at 25-28, AEP Ohio Reply Brief at 19).

Commission Conclusion

{¶ 64} We first note that under AEP Ohio's Global Settlement, OCC has withdrawn its opposition to our adoption of the GS2 Stipulation conditioned upon a required annual audit for prudency and review of the operational cost savings credit in this proceeding, which we will address below. Upon our adoption of both the AEP Global Settlement and the GS2 Stipulation, the residential customer allocation of GS2 costs will be reduced from 62.4 percent proposed in the GS2 Stipulation to 45 percent, which will result in a substantial benefit to that customer group.[7] We also note the rebuttal testimony of Mr. Osterholt regarding the projected reliability benefits from GS2 implementation. He explained that year-to-year measurements in DACR performance may fluctuate due to factors outside the utility's control, so the proper analysis must compare the same circuit performance with and without DACR technology. The Company's analysis showed a 20 percent improvement for all Phase 1 DACR circuits in the 2008-2010 pre-deployment period compared with the 2013-2015 post-deployment period, and the Company would expect the same result for the GS2 DACR installations. He stated that fluctuations in SAIFI due to weather events outside the Company's control, will not affect the improvement in reliability from the DACR installations in GS2 that are projected to avoid as many as 21 million customer minutes of interruption, which would result in $1 billion in customer benefits (AEP Ohio Ex. 13 at 1-8.)

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7 *See*, Case No. 13-1939-EL-RDR, OCC-AEP Ohio statement, Dec. 28, 2016, and Case No. 10-2929-EL-UNC, et al., AEP Ohio Global Settlement, Dec. 21, 2016 at 14-15.

{¶ 65} We also note the testimony of Company witness Moore that the mid-deployment review of the customer credit under §IV.6 of the Stipulation is mandatory, and that the Commission should adopt such interpretation (Tr. Vol. I at 181-182, 222-223, AEP Ohio Brief at 23). While we will now clarify that such review is mandatory, we are also concerned that the credit review process under §IV.6 of the GS2 Stipulation must achieve timely adjustments of the credit to customers over the projected four-year deployment period for the AMI meters (Joint Ex. 1 at 5, 9-10). The customer quarterly credit should be revised as soon as possible to reflect the actual operational benefits realized during the GS2 deployment.

{¶ 66} Based on the testimony of record, we find that the GS2 deployment provided in the Stipulation will benefit ratepayers and the public interest. We do, however, direct Staff, AEP Ohio, and the GS2 Collaborative take all reasonable measures to accelerate the audit and adjustment of the operational savings credit to offset customer GS2-related charges as quickly as possible. To expedite this process, we direct AEP Ohio and the Collaborative to file in a new docket quarterly status updates and recommendations regarding the progress of implementation and development of the operational savings credit. Furthermore, we direct Staff to immediately begin the process of securing any third party auditor that Staff deems necessary to expeditiously meet this goal.

{¶ 67} Finally, we note that AEP Ohio's most recent distribution base rate case was conducted more than four years ago in Case No. 11-351-EL-AIR. Further, under the GS2 Stipulation, the Company's installation of 894,000 AMI meters is expected to take four years from approval of the Stipulation, while the implementation of 250 DACR circuits and the VVO deployments are both expected to take six years.[8] We find that a future distribution base rate case is a reasonable measure to assure that all reduced costs and other benefits of the GS2 implementation are passed though to customers.

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8 §IV.1(C) and §IV.6 of Joint Ex. 1 at 5, 7.

Accordingly, we direct Staff to file notice in the new docket for status reports referenced above upon completion of the Company's GS2 deployment, and we direct AEP Ohio to file a distribution base rate case within six months after GS2 deployment is completed to ensure that customers realize all the operational savings benefits to which they are entitled.

C. *Does the settlement package violate any important regulatory principle or practice?*

{¶ 68} Although OPAE does not directly oppose our adoption of the GS2 Stipulation, they assert that the agreement should be modified to comport with Ohio's consumer protection laws, citing the waiver of Ohio Adm.Code 4901:1-18-06(A)(2), which requires the utility to send personnel to the premises on the day of disconnection for nonpayment of a residential customer, granted for Phase 1 in Case No. 13-1938-EL-WVR.

