

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

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

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INTRODUCTION

The Initial Brief of Ohio Edison Company, the Cleveland Electric Illuminating Company, and the Toledo Edison Company (collectively “FirstEnergy” or “Companies”) argues that the “Grid Mod I” proposal will benefit the public without presenting persuasive evidence that it will actually deliver those benefits. Even with a stipulation, the burden in this proceeding is indisputably on FirstEnergy to justify the \$825 million of grid modernization spending anticipated in the proposed Stipulation and Recommendation and Supplemental Stipulation and Recommendation (collectively, “Stipulation”), including by providing a reasonable explanation of how it will benefit ratepayers and the public interest. FirstEnergy has failed to adequately rebut the two main arguments raised by the parties opposing the Stipulation: (1) that the projected benefits from the proposed Distribution Automation (“DA”) spending are based on inaccurate and skewed data; and (2) that FirstEnergy has no reasonable plan in place to realize the \$317 million in benefits that it attributes to deployment of Advanced Metering Infrastructure to its customers. Without FirstEnergy submitting affirmative evidence that Grid Mod will deliver such benefits, the Public Utilities Commission of Ohio (“Commission” or “PUCO”) cannot approve the Stipulation.

ARGUMENT

The \$858 million of spending contemplated under the Stipulation for FirstEnergy’s grid modernization proposal, “Grid Mod I,” is not in dispute. *See* Environmental Groups’ Initial Br. at 5-6. The key question before the Commission is whether the Stipulation demonstrates a reasonable basis to expect FirstEnergy’s grid modernization expenditures to produce enough value to customers to offset these significant costs.

The Environmental Law & Policy Center, Natural Resources Defense Council, and Ohio Environmental Council (collectively, “Environmental Groups”) and other intervenors opposing the Stipulation offer two principal arguments as to why the Commission cannot reasonably expect Grid Mod I to produce net benefits for FirstEnergy customers. First, the projected benefits from DA – which represent almost 70% of the total, and are the reason why the Cost-Benefit Analysis is net positive – rest on unreasonable predictions of reliability improvements during major storms. FirstEnergy bases its projections on a historical record that contains significant, undisputed errors and that fails to show Distribution Automation is actually likely to significantly improve reliability in the most severe weather. Environmental Groups’ Initial Br. at 20-28. Second, the projected benefits from AMI (or “smart meter”) deployment rest on results from a FirstEnergy pilot that included both deployment of advanced thermostats to customers as an enabling technology and universal participation in time-varying rates, whereas Grid Mod I includes neither.

A. The Signatory Parties Bear the Burden of Showing the Reasonableness of the Stipulation in the Face of “Credible and Persuasive” Arguments that it Will Not Benefit Ratepayers and the Public Interest.

The Commission’s standard for reviewing stipulations places the burden of proof on the signatory parties to show that a stipulation will satisfy three criteria, including that it will “benefit ratepayers and the public interest.” *In re Ohio Power Co.*, Case Nos. 14-1693-EL-RDR *et al.*, Opinion and Order (Mar. 31, 2016) at 18. Because the signatory parties fail to provide any credible rebuttal of the Environmental Groups’ criticisms of the Stipulation, they have failed to carry this burden.

The signatory parties’ burden of proof is not merely an evidentiary technicality. It means that the parties must “prove a positive point” – including that the Stipulation will produce

benefits for ratepayers and the public – not that the Environmental Groups must “conclusively prove” the opposite. *In re Application of Duke Energy Ohio, Inc.*, 2012-Ohio-1509, ¶¶ 8-9, 131 Ohio St. 3d 487, 488-489, 967 N.E.2d 201. Where opposing parties have “raised a question” regarding the reasonableness of a given claim, the signatory parties have “the responsibility, in order to meet [their] . . . burden of proof, of providing some reasonable explanation as to” the basis for that claim. *In re Columbus S. Power Co.*, Case No. 91-418-EL-AIR, Opinion and Order (May 12, 1992) at 74; *see also In re Application of Ohio Edison Co.*, Case No. 89-1001-EL-AIR, Opinion and Order (Aug. 16, 1990) at 52. Thus, if a party with the burden of proof responds to an opponent’s argument merely by “alleg[ing] that the opposing witness’ testimony is unreasonable without introducing any other evidence of the reasonableness of its own position,” then it “assumes the risk that the Commission will find the opposing party's evidence to be credible and persuasive.” *In re Application of Ohio Edison Co.*, Case No. 89-1001-EL-AIR, Entry on Rehearing, 1990 WL 10654755 at *4 (Oct. 11, 1990).

