

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Filing by Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company of a Grid Modernization Business Plan)	
)	
)	Case No. 16-481-EL-UNC
)	
In the Matter of the Filing by Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company Application for Approval of a Distribution Platform Modernization Plan)	
)	
)	Case No. 17-2436-EL-UNC
)	
In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company to Implement Matters Relating to the Tax Cuts and Jobs Act of 2017)	
)	
)	Case No. 18-1604-EL-UNC
)	
In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company for Approval of a Tariff Change)	
)	
)	Case No. 18-1656-EL-ATA
)	

**INITIAL BRIEF OF THE ENVIRONMENTAL LAW & POLICY CENTER, NATURAL
RESOURCES DEFENSE COUNCIL, AND OHIO ENVIRONMENTAL COUNCIL**

PUBLIC REDACTED VERSION

Filed: March 1, 2019

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I. INTRODUCTION

Ohio Edison Company, the Cleveland Electric Illuminating Company, and the Toledo Edison Company's (collectively "FirstEnergy" or "Companies") grid modernization proposal requires a significant investment from its customers that deserves the highest level of scrutiny. Foremost, FirstEnergy is asking for \$825 million (the net nominal cost of its pending proposal) to actually invest in grid modernization projects over the next three years. In addition to this \$825 million, FirstEnergy's customers are already on the hook to pay more than \$390 million dollars to support grid modernization in northern Ohio through a Distribution Modernization Rider authorized by the Public Utilities Commission of Ohio ("PUCO" or "Commission") in 2016, and FirstEnergy is currently seeking a two-year, \$260 million extension of that rider.

Given these costs, now is the time for the Commission to thoroughly consider how to actually achieve the customer benefits promised from these expenditures toward grid modernization. However, the signatories to the proposed Stipulation and Recommendation and Supplemental Stipulation and Recommendation (collectively, "Stipulation") in this case have failed to show that this latest \$825 million expenditure will provide customer value commensurate with those significant overall costs. Therefore, the Environmental Law & Policy Center, Natural Resources Defense Council, and Ohio Environmental Council (collectively, "Environmental Groups") ask the Commission to reject the Stipulation and ensure that FirstEnergy invests in grid modernization based on a solid plan that is actually designed to ensure customers see real benefits in return for their investment.

What we ask the Commission to do in this proceeding is exactly what the Virginia State Corporation Commission did a few short weeks ago when it rejected several main parts of Virginia Electric and Power Company's grid modernization plan because the utility "has not

proven that the costs of the Plan elements . . . are reasonable and prudent.” *Petition of Virginia Electric and Power Company Plan for Electric Distribution Grid Transformation Projects* (“*Dominion Grid Modernization Case*”), Case No. PUR-2018-00100, Final Order (Va. SCC Jan. 17, 2019) at 6. FirstEnergy has likewise failed to show that key elements of its grid modernization plan are “well-conceived, well-supported and cost-effective.” *Id.*

II. FACTS

A. FirstEnergy’s Fourth Electric Security Plan

The origins of this case date back to FirstEnergy’s 2014 Electric Security Plan (“ESP”) filing, Case No. 14-1297-EL-SSO (“*FirstEnergy ESP IV Case*”). In that case, the Commission approved a stipulation package including a requirement for FirstEnergy “to undertake grid modernization initiatives,” with cost recovery through Rider AMI. *FirstEnergy ESP IV*, Case No. 14-1297-EL-SSO, Opinion and Order (Mar. 31, 2016) at 22. As part of that package, customers are paying \$130 million a year for three years through a Distribution Modernization Rider (“Rider DMR”), and FirstEnergy is now seeking to take advantage of the option to renew Rider DMR for two years and \$260 million more “to support its grid modernization initiatives.” *In re Application of FirstEnergy Utilities for an Extension of Their Distribution Modernization Rider*, Case No. 19-361-EL-RDR, Application (Feb. 1, 2019) at 3.

The Commission did not require FirstEnergy to spend Rider DMR revenue directly on grid modernization investments, instead authorizing the Companies to use it towards general credit support measures that would reduce borrowing costs for the future, pending a Commission policy review of grid modernization. *FirstEnergy ESP IV*, Fifth Entry on Rehearing (Oct. 12, 2016) at 128, 96-97. The Commission did not weigh the costs of Rider DMR against any quantitative benefits of grid modernization in the *FirstEnergy ESP IV Case*, and will not

consider in the future whether Rider DMR revenues are producing “significantly excessive earnings” for FirstEnergy on an annual basis under R.C. 4928.143(F). *Id.* at 98, 163.

B. The PowerForward Roadmap

In April 2017, the Commission formally launched its “PowerForward” grid modernization initiative in accordance with its statements in the *FirstEnergy ESP IV Case*. This initiative culminated in a report that the Commission issued on August 29, 2018, to discuss “how the distribution system can be improved through innovation to better the lives of Ohioans.” PUCO, PowerForward: A Roadmap to Ohio’s Electricity Future (“PowerForward Roadmap”) (Aug. 29, 2018) at 4.

The PowerForward Roadmap set forth a framework of foundational grid architecture components, including distribution automation (“DA”), Volt/VAR management (also known as Integrated Volt/VAR Control, or “IVVC”), and advanced metering infrastructure (“AMI”). *Id.* at 15-16. The Commission explained that any electric distribution utility should include a cost/benefit analysis with an application for grid modernization investment, so that “the Commission and stakeholders can transparently evaluate whether a grid modernization investment should be made in the first place.” *Id.* at 27. In particular, the Commission took the position that “[a]pplications for investment should demonstrate that benefits generated by the project will exceed costs on a net present value basis,” and the accompanying cost-benefit analysis should “demonstrate the prudence of proposed investments.” *Id.* at 27, 35.

C. This Proceeding

This case consolidates two existing grid modernization filings: a Grid Modernization Business Plan that FirstEnergy filed in February 2016 pursuant to the stipulation in the *FirstEnergy ESP IV Case*, in Case No. 16-481-EL-UNC; and a new grid modernization

application that FirstEnergy filed in December 2017, proposing a Distribution Platform Modernization Plan collateral to the then-ongoing PowerForward proceeding in Case No. 17-2436-EL-UNC. It also includes, as a result of the Stipulation, two dockets opened to refund excess taxes to customers in connection with the federal Tax Cuts and Jobs Act of 2017 (“TCJA”).

1. The Settlement Process

Although these consolidated proceedings include dockets that were initially opened in 2016 and 2017, the negotiations between FirstEnergy and Staff that led to the filing of the Stipulation did not start until June 2018. Tr. I at 34:13-19. Those discussions occurred exclusively between FirstEnergy and Staff until October 31, 2018, when FirstEnergy invited the other parties to a group meeting on November 1, 2018. *Id.* at 34:20-35:5, 35:6-10. Just over a week later, on November 9, 2018, the signatory parties filed the Stipulation. Co. Ex. 1. The Companies then filed a motion to consolidate the four cases addressed in the Stipulation. The Supplemental Stipulation was filed on January 25, 2019. Co. Ex. 3.

2. The Original Stipulation and Supplemental Stipulation

The Stipulation proposes substantial FirstEnergy investment in grid modernization technologies, as part of an initial set of projects called “Grid Mod I” that the Company proposes to implement over a three-year period. Co. Ex. 1 at 3. In total, the Stipulation authorizes FirstEnergy to recover capital and operations and maintenance (“O&M”) costs through Rider AMI for the following:

- 700,000 advanced meters along with supporting communications infrastructure and “AMI related distribution expenditures,” *id.* at 14, 7 & n.14;
- A Meter Data Management System (“MDMS”) that “enables the validation, editing, and estimating . . . of meter data for billing purposes,” *id.*;
- Distribution Automation on at least 200 circuits, *id.* at 19;

- Integrated Volt/VAR Control on at least 202 circuits, *id.*; and
- An Advanced Distribution Management System “designed to support a broad range of current and future distribution management and optimization,” *id.* at 21; and
- Up to \$50 million for “platform” work on the grid. Co. Ex. 3 at 7.

