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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. :

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INITIAL BRIEF  
OF  
THE SMART THERMOSTAT COALITION

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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.	:	
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	:	Case No. 17-2436-EL-UNC
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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.	:	
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	:	Case No. 18-1604-EL-UNC
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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.	:	
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	:	Case No. 18-1656-EL-ATA
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INITIAL BRIEF  
OF  
THE SMART THERMOSTAT COALITION

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I. INTRODUCTION

These cases are before the Commission for consideration of a Stipulation and Recommendation filed November 9, 2018 (“Stipulation”), as amended by a Supplemental Stipulation and Recommendation filed January 25, 2019 (“Supplemental Stipulation”), which, if approved by the Commission, would resolve all four of the above-captioned proceedings

involving FirstEnergy's Ohio electric distribution utilities, Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company (the "Companies").

The Smart Thermostat Coalition ("STC"),<sup>1</sup> whose interest is confined to Case No. 16-481-EL-UNC, intervened in these proceedings to voice its concern that the provisions of the Stipulation relating to the proposed grid modernization plan, and, more specifically, the deployment of smart meters, will not accomplish the Companies' stated objective of developing a grid modernization strategy that will "provide the greatest benefits to the Companies' customers."<sup>2</sup> Accordingly, STC, through the testimony of its witness Tamara Dzubay,<sup>3</sup> has proposed certain modifications to the Stipulation that will maximize the benefits of grid modernization to customers and will advance the Commission's PowerForward Roadmap, which the Commission has characterized as being "built upon the pairing of two pillars: (i) innovation; and the concept that this innovation should serve to (ii) enhance the customer electricity experience."<sup>4</sup>

At the outset, STC wishes to make clear that it applauds the Commission's PowerForward initiative, a comprehensive and thoroughly-documented effort to establish principles and guidelines "to allow the state to pursue grid modernization responsibly."<sup>5</sup> Moreover, STC recognizes that the installation of advanced metering infrastructure ("AMI") is a critical component of any grid modernization plan because the data provided by smart meters make it

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<sup>1</sup> STC is an *ad hoc* coalition comprised of Ecobee, Inc. ("ecobee") and Google, LLC, which are industry leaders in smart thermostat technology.

<sup>2</sup> Case No. 16-481-EL-UNC, Companies' Grid Modernization Business Plan filed February 26, 2016, at 3.

<sup>3</sup> Dzubay Direct, STC Exhibit 4, as corrected by STC Exhibit 4A.

<sup>4</sup> *PowerForward: A Roadmap to Ohio's Electricity Future*, 4. The PowerForward Roadmap is accessible at <https://www.puco.ohio.gov/industryinformation/industry-topics/powerforward/powerforward-a-roadmap-to-ohios-electricity-future/>.

<sup>5</sup> Power Forward Roadmap, 4.

possible for electric utilities to offer time-varying pricing that can serve to provide savings to customers and peak demand reduction that benefits the grid if paired with effective enabling technology that automates the customer's response to price signals. However, as other state commissions have recognized, the deployment of smart meters is a very expensive proposition, and, unless AMI is accompanied by a sound plan to maximize its potential, it will not produce sufficient benefits to customers and the grid to justify calling upon customers to shell out the funds necessary to support smart meter deployment.

For example, as recounted in Ms. Dzubay's testimony,<sup>6</sup> the Commonwealth of Virginia State Corporation Commission recently rejected a plan for electric grid transformation projects submitted by Virginia Electric and Power Company ("Dominion") on these very grounds, finding that:

. . . Dominion has failed to include in its Petition a well-developed and comprehensive plan to maximize the potential of AMI. Dominion promises to do so in the future, but it asks us to approve hundreds of millions of dollars in spending on smart meters now, money Dominion will ultimately seek to recover from its customers in one form or another. This we will not do. Rather, we find that, since the record proves that Dominion's Petition lacks a sound plan to maximize the potential of AMI, the cost of its Plan is therefore not reasonable and prudent with regard to the AMI-related elements of its Petition.<sup>7</sup>

In this same vein, Ms. Dzubay also pointed to a decision of the Kentucky Public Service Commission denying the applications of Louisville Gas & Electric Company and Kentucky Utilities Company for a certificate of public convenience and necessity for full deployment of

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<sup>6</sup> See Dzubay Direct, STC Exhibit 4, at 5.