B. The Signatory Parties Have Not Established the Reasonableness of the Projected Distribution Automation Benefits.

FirstEnergy’s Initial Brief exposes the Companies’ failure to provide substantial evidence that the benefits to customers will actually materialize. The Companies argue that “[t]he deployment of DA will improve reliability and outage management through remote fault isolation and diagnostics, automated feeder switching, outage status monitoring and notification, and optimized restoration operations.” FirstEnergy Initial Br. at 13. FirstEnergy cites to the Stipulation at page 20 to support this assertion, but page 20 of the Stipulation contains no reference to testimony, data, or evidence of any type to back this up in any way. The Stipulation merely contains the same conclusory statement that such benefits will accrue. Contrast this with the testimony by Environmental Group witness Curt Volkmann, which identifies multiple,

significant flaws in FirstEnergy's projection of \$1.235 billion in benefits from the 200 circuits of Distribution Automation included in Grid Mod I. The Companies arrived at this benefits prediction by comparing outage data for five-year periods before and after the deployment of DA on a limited basis in its service territory, from 2004-2008 and 2014-2018, to estimate potential improvements in SAIDI (System Average Interruption Duration Index measured in minutes per customer) and SAIFI (System Average Interruption Frequency Index measured in interruptions per customer). Neither FirstEnergy's witness, Mr. Fanelli, nor its Initial Brief provides any discussion of the reasonableness of the Companies' methodology in implementing this approach.

In fact, as explained in the Environmental Groups' Initial Brief, this comparison was unreasonable in two respects. First, the Companies erroneously included duplicate outage data as a basis for its calculation of reliability improvements during normal weather excluding "major events," *e.g.*, significant storms. Second, the Companies' approach to projecting reliability improvements during major events assumes that DA will provide significant restoration benefits in severe storms, despite undisputed testimony that the basic mechanism of DA technology is likely to be ineffective during such events. Environmental Groups' Initial Br. at 20-28.

1. FirstEnergy Never Explains Plain Errors in its Outage Data.

FirstEnergy's Initial Brief fails to address the plain errors in its outage data. As explained in Environmental Groups' Initial Brief, Mr. Volkmann testified that FirstEnergy had mistakenly included duplicate records for April 25, 2005 and July 31, 2006 outages in its SAIDI and SAIFI calculations. ELPC Ex. 32, Volkmann Public Direct Test. at 11-13; Environmental Groups' Initial Br. at 25. FirstEnergy never provides any reasonable explanation for these duplicate entries, and no Stipulation signatory's Initial Brief even mentions the Companies' mistakes.

These undisputed errors are not *de minimis*; they significantly inflate the projected improvement in SAIDI from DA, and when Mr. Volkmann corrected them he found that projected SAIDI improvement outside of major storms/events should be 16% rather than the 28% claimed by FirstEnergy. FirstEnergy cannot simply sweep these significant errors under the rug and stick by its initial DA benefits claim of \$432 million excluding major storms/events – almost 25% of the total estimated benefits of Grid Mod I. Because the Companies have provided no rebuttal to Mr. Volkmann’s testimony on this point, they have failed to carry their burden of proof as to a significant component of the Cost-Benefit Analysis.

2. FirstEnergy Offers No Evidence to Rebut Mr. Volkmann’s Expert Testimony on the Unreasonableness of Claiming DA Benefits of the Projected Magnitude During Major Storms.

The Companies also do not point to any actual evidence or testimony that would undermine Mr. Volkmann’s rationale for determining that the Companies’ approach to projecting the storm restoration benefits of Distribution Automation was not sound. In simple terms, they don’t identify anywhere he got it wrong.

a. FirstEnergy Never Challenges Mr. Volkmann’s Expert Assessment of the Fundamental Technical Capabilities of Distribution Automation.