The Stipulation also requires FirstEnergy, within six months of an Opinion & Order in this proceeding, to “propose a time-varying rate offering for non-shopping customers . . . designed to achieve the energy and capacity savings detailed in the cost-benefit analysis.” Co. Ex. 1 at 17. That proposal is “to leverage enabling devices, e.g. smart thermostats.” *Id.* However, the Stipulation provides that, with Commission approval, FirstEnergy will withdraw its time-varying rate offering “[o]nce there are either (a) at least three suppliers offering products utilizing AMI data or (b) at least three different types of time-varying products utilizing AMI data.” *Id.* at 17-18.

Attachment B of the Stipulation summarizes the costs and benefits of Grid Mod I:

Total Project: Grid Mod I		
(\$ in millions)	Nominal	NPV
Estimated Benefits	\$ (1,782)	\$ (808)
Estimated Costs		
Capital	\$ 516	\$ 445
Incremental O&M	\$ 342	\$ 207
Operational	\$ (175)	\$ (78)
Savings		
Total	\$ 683	\$ 574
Net Benefits	\$ 1,098	\$ 234
Benefit-to-Cost Ratio	2.6	1.4

Co. Ex. 1, Att. B.

However, this chart does not make it clear that the Stipulation does not guarantee the specified operational savings of \$175 million (20-year nominal value) or \$78 million (net present

value, or “NPV”). While FirstEnergy’s cost-benefit analysis predicts such savings will result from Grid Mod I, the Stipulation in fact commits FirstEnergy to providing operational savings credits of only \$33.31 million over six years. Co. Ex. 1 at 23, Att. D; Co. Ex. 3 at 6. Thus, if the full operational savings do not in fact materialize as projected, the Companies’ customers may pay up to \$825 million (nominal) for Grid Mod I, rather than the \$683 million listed in Attachment B.

The Stipulation provides for Commission review of FirstEnergy’s Grid Mod I expenditures through an annual audit of Rider AMI capital and incremental O&M costs. Co. Ex. 1 at 12. This audit process includes verification of costs as well as “[v]erification that the Grid Mod I investments are used and useful and were prudently incurred.” Co. Ex. 3 at 3. FirstEnergy also must include workpapers with each of its quarterly Rider AMI updates to Staff that document the status of deployment and related impacts for Grid Mod I based on performance metrics set forth in Stipulation Attachment C. Co. Ex. 1 at 22. Those performance metrics do not include any qualitative or quantitative targets, but simply provide for FirstEnergy to report the status of parameters related to the deployment and impacts of AMI, DA, ADMS, and IVVC. Co. Ex. 1, Att. C.

Finally, under the Supplemental Stipulation, Staff is to perform or hire a consultant to perform an operational benefits assessment midway through the Grid Mod I implementation period “to evaluate whether the actual functionality and performance of the project is consistent with the planned specifications.” Co. Ex. 3 at 5. This review may include “an independent cost-benefit analysis for this project.” *Id.*

Coupled with this grid modernization proposal, the Stipulation also provides outstanding tax refunds to FirstEnergy customers in connection with the TCJA, amounting to approximately \$900 million. Co. Ex. 1 at 2.

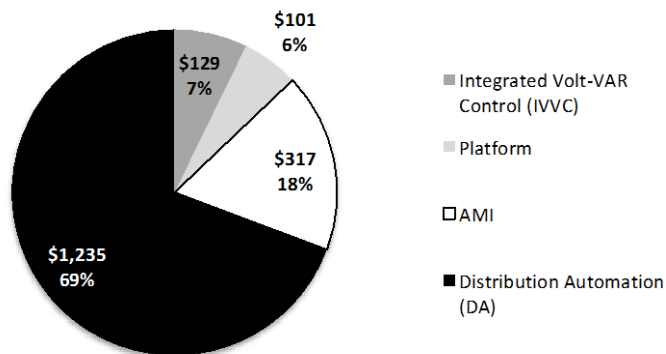
3. The Cost-Benefit Analysis

As part of the Stipulation, FirstEnergy, Staff, and the other signatories to the original Stipulation agreed “that Grid Mod I produces a positive cost-benefit analysis (on a net present value basis),” as summarized in Attachment B to the Stipulation. Co. Ex. 1 at 10, Att. B. FirstEnergy did not file the actual cost-benefit analysis underlying Attachment B with the Stipulation, but rather provided it to parties under a blanket confidential designation through a subsequent discovery response. ELPC Ex. 23c (“Cost-Benefit Analysis”). That cost-benefit analysis breaks down the costs and benefits of the individual components of Grid Mod I: AMI, DA, IVVC, ADMS, Platform (the distribution platform modernization work described in Stipulation Section V.I), and “Other” (AMI related distribution expenditures such as socket repairs per Stipulation Section V.I). *See id.*

FirstEnergy projects a significant portion of the capital costs for Grid Mod I will stem from the deployment of 700,000 advanced meters, with capital costs, incremental O&M costs, legacy meter costs, and AMI-related distribution repair constituting \$ [REDACTED] (nominal) of the total \$858 million (nominal) costs for Grid Mod I over 20 years. The remaining \$ [REDACTED] (nominal) cost includes \$ [REDACTED] for DA; \$ [REDACTED] for IVVC; \$ [REDACTED] for ADMS; and \$50 million for Platform.

Meanwhile, FirstEnergy estimates that the bulk of the projected benefits – almost 70% of nominal benefits – will come from Distribution Automation, as reflected in a summary chart prepared by the Environmental Groups’ witness Curt Volkmann:

Grid Mod 1 CBA Benefits
(\$ in millions, 20-year nominal)



ELPC Ex. 32, Volkmann Public Direct Test. at 8. Another 18% of the benefits – \$317 million (nominal) are projected to come from AMI, with the remaining 13% from IVVC and Platform work. *Id.* On a nominal basis, [REDACTED]

III. ARGUMENT

A. The Stipulation Signatories Bear the Burden of Proof in This Proceeding

The Commission’s traditional standard of review for stipulations evaluates three criteria:

- (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?

In re Columbus S. Power Co., Case Nos. 11-346-EL-SSO, *et al.*, Opinion and Order (Dec. 14, 2011) at 27. The burden is on the signatory parties to satisfy all three prongs of this standard. *In re Ohio Power Co.*, Case Nos. 14-1693-EL-RDR *et al.*, Opinion and Order (Mar. 31, 2016) at 18.

B. The Evidence Does Not Support a Conclusion that the Stipulation Is the Product of Serious Bargaining

When the Commission carries out its ratemaking functions, it must determine if the rates are just and reasonable under Ohio Revised Code (“R.C.”) 4909.22. Moreover, where the Commission is conducting a proceeding under the auspices of the ESP statute – as is the case in authorizing cost recovery through Rider AMI – “[t]he burden of proof in the proceeding shall be on the electric distribution utility.” R.C. 4928.143(C)(1). However, the Commission applies a weaker standard of review to the Stipulation in this proceeding– even though the settlement is not unanimous, and does not reflect agreement by a number of parties including the Environmental Groups.

As the Commission recently explained, the stipulation standard alters its review because under that standard it gives the stipulation “substantial weight” and reviews the total stipulation package pursuant to the applicable three-prong test, as opposed to considering and making “separate determinations . . . regarding each aspect” of an initial application. *In re Duke Energy Ohio*, Case Nos. 17-32-EL-AIR *et al.*, Opinion and Order (Dec. 19, 2018) at 103. This stands in contrast to a typical application of any kind at the Commission, where a utility must justify each element of its proposal and therefore usually files extensive testimony and exhibits from a number of witnesses supporting its request. In this proceeding, as is common even where there is stipulation that is not unanimous, FirstEnergy fails to provide that type of record and instead relies on short testimony from a single witness, who testifies on the Stipulation rather than the detailed merits of the proposal. This practice effectively creates a shield for the utility and other signatories, preventing them from having to support the merits of the individual components of a settlement. Instead they often simply assert that key elements of a stipulation are the result of settlement discussions, as a replacement for actually producing detailed evidence in support of a

proposal. *See, e.g.*, ELPC Exs. 1, 4, 9. The resulting limited record provided in support of the \$825 million in expenditures proposed here heightens the need for the Commission to rigorously apply the test it applies to Stipulations.