{¶ 69} AEP Ohio, Staff, and IGS claim that the Stipulation does not violate any important regulatory principles and practices. They cite the testimony of AEP Ohio witness Moore that the Stipulation advances state energy policies under R.C. 4928.02, and that the operational savings credit review process is mandatory and reasonable (AEP Ohio Ex. 3 at 8-12, Tr. I at 182, 222-223). They also note Staff witness Schweitzer's testimony that the review process could develop new operational credit levels as early as two years after GS2 deployment begins (Tr. III at 593-95). The Company argues that the initial $1.6 million operational savings credit will be replaced very soon after it goes into effect, and that a waiver for the remote disconnection of residential customers for nonpayment is not included in this Stipulation (AEP Ohio Brief at 21-31, AEP Ohio Reply Brief at 29-32, Staff Brief at 15-16; IGS Brief at 6-7). Direct Energy argues that because Phase 1 costs were borne by all AEP Ohio customers, the same should be true for GS2 costs (Direct Energy Brief at 5).

Commission Conclusion

{¶ 70} As more fully discussed below, we reject OPAE's requested modification and find that the GS2 Stipulation does not violate any consumer protection law, as the Company has not requested a waiver of the current disconnection rules in this agreement. We also note the testimony of AEP witness Moore that AMI, DACR, and VVO technologies (AEP Ohio Ex. 3 at 9-10), in finding that the Stipulation will help to ensure adequate, reliable, safe, and efficient retail electric service through the AMI, DACR, and VVO technology commitments made by AEP Ohio under the Stipulation, as well the availability of unbundled and comparable retail electric service pursuant to R.C. 4928.02(B). Further, Staff witness Schweitzer testified that the GS2 Stipulation complies with all important and relevant regulatory principles and practices (Staff Ex. 1 at 3). Accordingly, we conclude that the Stipulation will not violate any important regulatory principle or practice.

D. OPAE's Proposed Modifications

{¶ 71} As noted above, OPAE does not directly oppose the GS2 Stipulation, but requests that the Commission make a number of modifications in the interests of low-income residential customers, which include adjustments to the operational savings credit and review process (OPAE Brief at 3, 6-8, OPAE Reply Brief at 1-2). We have already discussed these issues above, and we again note that under AEP Ohio's Global Settlement, if approved, the residential customer allocation of GS2 costs will be reduced from 62.4 percent proposed in the GS2 Stipulation to 45 percent. Furthermore, we trust OPAE will actively participate in the GS2 Collaborative to accelerate the audit and adjustment of the operational savings credit to offset residential customer GS2-related charges as quickly as possible.

{¶ 72} OPAE also suggests modifications to the GS2 Stipulation regarding the use of advanced meters to remotely disconnect residential customers for nonpayment and the associated reconnection fee, as well as the allocation of costs for CRES TOU rate plans.

OPAE also objects to the proposed discussion of pre-paid metering service in the GS2 Collaborative, and the Company's VVO investment to satisfy AEP Ohio's SEET obligation. These proposed modifications are discussed below.

(1) Remote Customer Disconnections

{¶ 73} OPAE argues that the use of advanced meters to remotely disconnect residential customers for nonpayment should be addressed in this proceeding. They cite the Company's disconnection data for 2016 and the conclusion by OCC witness Williams that AEP Ohio residential customers with Phase 1 AMI meters are being disconnected for nonpayment at a disproportionately higher rate compared to residential customers without advanced meters. (OCC Ex. 21 at 18-22, OPAE Brief at 3-5, OPAE Reply Brief at 5).