Principally, Mr. Volkmann testified FirstEnergy’s expectation of significant reliability improvements from DA during major storms/events – even greater than during “normal” weather – was not grounded in a reasonable understanding of the capabilities of DA technology, which operates much less effectively to restore service where widespread outages reduce opportunities to transfer customers to operational adjacent circuits. ELPC Ex. 32, Volkmann Public Direct Test. at 9. Mr. Volkmann explained at hearing that this view of DA was:

based on my understanding of distribution systems and how they work and how distribution automation schemes work and the dependence on available circuit

capacity to switch additional customers to. And as I state in my testimony, during a major storm event where there's significant storm damage, downed lines, it's less – it's more difficult to reconfigure circuits and restore customers.

Tr. II at 235:11-19. His understanding of this technology and its potential to reduce customer outages stems from decades of experience in the field, including almost a decade as a utility distribution engineer, followed by more than 20 years in consulting and expert roles where he continued to work on various matters involving utility operations, including electric transmission and distribution. ELPC Ex. 32, Volkmann Public Direct Test. at 1, Ex. CV-1. The Commission itself recognized Mr. Volkmann's distribution system expertise within the last year, inviting him to provide "expert testimony" for the PowerForward initiative and specifically citing his work as a basis for the PowerForward Roadmap sections on integrated distribution planning. PUCO, PowerForward: A Roadmap to Ohio's Electricity Future (Aug. 29, 2018) at 39, 18-19 & nn. 1-2.

Nevertheless, the Companies contend that Mr. Volkmann "lacks the expertise in this area to be considered an expert," citing the lapse of his professional engineering license in 1993 and his supposedly limited experience with Distribution Automation and application of the ICE calculator. FirstEnergy Initial Br. at 23-24. Such assertions by FirstEnergy lack merit, particularly in the context of Mr. Volkmann's expertise in engineering and grid modernization issues compared to FirstEnergy Witness Fanelli and Staff Witness Schaefer. FirstEnergy's Initial Brief makes a number of assertions that ignore Mr. Volkmann's extensive experience. For example, FirstEnergy's assertion that Mr. Volkmann's "only experience with DA is as a consultant reviewing three other grid modernization proposals filed by Southern California Edison, Duke North Carolina, and Dominion Virginia," FirstEnergy Initial Br. at 23-24, is flatly contradicted by the record. Mr. Volkmann was Executive Director of Accenture's North American Utilities Practice, and since leaving Accenture in 2015 has evaluated grid

modernization plans in California, Iowa, Minnesota, Michigan, and North Carolina. ELPC Ex. 32, Volkmann Public Direct Test., Ex. CV-1; Tr. II at 229-232. As he noted:

I've been working in the industry for over 30 years, worked with dozens of distribution companies around the world, that have had various forms of distribution automation over the years, so I am familiar with the technologies and their impacts on reliability beyond the cases you cited.

Tr. II at 231:13-18. Given his credentials, it would be difficult to find an expert witness anywhere in the country more qualified than Mr. Volkmann.

Most importantly, the two witnesses ostensibly testifying in support of the Cost-Benefit Analysis did not offer any independent response to Mr. Volkmann's criticisms, and they lack his expertise to do so. FirstEnergy witness Fanelli has no background in engineering, and no experience with any prior grid modernization projects. *See* Co. Ex. 2, Fanelli Direct Test. at 1. Accordingly, Mr. Fanelli offered only the most generic, conclusory description of the benefits of Grid Mod I, without any technical details regarding DA. *Id.* at 9. That is true even of his Supplemental Testimony, submitted after the Environmental Groups had filed Mr. Volkmann's testimony in the docket. *See generally* Co. Ex. 4, Fanelli Supp. Test. FirstEnergy also had the opportunity to offer rebuttal testimony from Mr. Fanelli or an engineering witness in order to explain the reasonableness of its own benefits analysis but declined to do so. Instead, FirstEnergy relies on critiques based on its cross-examination of Mr. Volkmann, such as his lack of "first-hand experience" with DA or a suggestion that he failed to address differences between DA's effectiveness in restoring outages from hurricanes in other utilities' service territories versus snow and ice in the Companies' territory. FirstEnergy Initial Br. at 24-25. However, without any expert assessment of its own in the record, FirstEnergy fails to provide any explanation as to why those factors matter to the reasonableness of Mr. Volkmann's conclusions about the basic technical capabilities of DA. *Id.*

Ms. Schaefer likewise does not have any engineering background and provided no specific testimony in support of the estimated DA benefits. Her Direct Testimony does not address the Cost-Benefit Analysis at all, and as to DA, offers only the generic assertion that “[i]n conjunction with an ADMS, the DA deployment will improve reliability and outage management through: remote fault isolation and diagnostics, automated feeder switching, outage status monitoring and notification, and optimized restoration operations, as detailed in the Stipulation.” Staff Ex. 2, Schaefer Direct Test. at 6. Staff’s Initial Brief relies exclusively on this conclusory testimony and the Stipulation itself in arguing for the DA benefits from Grid Mod I. Staff Initial Br. at 10.