Under this altered standard of review, the Commission first asks, “[i]s the settlement a product of serious bargaining among capable, knowledgeable parties?” The Ohio Supreme Court has held that in order to determine whether “serious bargaining” occurred, the Commission must investigate the context and circumstances of the settlement discussions to ensure the “integrity and openness of the negotiation process.” *Ohio Consumers’ Counsel v. Public Utilities Commission of Ohio*, 111 Ohio St. 3d 300, 320 (2006). In reaching a determination on this factor, at a minimum, the Commission should ensure that all parties had a chance to participate in the negotiations, and that those parties had a real opportunity for meaningful input. As the Ohio Supreme Court explained in *Time Warner AxS v. Public Utilities Commission of Ohio*, it would be a matter of “grave concern” if a “partial stipulation arose from settlement talks from which an entire customer class was intentionally excluded.” 75 Ohio St.3d 229, 233 n.2, 661 N.E.2d 1097 (1996). In this case, the Stipulation signatories have offered no evidence to support the proposition that any other party had a meaningful opportunity to provide input regarding the substance of Grid Mod I after Staff and FirstEnergy reached a preliminary agreement before November 1, 2018.

The Commission has to know enough details of the negotiations to make a reasonable determination as to whether serious bargaining took place. Ohio Rule of Evidence 408 allows the Commission to consider information regarding settlement discussion, excluding elements of negotiations from the record only if they relate to validity of a claim or the amount of a claim. The rule “does not require exclusion when the evidence is offered for another purpose, such as

proving bias or prejudice of a witness, negating a contention of undue delay, or proving an effort to obstruct a criminal investigation or prosecution.” Ohio Rule of Evidence 408. Interpreting Rule 408, the Ohio Supreme Court has noted that, “Indeed, Evid.R. 408 provides that evidence of settlement may be used for several purposes at trial, making it clear that discovery of settlement terms and agreements is not always impermissible.” *Ohio Consumers’ Counsel v. Pub. Utilities Comm’n of Ohio*, 111 Ohio St. 3d 300, 322 (2006).

Based on this rule and precedent, the Commission has no reason to exclude evidence related to whether FirstEnergy and Staff’s negotiations from June to October 2018 resulted in a Grid Mod I package that was set in stone prior to the all-party negotiations beginning on November 1, 2018, and whether any changes proposed by parties to alter or reallocate the Grid Mod I spending were ever considered. Without having such information in the record, the Commission cannot determine whether “serious bargaining” has taken place.

It is particularly vital to address this concern when the Stipulation conditions the refund of more than \$900 million in excess tax collections to customers on signatories’ assent to Grid Mod I. As discussed further below, the Ohio Consumers’ Counsel (“OCC”), the statewide representative of Ohio residential consumers, expressly stated that it “signed on for the[se] tax benefits,” while refusing to agree to the validity of Grid Mod I or take any position as to whether it is likely to deliver the benefits projected by FirstEnergy. Tr. II at 317:1-8, 320:11-18; OCC Ex. 1, Willis Direct Test. at 6.

1. The Actual Record on Negotiation Does Not Provide Sufficient Evidence to Show Serious Bargaining.

The record in this case does not reflect that the Environmental Groups and other intervenors had a meaningful opportunity to participate in the negotiations, and thus the

Stipulation fails to meet the “serious bargaining” prong. The testimony on the negotiations consists principally of the following summary by Mr. Fanelli:

At the initial group meeting, Staff and the Companies reviewed potential terms of agreement and all parties were invited to share their comments, concerns, and questions about a potential settlement. The Companies and Staff also contacted other parties who did not attend the initial group meeting to review the potential settlement and encourage participation. Numerous one-on-one or small group meetings with interested parties were also held, along with two additional group meetings. Additional supporting information, including estimated typical bill impacts, was exchanged between the Companies and the parties to assist in the parties’ review of a potential settlement. Collectively, these meetings and information exchanged facilitated inclusive and meaningful negotiations of a potential settlement.

Co. Ex. 2 at 7. And as to the negotiations regarding the Supplemental Stipulation:

Following the filing of the Original Stipulation, which itself was a product of serious bargaining, the Companies continued to engage in serious bargaining with parties in the proceeding, including a group meeting and numerous discussions and information exchanges with one or more parties. Collectively, these meetings and information exchanges facilitated inclusive and meaningful negotiations of potential modifications to the Original Stipulation, which culminated in the filing of the 1 Supplemental Stipulation.

Co. Ex. 4 at 3-4.

This conclusory testimony asserts that “serious bargaining” took place without providing any evidence that it actually did. For example, Mr. Fanelli never addresses whether FirstEnergy refused to consider parties’ input regarding the content of Grid Mod I after reaching agreement with Commission Staff.¹ While the Commission may give “substantial weight” to the Stipulation, that does not eliminate the obligation to make a determination as to whether the standard of review – including the “serious bargaining” prong – is satisfied by actual “evidence of record.” *In re Application of Columbus S. Power Co.*, 2011-Ohio-2383, ¶ 19, 129 Ohio St. 3d 46, 50, 950 N.E.2d 164, 168. As the Ohio Supreme Court has explained, “[t]he agreement of

¹ The Supplemental Stipulation is completely silent.

some parties is no substitute for the many procedural protections reinforced by the evidentiary-support requirement.” *Id.*

If anything, it appears from at least the minimal evidence that the Attorney Examiners allowed into the record that Staff and FirstEnergy took what amounts to a “done deal” to the parties and said take it or leave it, except for limited changes that would not affect the key elements of Grid Mod I, such as the overall costs or how the money would be spent. What we know is that Staff and FirstEnergy began negotiating this Stipulation in June of 2018. FirstEnergy engaged in five months of negotiations with Staff behind closed doors before actually opening those negotiations to other parties on November 1, 2018, then finalizing the Stipulation just eight days later, on November 9, 2018. Tr. I at 34-35. Nothing in the record shows that the parties were able to engage in “serious bargaining” over those eight days, especially in dealing with a complex proposal involving investment of hundreds of millions of dollars and the last-minute issues regarding tax refunds of almost a billion dollars. This gap in the evidence is particularly concerning since FirstEnergy’s discovery responses regarding the original November 9, 2018 Stipulation terms establishes that the key elements of Grid Mod I were the result of that purported “serious bargaining,” rather than any objective determination of the proper level of investments in AMI, IVVC, and other elements. ELPC Exs. 1, 4, 9; Tr. I at 35:24-36:12.

The Supplemental Stipulation filed on January 25, 2019, does nothing to alter the substantive grid modernization investments locked in as of November 9, 2018, and the only testifying signatory to that Supplemental Stipulation expressly stated that the Ohio Consumers’ Counsel sought a greater share of the Stipulation tax benefits but took no position on the merits of Grid Mod I. Tr. II at 317:1-8, 320:11-18; OCC Willis Direct Test. at 6; *see also* Co. Ex. 3 at 8

(stating that OCC and NOPEC “take no position on whether Grid Mod I produces a positive cost-benefit analysis for consumers, but agree not to oppose Attachment B for purposes of the Original Stipulation and Supplemental Stipulation”). This testimony cannot give the Commission any confidence that the signatory parties were able to engage in “serious bargaining” regarding all elements of the Stipulation after the original Stipulation was filed on November 9, 2018.

However, when the Environmental Groups tried to bring to light what took place in the settlement negotiations in order to demonstrate that the negotiations did not in fact meet the “serious bargaining” standard, the Attorney Examiners barred this line of questioning. The record reflects numerous objections by FirstEnergy attorney Lang, and the Attorney Examiners upholding those objections. Tr. I at 36-38. The following exchange represents the lack of record on the negotiations:

Q: And I believe you mentioned you did receive feedback from parties, during the course of the settlement discussions, regarding the contemplated spending from Grid Mod I, correct?

Mr. Lang: Objection, your Honor.

Examiner Price: Sustained.

ELPC counsel then explained:

I am trying to be as candid as I can in my questions, but at the same time I think we are really trying to get at here is that you can have a party in the room for settlement discussions and still be excluding them if you refuse to listen to anything they say, and the stipulation standard does provide for us to present evidence on whether there was serious bargaining. And so, I’m not asking what the feedback was. I am not asking who said what. I am just asking whether they got feedback about this and whether – I’d like to ask whether they listened to that.

Examiner Price: I appreciate your concerns. Sustained.

Tr. at 41.