{¶ 74} AEP Ohio claims that being able to remotely disconnect residential customers for nonpayment is an important operational savings achieved through advanced meters, but that remote disconnection of residential customers for nonpayment should not be addressed in this proceeding. In Case No. 13-1938-EL-WVR, the Commission granted the Company's request for a limited waiver of the disconnection rules under Ohio Adm.Code 4901:1-18-06(A)(2) to allow the Company to remotely disconnect customers for non-payment in the gridSMART Phase 1 territory on a temporary basis as a two-year pilot program.[9] However, AEP Ohio notes that the Company is not granted a similar waiver under the GS2 Stipulation, and contends that the Commission can address any remote disconnection issues in a separate waiver proceeding for GS2 should the Company file one. Even without an expanded remote disconnection waiver, AEP Ohio asserts that the proposed AMI meter deployment will still lead to substantial annual operational savings plus hundreds of millions of dollars

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9 *Ohio Power Company*, Case No. 13-1938-EL-WVR, Mar. 18, 2014 Entry at 12, and Sep. 9, 2015 Second Entry on Rehearing at 2-10.

in overall GS2 benefits (AEP Ohio Brief at 28-30, AEP Ohio Reply Brief at 30, AEP Ohio Ex. 1, SSO-1 at 5, 9).

Commission Conclusion

{¶ 75} We will decline OPAE's suggestion to address the use of advanced meters to remotely disconnect residential customers for nonpayment in this proceeding. We will, however, direct AEP Ohio and the GS2 Collaborative to further study and address this issue in status updates on the progress of the GS2 implementation. In doing so, we also direct the Collaborative to explore ways in which AMI data and prepaid service might be used to minimize fraudulent usage and disconnection expenses for all customers, particularly with respect to programs for customers with low-income, disability, and medical considerations.

(2) Time-of-Use Rates and Interval Data

{¶ 76} §IV.5 includes a TOU transition plan in which CRES providers propose to develop similar programs to AEP Ohio's current TOU programs within six months of adoption of the GS2 Stipulation (Joint Ex. 1 at 7-8, 11-12). OPAE argues that any benefits from CRES provider programs using TOU rates and interval data are speculative, and they oppose the allocation of any costs or the recognition of any benefits for low-income residential customers. OPAE cites the testimony of Direct Energy witness Ringenbach that all costs associated with the TOU transition plan and AEP Ohio's creation of a CRES web portal will be paid by all customers through the GS2 Rider, whether they participate in a CRES TOU program or not. They urge the Commission modify the GS2 Stipulation to require CRES providers and their customers who are to benefit from CRES TOU rates, to pay the full cost of the CRES web portal and related infrastructure investments. (Tr. II at 248, OPAE Brief at 10-11, OPAE Reply Brief at 2-5).

{¶ 77} OPAE asserts that only customers who are able to monitor their usage and react to price signals will be able to benefit from TOU rate plans. OPAE contends that

these plans would impose an unrealistic requirement for many low-income customers who may end up paying far higher bills if they enroll in such plans and prove unable to monitor and control their usage, particularly customers who work multiple jobs with varying schedules. OPAE claims that TOU rates are only appropriate for customers who are willing and able to purchase certain equipment and appliances and expend the time necessary to benefit from these rate offerings by monitoring their hourly usage. OPAE notes the testimony of OCC witness Williams that as few as 5% of customers may participate in TOU programs, a volume that he suggests may be insufficient to be cost-effective, and that the Company's web portal for suppliers will not provide customer interval data for at least two years. (OCC Ex. 21 at 11-13, OPAE Brief at 10-11, OPAE Reply Brief at 3-4).

{¶ 78} OPAE also urges the Commission to require AEP Ohio to perform shadow billing to determine whether customers on TOU rates are actually saving money, and to publish the level of customer TOU savings (OPAE Brief at 12, OPAE Reply Brief at 4).

Commission Conclusion

{¶ 79} We reject OPAE's assumption that residential customers may not benefit from access to interval data and TOU rate plans. While no one can guarantee the success of TOU programs, the installation of AMI technology may offer beneficial capabilities that are not currently foreseeable. It is unclear to us that, at this point, low-income residential customers will ultimately suffer through the adoption of technology that may allow them to make choices to control their usage in response to market signals. We note the GS2 implementation falls squarely within the State of Ohio's policy under R.C. 4928.02(D) to encourage innovation and market access for cost-effective supply- and demand-side retail electric service including, but not limited to, demand-side management, time-differentiated pricing, waste energy recovery systems, smart grid programs, and implementation of advanced metering infrastructure.