During cross-examination at hearing, Ms. Schaefer further confirmed that she was “not supporting the CBA [Cost-Benefit Analysis] directly,” noting only that “generally we agreed with all those [the Companies’] assumptions” going into the Cost-Benefit Analysis. FirstEnergy Initial Br. at 23 (citing Tr. I at 202:8-9 and 9-10). However, Ms. Schaefer never provided any specific basis for Staff’s acceptance of FirstEnergy’s DA benefit claims. Mere “conclusory . . . statements” or “conclusory allegations” are not enough to sustain a party’s burden of proof, and that is all Ms. Schaefer’s testimony offers on this issue. *State ex rel. Besser v. Ohio State Univ.*, 2000-Ohio-207, 89 Ohio St. 3d 396, 404, 732 N.E.2d 373, 381; *Girard v. Youngstown Belt Ry. Co.*, 2012-Ohio-5370, ¶ 40, 134 Ohio St. 3d 79, 91, 979 N.E.2d 1273, 1286. The totality of her testimony and cross-examination indicates that she merely relies on FirstEnergy’s analysis, and that while she has an impressive background in ratemaking issues, she lacks detailed technical expertise on distribution engineering. *See* Staff Ex. 2, Schaefer Direct Test. at 2-3. Without such expertise – and more importantly, an explanation based on that expertise as to why Staff deemed FirstEnergy’s projection of DA benefits reasonable – the evidence shows only that Staff

ignored material errors in FirstEnergy's Cost-Benefit Analysis, such as the duplicate outage records described above that inflated the Companies' projected SAIDI improvement outside of major storms/events. Tr. II at 273:25-274:6. There are no facts or testimony in the record to support Staff's generic endorsement of the Cost-Benefit Analysis on that issue or with respect to restoration benefits during major storms/events.

b. FirstEnergy Has Offered No Affirmative Evidence Demonstrating the Effectiveness of DA During Major Storms.

FirstEnergy challenges Mr. Volkmann's analysis of the problems with its expectation that DA will provide significant benefits during major storms. FirstEnergy Initial Br. at 24. While Mr. Volkmann provides a credible explanation as to why the Companies' claimed benefits from DA during major storms/events are unlikely, FirstEnergy fails to offer the Commission any reason to trust its analysis instead. The undisputed record shows that FirstEnergy claims reliability benefits during major storms that have no precedent in any other jurisdiction or Distribution Automation deployment. As Mr. Volkmann notes, "It is counter-intuitive to me that reliability from DA would be significantly higher during major storms/events." ELPC Ex. 32, Volkmann Public Direct Test. at 9. In minor storms, DA can transfer customers to adjacent circuits, when adjacent circuits are operational and have additional capacity. Mr. Volkmann explains, however, that "[d]uring 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 liability is significantly impaired." *Id.* FirstEnergy offered no examples of other utilities achieving significant outage restoration benefits under such conditions, and no expert analysis to counter Mr. Volkmann's explanation.

FirstEnergy attempts to turn this argument around by contending that Mr. Volkmann failed to provide studies or other analyses supporting his views of the effectiveness of DA during

major storms. FirstEnergy Initial Br. at 24-25. It is true that Mr. Volkmann explained that he had only seen one other example of a utility claiming reliability benefits from DA during major storms/events, and that FirstEnergy's projected reliability improvements during major storms/events "was significantly higher than anything I've seen." Tr. II at 236:12-13, 271:9-14. He also confirmed that he had "not seen any other studies about the impact of DA during major storms." Tr. II at 240:23-24. But, as he explained, that is because it is not normal for utilities to look at reliability during major storms/events as a consistent metric:

Typically the grid modernization business case analyses I've seen, as is most often the case in reporting overall reliability, excludes major storm events, so the fact that the Companies have included that in their analysis, and the fact that it is the significantly-highest source of benefits is very unusual to me.

Tr. II. at 266:4-10.