This exchange exemplifies the gaps in the record regarding the prong that requires serious bargaining among knowledgeable and capable parties and a cooperative process. ELPC counsel provided an offer of proof as to why they sought to question Mr. Fanelli on this point: to address whether, “in fact, all parties, except Staff, were excluded from discussion of the spending proposed for Grid Mod I and were not able to have any input into the spending proposed for Grid Mod I after the initial stipulation was signed and after it was agreed upon by Staff and the Companies.” Tr. I at 176:21-177:2. Although the Attorney Examiners also refused to allow *voir dire* of Mr. Fanelli to establish the substance of his potential testimony on this point, Tr. I at 179:1-11, Ohio law does not require anything more than an attorney’s proffer to preserve such evidentiary issues. *State v. Heinish*, 50 Ohio St. 3d 231, 240, 553 N.E.2d 1026 (1990) (“While defendant was not allowed to voir dire these witnesses, he was allowed to proffer to the court for review on appeal the substance of what the evidence would have shown, had the defendant been allowed to present it at trial.”).

The exclusion of evidence as to whether FirstEnergy engaged in bargaining regarding Grid Mod I with all parties ignores Ohio Rule of Evidence 408 and relevant case law. More importantly, if the Commission cannot review answers to the simple questions the Environmental Groups tried to ask, then the Commission cannot reach the conclusion that parties had the opportunity to participate in a serious negotiation. Mr. Fanelli could have easily answered these questions without divulging anything even close to the kind of limited issues excluded from the record under Rule 408 in order to encourage settlements. The Commission therefore should disapprove the Stipulation in lieu of any record evidence that the first prong of the stipulation standard is satisfied, or at least reopen the record to allow the parties to address this point with all relevant evidence.

2. Not All the Parties to the Stipulation Actually Support the Essence of the Settlement

The signature of the Ohio Consumers' Counsel on the Stipulation embodies how the stipulation standard prejudices intervenors and causes unjust results in the settlement process. OCC did not sign the original Stipulation, but ultimately signed the Supplemental Stipulation. The Supplemental Stipulation notes, "[t]he Office of Consumers' Counsel and NOPEC take no position on whether the Grid Mod I produces a positive cost-benefit analysis for consumers, but agree not to oppose Attachment B for purposes of the Original Stipulation and Supplemental Stipulation." Co. Ex. 3 at 8. On cross-examination, OCC witness Willis admitted, that absent the tax benefits from the settlement that have nothing to do with grid modernization, OCC would not have signed the Stipulation. Tr. Vol II at 320. Thus, OCC signed the Stipulation taking no position on one of the most important consumer issues in the case in order to be able to increase residential consumers' share of a tax refund that does not relate in any way to Grid Mod I, while having to give up the opportunity to seek any substantive changes to the Grid Mod I investments. *See* Co. Ex. 3 at 2, Att. E; Tr. I at 38-41. The Commission needs to make a finding that puts a stop to this type of negotiating.

3. The Commission Should Change Its Application of the Stipulation Review Standard

Based on a search of the relevant precedent, the Commission has never found that a Stipulation does not meet the serious bargaining standard. This speaks to the problem for parties facing the choice between signing onto a settlement without a chance for meaningful input or taking their chances in litigation, a dilemma illustrated by this case.

Given that the stipulation review standard comes from its own precedent, the Commission can use this case to reject the standard and establish that it will not apply a different

standard of review to a stipulation unless it is unanimous. Non-unanimous stipulations may still be filed but they will be subject to the original statutory standard established for their respective subject-matter. This is how it is done in other jurisdictions.

For example, the Illinois Supreme Court required the Illinois Commerce Commission to apply the same standards in non-unanimous settlements that it applies in traditional ratemaking cases in 1989 in *Business Professional People for the Public Interest v. Illinois Commerce Commission*. In that case the Court ruled that, “if the agency makes an *independent* finding, supported by substantial evidence in the record as a whole, that the proposal would establish just and reasonable rates, the agency may adopt a settlement proposal which fails to garner unanimous support.” 136 Ill. 2d 192, 217 (1989) (emphasis added). The Illinois law is consistent with the U.S. Supreme Court finding in *Mobil Oil Corp v. Federal Power Commission*, where the Court stated that the Federal Power Commission acted permissibly where it approved a non-unanimous settlement on the basis of “an independent finding supported by ‘substantial evidence on the record as a whole’ that the proposal will establish ‘just and reasonable’ rates for the area.” 417 U.S. 283, 314 (1974).

These Illinois and U.S. Supreme Court decisions support the argument that when a settlement is not unanimous the Commission must make an independent finding regarding the justness and reasonableness of each element of the stipulation. Otherwise, utilities will be able to continue make a deal with a party or parties, knowing they will face lesser scrutiny of the stipulation “package” than an initial application. Ultimately, the Commission needs to stop giving undue deference to non-unanimous settlements in Ohio by changing its standards for review. However, at a minimum, Environmental Groups request that the Commission rule in

this proceeding that the stipulating parties have failed to demonstrate that they satisfy the standard that the Stipulation is a product of serious bargaining.

C. The Projected Benefits of the Stipulation Are Based on Incomplete, Unreasonable, and Unsupported Assumptions

Fundamentally, there is not sufficient evidence before the Commission to show that Stipulation will provide customer benefits that outweigh its significant costs: \$858 million on a nominal basis and \$652 million NPV. Co. Ex. 1, Att. B. That issue must be the focus of the Commission's consideration of the second settlement prong: whether the settlement, as a package, benefits ratepayers and the public interest. A thorough consideration of the Stipulation's benefits must also be informed by the fact that FirstEnergy customers are already due to spend more than \$390 million in support of grid modernization under Rider DMR, and may pay hundreds of millions more if that rider is extended. Moreover, the Commission's PowerForward Roadmap clearly and sensibly explains that any grid modernization investment should provide "benefits generated by the project [that] will exceed costs on a net present value basis," as demonstrated by a cost/benefit analysis that allows "the Commission and stakeholders can transparently evaluate whether a grid modernization investment should be made in the first place." PowerForward Roadmap at 27. It is vital for the Commission to scrutinize these planned investments at the outset, because FirstEnergy is likely to receive full cost recovery of hundreds of millions of dollars – including a return on equity of up to 10.38%, Co. Ex. 3 at 3 – regardless of whether the projected Stipulation benefits ever materialize. Ultimately, the Stipulation cannot survive such scrutiny, because its estimated benefits rest on an incomplete, unreasonable, and unsupported analysis by FirstEnergy.

1. If the Commission Allows FirstEnergy to Proceed with Grid Mod I Based on an Invalid Cost-Benefit Analysis, the Stipulation Will Permit FirstEnergy to Recover Its Full Costs and Return on Equity Even if Grid Mod I Does Not Prove to Be Cost-Effective

It is essential for the Commission to ensure the credibility of FirstEnergy's projected benefits from Grid Mod I before approving the Stipulation, because FirstEnergy is not likely to face any adverse consequences if those benefits do not materialize.

In general, the Stipulation's oversight mechanisms do not allow the Commission to reduce FirstEnergy's cost recovery for Grid Mod I even if the Companies fail to deliver many of its projected benefits. The annual Rider AMI audit process is limited to verification of FirstEnergy's costs and "[v]erification that the Grid Mod I investments are used and useful and were prudently incurred." Co. Ex. 3 at 3. With respect to the Grid Mod I performance metrics in Stipulation Attachment C, although FirstEnergy must report on those quarterly, they do not incorporate any specific targets based on the Companies' Cost-Benefit Analysis. Finally, although the operational benefits assessment provided for in the Supplemental Stipulation may include "an independent cost-benefit analysis," the results of any such assessment will be used only to adjust the operational savings credited to customers under Rider AMI and to inform "future deployment of the Companies' grid modernization investment" – not as a basis for disallowing Grid Mod I cost recovery. Co. Ex. 3 at 5.

None of these provisions offer any pathway for FirstEnergy to be held accountable for unreasonably inflating the projected benefits from Grid Mod I in order to be "consistent with the PowerForward Roadmap." Co. Ex. 1 at 2. In fact, FirstEnergy witness Fanelli testified that none of these provisions authorize the Commission to reduce the Companies' cost recovery if they do not meet "the projected benefits contained in the cost/benefit analysis." Tr. I at 75:2-13. He also testified that FirstEnergy's position is that the "estimated benefits in the cost-benefit analysis"

does not have any “direct relation to the prudently-incurred standard.” Tr. I. at 76:14-17. That view is likely correct in light of Commission precedent generally allowing cost recovery for grid modernization investments under the prudence or used and useful standards where there are at least some benefits to customers. *See, e.g., In re Duke*, Case Nos. 17-32-EL-AIR *et al.*, Opinion and Order (Dec. 19, 2018) at 78, 73 (allowing cost recovery for AMI deployment where it “has been serviceable and benefits customers,” regardless of whether Duke was able to “deliver its promised benefits” in full). Accordingly, the Commission’s scrutiny in this proceeding is the main safeguard to hold FirstEnergy to delivering on its promises to customers.