{¶ 80} Further, we reject OPAE's suggestion that CRES providers should pay for AEP Ohio's GS2 system costs associated with providing suppliers access to a CRES web portal and customer interval data. Such argument ignores the reality that all costs imposed upon CRES providers will ultimately be borne by the suppliers' customers. Accordingly, we find that the Stipulation's TOU provisions are reasonable.

(3) Pre-Paid Electric Service

{¶ 81} OPAE notes that §IV.17 of the GS2 Stipulation states that AEP Ohio agrees to work with the Staff and interested parties within the GS2 Collaborative to identify any legal and regulatory barriers for an electric distribution utility or CRES provider pilot pre-paid metering program that customers could opt-into. This provision also expressly provides that any future opportunity to move forward with pre-paid metering would address consumer protections. OPAE contends that pre-paid metering service in Ohio is unlawful, and that AEP-Ohio would need to seek a waiver of the current law that provides consumer protections. (Jt. Ex. 1 at 12, OPAE Br. at 9.)

{¶ 82} The Company and Staff dispute OPAE's assertion that pre-paid metering service in Ohio is unlawful, and suggest that OPAE's concerns are unripe and need not be addressed by the Commission at this time. They note that the GS2 Stipulation merely reflects a commitment by the Company to work with Staff and interested parties to identify and discuss issues related to pre-paid metering. Furthermore, Mr. Osterholt confirmed that the Company's commitment does not extend beyond discussing the possibility of pre-paid metering, and if those discussions lead to specific proposals for a pre-paid metering pilot program, OPAE will have an opportunity to present any legal objections at that time. (Jt. Ex. 1 at 12, AEP Ohio Ex. 1 at 26, AEP Ohio Brief at 31).

Commission Conclusion

{¶ 83} While we acknowledge OPAE's concerns and particular interest in the potential uses of pre-paid service, we can also envision the use of AMI technology to

benefit all customers, particularly the disabled and elderly who may also be low-income residential customers. We believe these issues deserve further study by the GS2 Collaborative, and would expect OPAE's active participation within the Collaborative in addressing these concerns. Accordingly, we decline to modify the Stipulation as advocated by OPAE.

(4) VVO Investment and AEP Ohio's SEET Obligation

{¶ 84} OPAE also opposes §IV.3 of the GS2 Stipulation regarding AEP Ohio's $20 million investment in VVO technology to satisfy the Company's obligation for a renewable or similar capital investment associated with its *2009 SEET Case*. OPAE argues that the Stipulated VVO investment is both costly and speculative, and should be recovered through the Company's distribution investment rider. OPAE asserts that if AEP Ohio cannot find a suitable investment to satisfy its $20 million commitment, this amount must be returned to ratepayers for their benefit. (OPAE Brief at 12-13).

Commission Conclusion

{¶ 85} We disagree with OPAE, and hold that the Stipulated VVO investment provides a reasonable resolution to AEP-Ohio's fulfillment of its SEET obligation consistent with our prior orders in Case No. 10-1261-EL-UNC, Jan. 11, 2011 Opinion and Order at 25-27, and Case No. 11-4571-EL-UNC, Oct. 23, 2013 Opinion and Order at 27.

VI. ORDER

{¶ 86} It is, therefore,

{¶ 87} ORDERED, That the Stipulation filed by AEP Ohio, and supported by Staff, Direct Energy, IGS, OHA, FES, OEC and EDF, be approved subject to the conditions set forth above. It is, further,

{¶ 88} ORDERED, That the Company move all approved gridSMART Phase 1 assets to the distribution investment rider and file for any unrecovered O&M expenses in a gridSMART Phase 2 rider application. It is, further,

{¶ 89} ORDERED, That the Company take all other actions consistent with the Stipulation. It is, further,

{¶ 90} ORDERED, That Staff issue a request for proposals to retain an external consultant to review the operational benefits of Phases 1 and 2 of AEP Ohio's gridSMART project. It is, further,

{¶ 91} ORDERED, That a copy of this Opinion and Order be served upon all parties of record.

THE PUBLIC UTILITIES COMMISSION OF OHIO

Asim Z. Haque, Chairman

Lynn Slaby

M. Beth Trombold

Thomas W. Johnson

RMB/dah

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FEB 01 2017

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Secretary