To the extent Mr. Volkmann did find points of comparison for the credibility of FirstEnergy's claimed DA benefits, they support his overall conclusions. Although FirstEnergy makes much of the fact that Mr. Volkmann did not reference "a 20 percent improvement" that AEP Ohio achieved in its gridSMART Phase 1 deployment excluding major storms/events, that figure is only half the 46% SAIDI and 40% SAIFI improvement that the Companies claim to expect from their DA deployment under worse system conditions during major storms/events. FirstEnergy Initial Br. at 26. Moreover, the fact that AEP Ohio did not employ an advanced distribution management system ("ADMS") in conjunction with its Distribution Automation is irrelevant, *id.*, since the Companies never offered any substantive explanation of how they could improve the performance of DA by using an ADMS "to open and close the reclosers" rather than an alternative mechanism. Tr. II at 233:14.

Additionally, the Commission's acceptance of a projection by AEP Ohio "\$1 billion in customer benefits from DA over 15 years" also provides no valid precedent for FirstEnergy's

DA benefits claim. FirstEnergy Initial Br. at 26. FirstEnergy never offered any testimony on this point to explain why that benefits projection is comparable to its own DA benefits claim, and thus fails to mention crucial factual details necessary to support any comparison, such as the number of circuits involved (AEP Ohio's proposal involved 250 circuits of DA, not the 200 planned in Grid Mod I, *In re Application of Ohio Power Company to Initiate Phase 2 of Its GridSMART Project*, Case No. 13-1939-EL-RDR, Opinion & Order (Feb. 1, 2017) at 5); the net present value of AEP Ohio's claimed benefits, to allow for a comparison on an equivalent net present value basis; or the number of customers on the relevant circuits. By contrast, Mr. Volkmann looked to the only comparable example in the record – a report analyzing the results of 26 separate grid modernization projects (which the Companies themselves used as a source of assumptions for the Cost-Benefit Analysis) – as a source for a reasonable estimate of DA benefits amounting to “significantly less” than the \$1.2 billion projected by FirstEnergy. ELPC Ex. 23, Volkmann Public Direct Test. at 18-19; *see also* ELPC Ex. 23c, Volkmann Direct Test. (Confidential) at 18-19. That calculation, which the Companies have not challenged, is consistent with Mr. Volkmann's adjusted benefits calculation for DA from FirstEnergy's own data when removing outliers. *Id.*

The sum of this record evidence is that Mr. Volkmann has shown that there is no precedent for FirstEnergy's claim of \$803 million of benefits – almost half the \$1.783 billion total benefits projected for Grid Mod I – based on reliability improvements from DA during major storms/events.

c. Normalizing Data and Rejecting Outliers Is Accepted Methodology.

FirstEnergy's response to Mr. Volkmann's testimony that its analysis unreasonably relied on a comparison of “before” outage data, including the impacts of unusually severe storms to

“after” data during milder weather boils down, to an allegation that he used an “untested methodology” to identify outliers, “essentially seeking to normalize data that is non-normal.” FirstEnergy Initial Br. at 25. However, Mr. Volkmann’s overall approach is, in fact, consistent with the usual practice in analyzing distribution system reliability of excluding outlier events to “normalize” outage data. Utilities across the country routinely report on reliability data and normalize such data in order “to appropriately measure reliability results.” *Pub. Serv. Co. of New Hampshire d/b/a Eversource Energy*, Case No. 26,034, 2017 WL 2876446, at *4 (N.H. PUC June 28, 2017). That is why, “[i]n the case of reliability statistics, it is widely accepted that outage data associated with major events (e.g., storms) should be excluded when analyzing reliability performance.” *In the Matter of the Commissions Fuel Adjustment Clause Audit & Review Program*, Case No. 1002, 2011 WL 6122537 (D.C. P.S.C. Nov. 30, 2011). Such exclusions are vital “to avoid skewing the data with infrequent and unusual events.” *In Re Pac. Gas & Elec. Co.*, Case No. 02-09-005, 2004 WL 2610361, at *5 (Cal. PUC Oct. 28, 2004). Hence, normalizing data does not distort reliability measures. Rather, it gives a much more reasonable account of likely benefits in attempting to gauge the impacts of DA on a comparable basis.