2. The Cost-Benefit Analysis Rests on Invalid Assumptions About the Benefits of Proposed Distribution Automation Investments

As detailed in the testimony of Environmental Groups’ witness Curt Volkmann, “the Companies have failed to credibly demonstrate that Grid Mod 1, as a package, delivers net benefits to ratepayers.” Volkmann Direct at 4. FirstEnergy projects that, of the estimated \$1.782 billion in nominal benefits from Grid Mod I, nearly 70% – \$1.235 billion – will come from reliability improvements resulting from Distribution Automation investments. ELPC Ex. 32, Volkmann Public Direct Test. at 8. Mr. Volkmann’s principal critique of the Cost-Benefit Analysis for Grid Mod I is that this level of projected DA benefits “is not credible” because it is based on unreasonable assumptions by FirstEnergy as to reliability improvements from Distribution Automation. *Id.* at 7-8. In fact, Mr. Volkmann calculated that using credible assumptions for DA reliability improvements, it would be reasonable to estimate such benefits at approximately \$389 million (20-year nominal) for the proposed 200 DA circuits, just a quarter of the \$1.235 billion (20-year nominal) suggested by FirstEnergy. *Id.* at 18-19. Using that reasonable estimate of DA benefits rather than FirstEnergy’s inflated benefits calculation, the Grid Mod I proposal is not cost-effective on a net-present value basis, with NPV benefits of \$418

million compared to \$574 million of costs, even assuming all projected operational savings benefits do materialize.

a. FirstEnergy Claims Significant Distribution Automation Benefits as a Basis for Commission Approval of Grid Mod I

The Companies provided a basic explanation of DA technology in their 2016 Grid Modernization Business Plan:

DA focuses on improved reliability and is comprised of substation equipment, circuit reclosers, and wireless communications infrastructure. Fault Isolation Service Restoration (“FISR”) is a distribution automation application that runs a series of algorithms to determine the optimal operation of reclosers on a feeder so as to minimize both the duration as well as the number of customers affected by a power outage. This technology can be used to open and close reclosers to connect and disconnect certain portions of the grid as the real time operating conditions warrant. Particularly applicable to service outage situations, this technology provides the capability to automatically maximize the restoration of power from momentary abnormal conditions, minimize sustained customer outages as well as support FISR.

Case No. 16-481-EL-UNC, Grid Modernization Business Plan (Feb. 29, 2016), App. A at 11 (quoted in ELPC Ex. 32, Volkmann Public Direct Test. at 5-6).

FirstEnergy calculated the economic benefits of reliability improvements from DA based on projected outage reductions benefits from DA technology using the U.S. Department of Energy (“U.S. DOE”) Interruption Cost Estimate (“ICE”) Calculator. Among the key inputs to the ICE Calculator were FirstEnergy’s assumptions regarding projected improvements in two principle outage metrics – SAIDI (System Average Interruption Duration Index measured in minutes per customer) and SAIFI (System Average Interruption Frequency Index measured in interruptions per customer) – from DA deployment.

FirstEnergy based those assumptions on historical outage data from 34 circuits in the Cleveland area where the Companies deployed DA as part of a Smart Grid Modernization Initiative (“SGMI”) beginning in 2012. ELPC Ex. 32, Volkmann Public Direct Test. at 11.

FirstEnergy compared the 2005-2009 5-year average SAIDI and SAIFI (“Before Grid Mod”) with the June 2014-May 2018 4-year average SAIDI and SAIFI (“After Grid Mod”), both during major storms/events and excluding major storms/events. *Id.* at 11. Based on that outage data, the Companies are claiming expected improvement of 40% or more in SAIDI and SAIFI during major storms/events, and 28% improvement in SAIDI at other times, as summarized by Table 1 in Mr. Volkmann’s testimony:

	Expected Improvement	
	SAIDI	SAIFI
Platform	15%	6%
DA - major storms/events	46%	40%
DA - excluding major storms/events	28%	9%

Table 1

ELPC Ex. 32, Volkmann Public Direct Test. at 10, Tbl. 1. Because of the significant reliability improvements that FirstEnergy projects during major storms/events, the bulk of the estimated \$1.235 billion (20 year nominal) benefits from DA – \$803 million (20 year nominal) – are from expected reliability improvements during major storms/events. Only about a third of the projected DA benefits – \$432 million (20 year nominal) – is expected from reliability improvements excluding major storms/events.

It is especially important for the Commission to scrutinize FirstEnergy’s significant projected reliability improvements during major storms/events because neither the Stipulation nor the Commission’s rules require FirstEnergy to actually achieve those promised benefits. Although the Stipulation requires FirstEnergy to revise its applicable minimum performance standards for reliability under Ohio Adm. Code 4901:1-10-10(B)(7), Co. Ex. 1 at 21, that rule specifically excludes “performance data during major events . . . from the calculation of the [reliability] indices, proposed standards, and any revised performance standards.” Ohio Adm.

Code 4901:1-10-10(B)(4)(c); *see also* ELPC Ex. 32, Volkmann Public Direct Test. at 24.

Accordingly, FirstEnergy will not face any adverse consequences based on a violation of its reliability standards under Ohio Adm. Code 4901:1-10-30 if the proposed DA investments do not actually yield the projected improvements in reliability during major storms/events.

b. The Only Expert Assessment of the DA Benefits Claimed in the Cost-Benefit Analysis, by Environmental Group Witness Curt Volkmann, Shows They Are Based on Unreasonable Assumptions and Incorrect Data

Neither FirstEnergy's nor Staff's witnesses offered any expert analysis or detailed testimony regarding the claimed reliability benefits from Distribution Automation. Accordingly, the Commission must consider the validity of those projected benefits based on the only expert assessment in the record: that of Environmental Group witness Curt Volkmann.

In evaluating FirstEnergy's claimed reliability benefits from Distribution Automation, Mr. Volkmann brought to bear more than three decades of experience as an engineer and expert in the utility industry, primarily in electric transmission and distribution. ELPC Ex. 32, Volkmann Public Direct Test. at 1. That experience includes nearly ten years with Pacific Gas & Electric – including in a role authoring reliability reports for the utility. Tr. II at 271:3-8. Mr. Volkmann next spent approximately 20 years working for Accenture, a major global management consulting and technology firm, providing consulting services to a number of gas, electric, and water utilities. ELPC Ex. 32, Volkmann Public Direct Test., Ex. CV-1. In that time he rose to the position of Executive Director in Accenture's North American Utilities practice, and worked with dozens of distribution utilities around the world that have had various forms of distribution automation. Tr. II. at 231:12-18. Since 2015, Mr. Volkmann has provided independent expert consulting services in evaluating utility grid modernization plans in California, Iowa, Minnesota, Michigan, and North Carolina. ELPC Ex. 32, Volkmann Public

Direct Test. at 1. That has specifically included prior evaluations of utility Distribution Automation proposals by Southern California Edison, Duke North Carolina, and Dominion Virginia. Tr. II at 231:6-18. Based on this range of experiences, Mr. Volkmann is familiar with DA technologies and their impacts. Tr. II at 231:17-18.

Mr. Volkmann's expert conclusion after reviewing the Companies' claim of more than a billion dollars in reliability benefits from Distribution Automation is that it is simply "not credible," especially during major storms/events. ELPC Ex. 32, Volkmann Public Direct Test. at 8. FirstEnergy expects the bulk of the DA benefits – \$803 million (20 year nominal) – from expected reliability improvements during major storms/events, and only \$432 million (20 year nominal) in benefits from reliability improvements excluding major storms/events. *Id.* at 8-9. Mr. Volkmann's testimony explains the basic illogic of the expectation that DA will provide nearly twice the benefits in reducing outages during major storms/events as it does during other times:

As the Companies explained in their 2016 Grid Modernization Business Plan, the reliability benefits from DA result from the ability to automatically isolate faulted portions of a circuit and to quickly re-energize other customers by transferring them to adjacent circuits that are operating normally. These transfers of customers require that the adjacent circuits are operational and have sufficient capacity to serve the additional customer load.