In fact, “weather bias” is a recurring issue in other utility contexts such as load forecasting, where “[w]eather normalization of electric loads is common practice in utility regulation and ensures revenue impacts are not lopsided due to abnormal weather.” *In re Application of Golden Road Motor Inn, Inc.*, Case No. 18-08007, 2019 WL 918437, at *19 (Feb. 20, 2019). The Commission has likewise recognized the importance of making “normalization adjustments” to address “abnormal test year events” such as “severe winter weather” for decades. *In re Application of the Cleveland Elec. Illuminating Co.*, Case No. 78-677-EL-AIR, Opinion

and Order, 1979 WL 446305 at *21 (May 2, 1979); *see also, e.g., In re Application of the Dayton Power and Light Company for Authority to Recover Certain Storm-Related Service Restoration Costs*, Case No. 18-77-EL-RDR, Finding and Order (Dec. 19, 2018) at 2 (“Pursuant to the Commission’s ESP III Order, prior to the resolution of the Company’s then-pending rate case (Case No. 15-1830-EL-AIR, et al.), storm cost recovery would be offset by the three-year average of major storm repair expense, less any outlier storms.”) Thus, it is FirstEnergy that takes a novel approach in failing to make any attempt to exclude outliers from its major storm/event data, on any basis.

Although the Companies suggest Mr. Volkmann “cherry-picked” the data to produce specific results, he in fact used reasonable approaches in identifying outliers. FirstEnergy Initial Br. at 25. Mr. Volkmann’s treatment of April 2005 data rested on a statistical analysis of the outages from the major storms in that month that showed the April 2005 events produced outages far exceeding any other events in the study period. ELPC Ex. 32c, Volkmann Direct Test. (Confidential), Fig. 1 at 14. When the Environmental Groups sought any similar analysis by FirstEnergy regarding weather events comparable to these April 2005 storms in discovery, the Companies admitted that they “did not complete the requested analysis.” *Id.*, Ex. CV-4 at 787.

Mr. Volkmann also acted reasonably in determining outlier years with unusually mild weather. His analysis rested on a comparison of the frequency of major events across all of the relevant years to identify those with a very small number, an approach that FirstEnergy failed to rebut with any evidence that those years did have comparable weather conditions.

Environmental Groups’ Initial Br. at 26-27 (citing ELPC Ex. 32, Volkmann Public Direct Test. at 15). Once again, the Companies offer no expert analysis of their own to support the conclusory assertion that Mr. Volkmann’s methodology was not reasonable.

3. The Stipulation Lacks Sufficient Safeguards to Ensure Customer Benefits from Reliability Improvements.

Finally, the Commission cannot reasonably rest on the assertion by FirstEnergy that “the Stipulation promises that the Companies will be held to reliability performance standards that reflect the impact of Grid Mod I.” FirstEnergy Initial Br. at 14. As explained in the Environmental Groups’ Initial Brief, the Stipulation only requires FirstEnergy to revise its applicable minimum performance standards for reliability under Ohio Adm. Code 4901:1-10-10(B)(7). Environmental Groups’ Initial Br. at 22 (citing Co. Ex. 1 at 21). Since that rule specifically excludes “performance data during major events” from consideration in setting those performance standards, the Stipulation will not hold FirstEnergy accountable if its unreasonable projections of storm restoration benefits from DA in fact fail to materialize. Ohio Adm. Code 4901:1-10-10(B)(4)(c). That is why Mr. Volkmann recommends more than just a “delay” in the review of the Stipulation. FirstEnergy Initial Br. at 22. He in fact proposes that the Commission impose penalties on FirstEnergy if it falls materially short of achieving those projected benefits. ELPC Ex. 32, Volkmann Public Direct Test. at 24-25. Environmental Groups request that if the Commission approves the Stipulation, it also adopts this recommendation for penalties.

C. The Signatory Parties Have Not Demonstrated How They Will Realize the Projected Customer Energy and Capacity Savings from Smart Meters Without a Concrete Plan for the Deployment of Enabling Technologies.

In their Initial Briefs, both FirstEnergy and Staff make significant unsupported assumptions that Grid Mod I will produce benefits for customers through the retail market. FirstEnergy Initial Brief at 15; Staff Initial Brief at 8-9. The record is clear that FirstEnergy’s Cost-Benefit Analysis projects benefits from AMI based on a study that affirmatively paired smart meters with both time-varying rates and enabling technologies, such as advanced thermostats. Environmental Groups’ Initial Br. at 29-34. Yet FirstEnergy’s Grid Mod I proposal

includes no plan to encourage participation in time-varying rates or adoption of enabling technologies.