During major storms/events when there is widespread system damage with multiple circuits impacted, the ability of DA to successfully transfer customers, restore service, and improve reliability is significantly impaired.

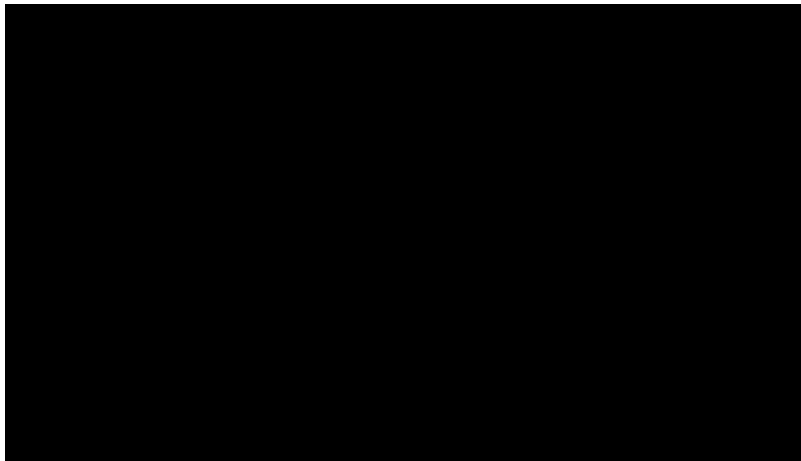
ELPC Ex. 32, Volkmann Public Direct Test. at 9. In other words, DA is likely to be less effective during major storms/events with widespread outages than during milder weather, so expecting two-thirds of the reliability improvements from DA to come during major storms/events is simply unrealistic as a matter of basic engineering.

Moreover, the actual data and assumptions underlying FirstEnergy's expectations regarding reliability improvements from DA are flawed, supporting Mr. Volkmann's conclusion that the Companies' projections simply don't make sense. Mr. Volkmann did not dispute the validity of projecting reliability improvements based on outage records for the 34 SGMI circuits before and after DA deployment. But such a comparison is reasonable only so long as FirstEnergy is comparing apples to apples, based on accurate records and excluding outlier events that skew the expectation of reliability improvements after DA deployment. Mr. Volkmann found significant flaws in both aspects of FirstEnergy's analysis.

First, the Companies made basic errors by including duplicate records for a major July 31, 2006 outage event in both the analyses with and without major storms/events, and by triple-counting an April 25, 2005 outage event in the major storms/events analysis. Removing those erroneous records reduces expected reliability improvement from DA, and in particular significantly reduces expected improvement in SAIDI excluding major storms/events from 28% to 16%. ELPC Ex. 32, Volkmann Public Direct Test. at 11-13.

FirstEnergy never offered any record evidence rebutting Mr. Volkmann's testimony regarding these errors. Nor did Staff provide any testimony that they had detected these errors or addressed them in determining the reasonableness of FirstEnergy's Cost-Benefit Analysis. In fact, Mr. Volkmann testified that he was surprised that Staff had not flagged the duplicate outage records in the course of their review, which supported his belief that Staff did not fully understand the Cost-Benefit Analysis at the time the Stipulation was filed. Tr. II at 273:25-274:6.

Additionally, Mr. Volkmann testified that the Companies' Cost-Benefit Analysis included significant outlier data that did not reflect "comparable levels of major storms/events" between the "before" and "after" periods for SGMI deployment of Distribution Automation. ELPC Ex. 32, Volkmann Public Direct Test. at 15. These outlier events included major snow and ice storms in the Cleveland area on April 2-3 and April 24-25, 2005 that caused outages far exceeding the customer minutes interrupted in any other month during the 2005-2009 period, as shown in a box plot prepared by Mr. Volkmann representing minimum, maximum, first/third quartiles and median values for customer minutes interrupted during the 15 months that had major storms/events in that initial timeframe:



ELPC Ex. 32c, Volkmann Confidential Direct Test. at 13-15.

FirstEnergy's inclusion of these extreme April 2005 events as part of the baseline to determine the potential effectiveness of DA is especially unreasonable because these were exactly the kind of events that would cause "widespread system damage" such that "the ability of DA to successfully transfer customers, restore service, and improve reliability is significantly impaired." ELPC Ex. 32, Volkmann Public Direct Test. at 9. Along similar lines, FirstEnergy unreasonably included time periods after the DA

deployment in its dataset when favorable reliability performance appeared to be the result of mild weather rather than any impact of DA. *Id.* at 15.

FirstEnergy did not provide any explanation in the record as to why it would be reasonable to include outage data from unusually severe weather events before DA deployment or outage data from unusually mild weather after DA deployment when attempting to credibly estimate reliability impacts from Distribution Automation. Yet the Companies' unreasonable inclusion of this data is the foundation of their claimed reliability improvements from DA during major storms/events. By comparing data including outlier major storms/events from before DA deployment to years with mild weather after DA deployment, FirstEnergy "skew[ed] the calculation of averages and inflat[ed] the expected reliability improvements of DA during major storms/events." ELPC Ex. 32, Volkmann Public Direct Test. at 13. In other words, FirstEnergy attributed reliability improvements during major storms/events to Distribution Automation when there is no evidence they were in fact due to anything other than better weather.

When Mr. Volkmann applied reasonable judgment as to comparable major storms/events during the relevant study periods, he determined that a reasonable estimate of expected reliability improvements from DA would be far lower – 8% improvement in SAIDI and 12% improvement in SAIFI. *Id.* at 17, Tbl. 3. Based on his revised inputs, Mr. Volkmann calculated that a reasonable estimate for DA benefits would be \$389 million (20 year nominal), rather than the \$1,235 million estimated by FirstEnergy. *Id.* at 18.

Mr. Volkmann's benefits calculation is consistent with all other evidence in the record. For example, FirstEnergy's Cost-Benefit Analysis relies in part on a Smart Grid

Consumer Collaborative report that states, based on an analysis of 26 separate smart meter and DA projects, that a reasonable estimate of the fault location/isolation benefits of DA would be \$40.14 per customer per year. ELPC Ex. 17, Companies' Response to ELPC Set 2 – RPD-003, Attachment 2, Smart Grid Consumer Collaborative, Smart Grid Economic and Environmental Benefits – A Review and Synthesis of Research on Smart Grid Benefits and Costs at 39 (“SGCC Report”) (Oct. 8, 2013). Meanwhile, FirstEnergy has not provided any evidence of any utility that has actually experienced, or even projected, the magnitude of DA benefits predicted in the Cost-Benefit Analysis. In fact, Mr. Volkmann testified that the typical utility practice in grid modernization business case analyses, and reporting of reliability in general, is to “exclude[] major storm events” from reliability metrics. Tr. II at 266:4-10.

This record evidence, un rebutted by any other party, cannot provide a basis for the Commission to reasonably credit FirstEnergy's projected reliability benefits from Distribution Automation. Without those benefits, Grid Mod I is not cost-effective on a net present value basis consistent with the PowerForward Roadmap.

3. The Cost-Benefit Analysis Includes Projected Customer Benefits from AMI That FirstEnergy Cannot Realize Without a Robust Smart Thermostat Program

The Environmental Groups propose that FirstEnergy add a smart thermostat program to Grid Mod I. Smart thermostats use occupancy sensors and other advanced technologies to automatically adjust temperatures when customers are away from home, and maintain comfort when they are home. STC Ex. 4, Dzubay Direct Test. at 7. They can also be used directly as part of a time-varying rate offering, such as for time-of-use optimization or demand response, even without direct third-party control. *Id.* at 8, 14-15; Tr. II at 283:21-284:6, 289:3-10. Smart

thermostats thus provide customers real savings at a minimal additional cost. The testimony from Smart Thermostat Coalition (“STC”) witness Tamara Dzubay explains the details of the program and why it makes sense to combine smart thermostats with AMI meter deployment in order to maximize customer savings. Those savings are necessary to ensure that, regardless of flaws in other components of the Companies’ Cost-Benefit Analysis, customers get the full benefits of AMI – the central element of Grid Mod I. As the Virginia State Commerce Commission ruled just last month with respect to a grid modernization proposal by Virginia Electric and Power Company, AMI deployment is not reasonable where a utility “has failed to include in its Petition a well-developed and comprehensive plan to maximize the potential of AMI.” *Dominion Grid Modernization Case*, Final Order (Va. SCC Jan. 17, 2019) at 10.

a. FirstEnergy’s Own Cost-Benefit Analysis and Staff’s Testimony Show that Enabling Technologies, Especially Smart Thermostats, Are Necessary to Provide Customers with Savings from AMI.

As detailed above, costs related to AMI represent a significant portion of the costs of Grid Mod I: \$ [REDACTED] (nominal) of the total \$858 million (nominal) costs for Grid Mod I over 20 years, or more than [REDACTED]%. Meanwhile, the Cost-Benefit Analysis identifies customer benefits from AMI totaling just \$317 million (nominal), based on five categories of benefits: (1) energy and capacity savings from customer participation in time-varying rates that utilize AMI data (“time-varying rate savings”); (2) revenue assurance benefits from ensuring accurate records of energy consumption; (3) energy and capacity savings from customer usage reduction based on “better understanding of energy management” (“customer energy management savings”); (4) carbon emission reduction benefits; and (5) benefits from reduction of outage times. ELPC Ex. 23c, “AMI Benefits” tab; Tr. I at 44:3-17. Of these five categories, the time-varying rate savings and customer energy management savings represent \$ [REDACTED] and \$ [REDACTED] respectively, of

the total benefits. ELPC Ex. 23c, “AMI Benefits” tab. This means that FirstEnergy bases a large portion of the projected customer benefits from AMI on a prediction that smart meters will enable customers to directly reduce their energy consumption, either through time-varying rate participation or by taking more action based on a better understanding of their energy usage. Although the Cost-Benefit Analysis only quantifies direct participant savings, it is also notable that such energy and demand reductions will benefit non-participants as well by reducing overall system costs and rates. *See* ELPC Ex. 17, SGCC Report at 23, 25; PowerForward Roadmap at 22.

According to FirstEnergy’s own analysis, these time-varying rate and customer energy management savings depend on the deployment of enabling technologies along with smart meters. In projecting customer energy and capacity savings for the time-varying rate and customer energy management categories, FirstEnergy relied in large part on a 2015 report on a consumer behavior study conducted in Cleveland Electric Illuminating Company territory during FirstEnergy’s initial pilot AMI deployment (“CEI Pilot Study”), including for projected per-customer energy and capacity savings. *See* ELPC Ex. 23c, “AMI Benefits” tab; Tr. I at 45:8-48:3. FirstEnergy drew its time-varying rate savings assumptions specifically from the results for customers in the pilot who were on a “peak time rebate” rate (where they would receive payments for reducing usage at peak times) and who also received a programmable controllable thermostat (“PCT”) – a precursor to the present-day smart thermostat. *See* ELPC Ex. 16, ELPC Ex. 31c (workpaper calculations for Cost-Benefit Analysis drawing on CEI Pilot Report data); CEI Pilot Report at vii, 2-1 to 2-8. Thus, the time-varying rate savings in FirstEnergy’s Cost-Benefit Analysis are explicitly tied to parallel deployment of advanced thermostats. FirstEnergy’s Cost-Benefit Analysis also relied on a Smart Grid Consumer Collaborative report

reviewing multiple smart meter deployments and showing “that pairing time varying rates with enabling technologies results in the greatest level of peak reduction and, thus, provides the greatest benefit to customers and the grid.” STC Ex. 4, Dzubay Direct Test. at 10 (citing ELPC Ex. 17, SGCC Report). Yet FirstEnergy has no budget or plan for any deployment of enabling technologies as part of Grid Mod I. Tr. I at 50:20-51:1.

Meanwhile, FirstEnergy based its customer energy management savings assumptions on savings achieved by customers in the CEI Pilot who were on the same peak-time rebate rate but who did not have a PCT, but rather an in-home display (“IHD”). *See* ELPC Ex. 23c, “AMI Benefits” tab; ELPC Ex. 16, CEI Pilot Report; ELPC Ex. 31c (workpaper calculations for Cost-Benefit Analysis drawing on CEI Pilot Report data). An IHD is a device that connects to an AMI meter over a home area network and directly shows a customer their real-time electricity usage as a basis for individual customer decisions about whether to reduce energy usage. Tr. I at 204:19-24; STC Ex. 4, Dzubay Direct Test. at 6. But FirstEnergy’s reliance on customers achieving energy management savings based on the CEI Pilot participants is unreasonable given that the IHD treatment customers were both provided with IHDs for free and were on a peak-time rebate rate that would provide a financial incentive for usage reductions at peak times. ELPC Ex. 16, CEI Pilot Report at 2-2 to 2-4. Neither is the case in the Grid Mod I proposal, where FirstEnergy presumes that customers will reduce their usage without being on a time-varying rate and without being provided an IHD. Tr. I at 51:10-14, 68:1-6.

Indeed, FirstEnergy fails to explain exactly what it expects customers to do to take advantage of the new information from AMIs without any enabling technology. As Staff witness Schaefer testified, one of the best options for many customers to reduce their usage is to lower their cooling load, but they can’t do that when they’re not at home without a smart thermostat.

Tr. I at 202:24-203:3; STC Ex. 1 at 1. That’s especially pertinent given that peak demand times are generally late weekday afternoons, when many adults may be out of the house. *See* Ohio Adm. Code 4901:1-39-01(E) (defining “summer on-peak period” in Ohio as “June through August on weekdays between three p.m. and six p.m.”).

Moreover, Ms. Schaefer also testified herself at hearing that “part of the [Staff’s] consideration in the reasonableness of the assumptions in the CBA [Cost-Benefit Analysis] in the current case” was in fact the “number of enabling technologies deployed by the utility.” Tr. I at 210:16-211:2. She testified that she believed a recent FirstEnergy energy efficiency plan stipulation provides for “over 60,000 smart thermostats through two different programs,” but noted that there was a delay in approving that stipulation and that she had not looked at FirstEnergy’s annual reports of the actual results of its efficiency programs. Tr. I at 211:2-212:6. In fact, FirstEnergy did not provide any information about actual smart thermostat penetration in support of the reasonableness of the Cost-Benefit Analysis, Tr. I at 211:9-213:9, and responded to a discovery request about smart thermostat penetration levels in the Companies’ service territory by stating they do not have that information. ELPC Ex. 8. The Companies’ only witness, Mr. Fanelli, was also unable to answer any detailed questions about FirstEnergy’s energy efficiency programs. Tr. I at 96:23-98:1.

In the final analysis, FirstEnergy has piloted advanced thermostats with its AMI meters, and demonstrated customer savings. The Companies also based the savings in its Cost-Benefit Analysis on combining time-varying rates with enabling technologies, and Staff assumed that combination would be supported by FirstEnergy programs in determining that the Cost-Benefit Analysis was reasonable. The Commission cannot approve the Stipulation without ensuring that there are directives and funding in place to actually carry out that plan.

b. The Record Reflects Substantial Customer Benefits from Smart Thermostats.

STC witness Dzubay's testimony lays out the benefits of smart thermostats, and her testimony is consistent with the benefits FirstEnergy itself touts to its customers on its website. Ms. Dzubay notes that STC members ran Ohio smart thermostat usage data through the U.S. EPA's Energy Star metric and the results show 15.2% cooling savings for Ohio customers. This is consistent with FirstEnergy's own findings as shown on its "Energy Save Ohio" website for customers:

Households with a smart thermostat see significant savings on their heating and cooling costs. For the average household, half of the energy costs are due to heating and cooling – more than \$900 per year. Based on typical energy costs, a smart thermostat can provide savings of \$131 to \$145 per year.

STC Ex. 1 at 1. These savings estimates do not include any additional savings from time-varying rates that FirstEnergy will implement. Additionally, the savings numbers don't include the unquantified convenience benefits of the smart thermostats. FirstEnergy's website explains that a smart thermostat allows a customer to "Adjust your thermostat settings from your phone or tablet whether you are home, on the road, or on vacation." *Id.* at 2. Also, smart thermostats provide "Home and Away Modes: Your thermostat uses your smart phone to understand your location...Your thermostat will make sure the temperature is just the way you like it when you arrive." *Id.*

FirstEnergy has failed to demonstrate that giving customers an IHD in isolation, on the other hand, will lead to meaningful customer action and savings. In fact, a U.S. Department of Energy ("DOE") study of 70 smart grid grant projects found that PCT automation enabled greater peak demand reductions than manual responses and IHDs. STC Ex. 4, Dzubay Direct Test. at 12 (citing DOE Report, *Results from The Smart Grid Investment Program* (Sept. 2016) at

6, available at www.energy.gov/sites/prod/files/2016/12/f34/AMI%20Report_9-26-16).