The signatory parties suggest that market retailers will “offer innovative products and services that will incentivize customers to more efficiently manage their energy usage.”

FirstEnergy Initial Br. at 15-16; *see also* Direct Energy Initial Br. at 6-7; IGS Initial Br. at 3-6.

But neither FirstEnergy nor any other signatory party offered any prior example of such market benefits arising spontaneously after AMI deployment.

By contrast, the available record evidence shows that – as the Companies found in their pilot – it is a well-structured time-varying rate product, coupled with the active deployment of enabling technologies, that produces concrete customer savings from AMI. The testimony of Smart Thermostat Coalition (“STC”) witness Dzubay points out that in FirstEnergy’s own grid modernization pilot, customers had significant load reductions when FirstEnergy provided programmable controllable thermostats with advanced capabilities, and did not reduce usage when merely given IHDs. STC Ex. 4, Dzubay Direct Test. at 10 (citing Electric Power Research Institute’s Consumer Behavior Study on FirstEnergy’s Smart Grid Investment Grant, 2015 Technical Report, 4-4).

While the Stipulation does provide for FirstEnergy to offer a time-varying rate to default service customers, it includes no plan to help customers take advantage of such a rate.

FirstEnergy punts the issue to a future proceeding with no details regarding such a program that would ensure customer benefits, or its potential costs. The Companies oppose the

Environmental Groups’ proposal for a smart thermostat program to fill that gap, suggesting that smart thermostats “do not require grid modernization in order to provide any of their benefits to customers.” FirstEnergy Initial Br. at 32. However, they have failed to rebut the evidence

showing the converse; that, without enabling technologies like smart thermostats, smart meters will not provide the benefits held out in the Cost-Benefit Analysis.

Staff, on the other hand, at least acknowledges the need for some plan to provide enabling technologies to customers in order to realize actual customer savings from smart meters. Ms. Schaefer testified that Staff affirmatively considered FirstEnergy's ability to provide smart thermostats through its energy efficiency programs in assessing the reasonableness of the Cost-Benefit Analysis. The problem is that Staff never took the next step of investigating whether FirstEnergy's programs have actually provided smart thermostats to customers, and nothing in the record indicates that FirstEnergy's efficiency program has produced results. Moreover, FirstEnergy's own witness had only vague knowledge about the Companies' smart thermostat program as part of its efficiency plan, and could not provide any details regarding its implementation or results. Tr. I at 97:1-98:1. Without any record evidence that the Companies are providing or will provide enabling technologies necessary to realize the energy savings projected in the Cost-Benefit Analysis, the Commission cannot assume customers will achieve those savings.

Staff also unreasonably suggests that customer data access alone will produce energy savings, asserting that:

[c]ustomers will be able to access their energy usage data through a web portal and near real-time data through a home area network. With customer authorization, third parties will also be able to access customer energy usage data. Overall, these investments will offer customers new opportunities to understand and manage their energy usage, e.g., invest in less energy-intensive products, shift usage to off-peak periods, etc.

Staff Br. at 9. However, Staff cites no factual evidence to support these broad assertions, and indeed, the record contradicts this argument.

The retail suppliers – exactly the market actors that FirstEnergy and Staff presumes will produce customer savings from AMI – carefully provide no guarantees. The Stipulation plainly imposes no obligation for the marketers to provide any particular product or produce any particular level of customer savings. Co. Ex. 1 at 17-18. IGS witness Childers, the only witness testifying for any marketer, likewise testified at hearing that IGS was not making any commitments regarding any specific type of product or level of savings. Tr. I at 185:12-188:3. While the retailers argue for the effectiveness of market price signals, Direct Energy Initial Br. at 6-7, they admit that they may simply provide fixed rates to customers who already have “attractive” load profiles based on AMI data, rather than providing any time-varying rate or specific product to help customers actually lower their energy costs. Tr. I at 188:7-25. Mr. Childers in fact stated that “it would be misleading to provide specific testimony and commitment” as to customer energy savings from “marketer offerings utilizing AMI data,” since “[t]hat is highly dependent on the market at the time.” *Id.* at 187:22-188:3. There is thus no reason to believe the retail marketers will make up for the missing pieces in Grid Mod I that undercut the validity of the Cost-Benefit Analysis.