Meanwhile, FirstEnergy's own AMI pilot and its website support the savings from smart thermostats.

c. A Smart Thermostat Program Would be a Cost-Effective Investment by the Companies Consistent with the Foundational Tenets of PowerForward

Environmental Intervenors support the program that Ms. Dzubay outlines in her testimony which includes three main elements:

- FirstEnergy providing residential customers a \$100 instant rebate to apply to the purchase of an ENERGY STAR-certified smart thermostat product redeemable on the Companies' online marketplace² and at other qualifying online and brick-and-mortar retailers, and an offer of free installation.
- A program size of 210,000 out of the 700,000 customers targeted for smart meters.
- Rollout of the smart thermostat program with the smart meters.

STC Ex. 4, Dzubay Direct Test. at 16-18. She assumes 210,000 customers will participate (\$100 per unit), and 60% will self-install, with 40% taking advantage of free installation at \$75 per installation (bulk pricing discount). *Id.* She also assumes 10% program administration costs for a total of \$30 million. *Id.* at 19. Ms. Dzubay testified at hearing that, once she obtained the Companies' cost/benefit analysis after filing her direct testimony, she "did run my program recommendations, including the energy and peak demand savings assumptions that I include in my testimony, and found that it's net beneficial." Tr. II at 300:15-18.

Ms. Dzubay explains that she bases her confidence with this program on the results she has seen with ComEd's Million Smart Thermostat program:

I am confident this is an achievable number for several reasons. First, approximately 200,000 customers participated in the first three years of the

² FirstEnergy Smartmart website, available at <https://www.smart-mart.com/smartmart/en>.

ComEd program, which did not offer free installation. Second, the ComEd program began with a mail-in rebate, but switched to the instant rebate I am recommending here, which significantly increased participation. Third, the smart thermostat market is more fully developed than when ComEd launched its program in 2015, and there is more knowledge available now with respect to best practices to effectively boost participation. Finally, the ComEd program did not leverage the smart meter rollout. A coordinated smart meter and smart thermostat educational campaign will significantly increase the likelihood that customers will want a smart thermostat for their home that can automatically respond to time-varying rates enabled by their new smart meters in order to save money on their energy bills (half of which, on average, are spent on space heating and cooling).³

Id. at 18.

Such a program would ensure that Grid Mod I carries out the “foundational tenets” of PowerForward to “Enhance the Experience for All” by “Ensuring that investments and the environment fostered create societal benefit and allow for an enhanced customer electricity experience accessible to all customers.” PowerForward Roadmap at 8. PowerForward set out “Desired Outcomes from PUCO grid modernization decisions,” and includes, “The Grid as a Platform-A modern grid that serves as a secure open access platform . . . that allows for varied and constantly evolving applications to seamlessly interface with the platform.” *Id.* at 9. Moreover, smart thermostats are consistent with the “Strong Grid” component of Power Forward. The smart thermostats give the utility the ability to control customer usage as peak time by turning back hundreds of thousands of customers’ usage by a degree or two making the grid more reliable and resilient. *Id.* All customers will benefit from the reduced strain on the grid because it reduces the need to purchase additional power to meet customer demands on the hottest days of summer when prices are at their peak. IGS Ex. 1, Childers Direct Test. at 9; *see also* ELPC Ex. 17 at 23, 25. In fact, the Commission explicitly recognized the potential need for such a program, stating that it would be appropriate to consider “deploy[ing] for residential

³ FirstEnergy HVAC Program, 1, accessible at <https://energysaveohio-home.com/hvac/hvac-maintenance>.

customers only, a behind the meter application of minimal invasion and cost that is deemed essential for residential customers to realize the benefits of grid architecture investments,” as part of a “backstop . . . to promote the PowerForward principle Enhance the Experience for All.” PowerForward Roadmap at 24.

FirstEnergy and Staff support a \$516 million investment from customers for the AMI and other Grid Mod I investments, with a record that does not show an actual plan in place to achieve the projected AMI savings. The additional \$30 million investment will help participants save significantly on their bills, with FirstEnergy estimating customers will save \$131-\$145 per year even before including the benefits from time varying rates. Smart thermostats have the potential to play an integral role in grid modernization, and therefore the Commission should order FirstEnergy to include the program outlined by Ms. Dzubay.

D. The Stipulation Is Inconsistent with Ohio Regulatory Principles and Practices

As described above, the record provided by the Stipulation signatories in support of proposed Grid Mod I has serious deficiencies that preclude a finding that it will benefit ratepayers and the public. The same flaws render the Stipulation inconsistent with Ohio regulatory principles and practices. As a basic matter, the Stipulation fails to satisfy the fundamental requirement under R.C. 4905.22 that any rate be just and reasonable. Similarly, FirstEnergy’s proposal to invest in grid modernization projects with incomplete plans and unjustified savings projections is not sufficient to carry out Ohio policy under R.C. 4928.02, under which the Commission must “[e]nsure the availability to consumers of . . . reasonably priced retail electric service.” R.C. 4928.02(A). The Commission should not approve a Stipulation that would result in high rates for customers that do not yield any reasonable value.

See Dominion Grid Modernization Case, Final Order (Va. SCC Jan. 17, 2019) at 10.

IV. CONCLUSION

All told, this case involves more than a billion dollars of customer money: the \$825 million (nominal) that FirstEnergy customers will pay for Grid Mod I if the Commission approves the Stipulation; the \$390 million that those customers are already paying in support of grid modernization through Rider DMR; the \$260 million that customers may pay for Rider DMR if the Commission extends it another two years; and, of course, the \$900 million in tax refunds that, under the Stipulation, are conditioned upon signatories agreeing to Grid Mod I. Rather than filing testimony that explains and justifies the individual elements of Grid Mod plan, FirstEnergy filed cursory testimony supporting the Stipulation as a package. FirstEnergy has failed to provide the kind of detailed evidence that the Commission should require before authorizing the Companies to embark on a major grid modernization process that will impact customer bills for decades. This weak attempt by FirstEnergy to meet its burden of proof is especially problematic since the settlement comes out of a negotiation process lacking any of the hallmarks of “serious bargaining” among the full spectrum of stakeholders that would offer reassurance it represents a well-vetted compromise, as required by the stipulation review standard.

The Environmental Groups and other opposing intervenors, on the other hand, put forth evidence that shows deep flaws in the Grid Mod I proposal. The lion’s share of its purported benefits come from projected reliability improvements that FirstEnergy based on the unreasonable assumption that Distribution Automation will facilitate outage restoration in severe storm conditions it was never designed to address. Additionally, FirstEnergy assumes significant customer energy savings from AMI meters – one of the largest components of Grid Mod I – but has no plan or funding to ensure customers have tools like smart thermostats that have enabled

such savings in the past, including in the Companies' own smart meter pilot. FirstEnergy and the other Stipulation signatories have offered no countervailing evidence to support the reasonableness of these shaky assumptions.

The Commission thus cannot reach the conclusion that this Stipulation meets any of the three prongs of the applicable standard of review. Fundamentally, there is no reason to believe that this Stipulation will provide benefits to FirstEnergy customers other than the long overdue tax refunds that don't relate to grid modernization. The Commission should reject the Stipulation as proposed, and instead require FirstEnergy to provide a robust grid modernization plan that will provide real value to customers consistent with the Commission's own PowerForward Roadmap.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

In accordance with Rule 4901-1-05, Ohio Administrative Code, the Commission's e-filing system will electronically serve notice of the filing of the foregoing Initial Brief upon all parties of record.

/s/ Madeline Fleisher
Madeline Fleisher

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Summary: Brief Initial Brief of the Environmental Law & Policy Center, Natural Resources Defense Council, and Ohio Environmental Council electronically filed by Madeline Fleisher on behalf of Environmental Law & Policy Center and Natural Resources Defense Council and Ohio Environmental Council