Nor do the retail suppliers provide any coherent explanation as to how they expect FirstEnergy itself to achieve the energy savings projected in the Cost-Benefit Analysis. Direct Energy specifically attacks the idea of providing incentives for enabling technologies, directly contrary to Staff’s own presumption that FirstEnergy would use that approach to support its Grid Mod I efforts. Direct Energy Initial Br. at 5-7. IGS takes yet a third inconsistent approach, with Mr. Childers testifying that IGS has relied on utility rebates to support smart thermostat deployment and that he is “generally supportive” of such rebates as a complement to IGS’s market offerings. Tr. I at 190:10-19. Given these disparate views as to how customers will

actually benefit from smart meters, it is vital for the Commission to require a reasonable plan for actually providing those benefits. Since FirstEnergy's customers will be paying hundreds of millions of dollars for AMI and expecting value in return the time to establish a plan to realize that value is now.

As outlined in Environmental Groups' Initial Brief, a smart thermostat program coupled with the smart meter rollout and time-varying rates has the potential to deliver significant customer benefits. FirstEnergy plans to spend \$516 million on Grid Mod I technologies plus hundreds of millions more on operations and maintenance, while a robust smart thermostat program of 200,000 would cost only \$30 million – leveraging the cost savings from bulk installation in conjunction with AMI deployment. STC Ex. 4, Dzubay Direct Test. at 19. Moreover, even without time-varying rates, the analysis shows customers with smart thermostats can save 15.2% on their cooling—a result that would expand the number of customers able to benefit directly from Grid Mod I without having to push customers to change from more traditional rate structures. *Id.* at 16. Given the many issues with FirstEnergy's Cost-Benefit Analysis, and the potential customer savings from smart thermostats, the Commission should order FirstEnergy to implement a smart thermostat program in conjunction with any smart meter deployment.

D. There Is No Need for the Commission to Delay the Tax Refunds Owed to Customers While Requiring FirstEnergy to Resolve the Flaws in its Grid Modernization Proposal.

Some signatory parties suggest that the Commission should ignore any problems with Grid Mod I because holding up the Stipulation would delay customer tax refunds. *See, e.g.,* Ohio Energy Group Initial Br. at 4. However, the Commission certainly has the authority to avoid that result and adhere to its intent that “all benefits resulting from the TCJA will be

returned to customers,” since “these savings were never meant to compensate the utilities or increase their respective rates of return.” *In the Matter of the Commission’s Investigation of the Financial Impact of the Tax Cuts and Jobs Act of 2017*, Case No. 18-47-AU-COI, Finding and Order (Oct. 24, 2018) at 16. Nor should the tax refunds be used as a bargaining chip for FirstEnergy to gain approval of a flawed grid modernization proposal with significant costs that are likely to outweigh its benefits. Accordingly, as requested by Kroger and the Ohio Manufacturers’ Association, the Commission should reject the proposed Stipulation and require the tax proceedings to go forward independently rather than remain consolidated with the Grid Mod I proposal. Kroger Initial Br. at 28; OMA Initial Br. at 24.

CONCLUSION

The Commission cannot approve the Stipulation based on the Cost-Benefit Analysis that FirstEnergy offers in this proceeding. As Mr. Volkmann explained in his expert testimony, FirstEnergy’s claimed benefits from Distribution Automation lack any reasonable basis. While the Companies disparage Mr. Volkmann’s expertise and methodology, they never actually refute his reasoning or offer any competing rationale for trusting a data set that contains significant errors and clear outliers. Additionally, FirstEnergy promises substantial benefits from AMI based on a study where it coupled AMI with advanced thermostats and time-varying rates, yet Grid Mod I includes AMI without a similar collateral effort to deploy enabling technologies in conjunction with time-varying rates. Given the significant cost to FirstEnergy customers and potential benefits from combining time-varying rates with enabling devices, the Commission should require any implementation of smart meters to include a program for smart thermostats.

Based on the record in this proceeding, the Commission should reject the Stipulation and ensure a robust grid modernization plan grounded in sound analysis and a solid plan to provide

benefits to customers. While this means a short delay in the process, it will also mean far greater long-term benefits for consumers.

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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 Reply Brief upon all parties of record.

/s/ Madeline Fleisher
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