<sup>7</sup> *Petition Of Virginia Electric And Power Company*, Case No. PUR-2018-00100 (Final Order Dated January 17, 2019, at 10), accessible at [https://www.scc.virginia.gov/newsrel/r\\_gridsec\\_19.pdf](https://www.scc.virginia.gov/newsrel/r_gridsec_19.pdf).

advanced metering systems.<sup>8</sup> In its order, the Kentucky commission distinguished the case before it from an earlier proceeding in which it found that Duke Energy Kentucky had established public need, stating that “. . . the Companies have not proposed similar ‘innovative’ programs that fully implement the functionality of advanced meters” and that “based on the evidentiary record, the Commission is not convinced that customers will benefit substantially from the usage data as proposed by the Companies.”<sup>9</sup>

The AMI component of the stipulated grid modernization plan now before this Commission suffers from the same infirmity identified by the Virginia and Kentucky commissions. The plan calls for the deployment of 700,000 smart meters within the Companies’ service territories, along with supporting communications facilities, and a meter data management system and associated facilities.<sup>10</sup> However, as Ms. Dzubay explained, the Stipulation contains no specific plan for deploying enabling technologies so that customers will have the tools to realize the benefits from the enhanced information that smart meters can provide.<sup>11</sup> Thus, the Stipulation places the responsibility for achieving the projected energy savings and demand reduction benefits associated with the AMI investment, for which customers will ultimately pay, on the customers themselves and trusts that the mere availability of time-varying pricing made possible by the installation of smart meters will “leverage enabling devices, e.g. smart thermostats.”<sup>12</sup> In other words, the Stipulation relies on manufacturers of enabling technologies

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<sup>8</sup> See Dzubay Direct, STC Exhibit 4, at 5-6.

<sup>9</sup> *Application of Louisville Gas and Electric Company and Kentucky Utilities Company* Case No. 2018-00005 (Order dated August 30, 2018, at \*6 and \*7, 2018 WL 4707374 (Ky.PSC)).

<sup>10</sup> See Stipulation, 14.

<sup>11</sup> See Dzubay Direct, STC Exhibit 4, at 4.

<sup>12</sup> Stipulation, 17.

such as smart thermostats to persuade the Companies' customers to purchase the devices necessary to achieve the energy savings and peak demand reductions necessary to demonstrate that the AMI investment is cost-justified. For reasons discussed herein, STC believes that this *Field of Dreams*' if-you-build-it-they-will-come approach is misguided and that, if the goal is to maximize the benefits of the investment in AMI to customers and the grid and to enhance the customer experience, the Stipulation must be modified to include the smart thermostat rebate program recommended by STC witness Dzubay to incentivize customers to purchase smart thermostats.<sup>13</sup> The failure to provide this type of incentive calls into question the Companies' claim that the Grid Mod I<sup>14</sup> investment in AMI will produce a net benefit to customers.

As discussed *infra*, STC also believes that there are other aspects of the Stipulation that are problematic, including the provision that permits the Companies' to apply to the Commission to withdraw their time-varying rate offering for SSO customers once certain conditions are met,<sup>15</sup> the failure to specify eligibility requirements for participation in the Grid Mod collaborative group, and the provision that limits participation in the development of Grid Mod II to signatories to the Stipulation offered in these proceedings.<sup>16</sup> However, STC begins with a proposition over which there can be no dispute.

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<sup>13</sup> See Dzubay Direct, STC Exhibit 4, at 16-19.

<sup>14</sup> As explained in the Stipulation, "Grid Mod I" refers to the initial phase of the grid modernization plan, which has a three-year term. See Stipulation, 7 and 11.

<sup>15</sup> See Stipulation, 17-18.

<sup>16</sup> See Stipulation, 24-25.



## II. ARGUMENT

### A. THE EVIDENCE SHOWS SMART THERMOSTATS ARE FAR SUPERIOR TO OTHER ENABLING TECHNOLOGIES IN TERMS OF PROVIDING ENERGY SAVINGS TO CUSTOMERS AND REDUCING PEAK DEMAND, BOTH ON A STAND-ALONE BASIS AND WHEN PAIRED WITH TIME-VARYING PRICING.

#### 1. Smart Thermostat Technology Automates Energy Savings and Peak Demand Reduction.

As STC witness Dzubay explained, enabling technologies, such as in-home displays (“IHD”), programmable communicating thermostats (PCTs”), and smart thermostats, are devices that provide customers the means to respond to smart-metered data that informs time-varying pricing.<sup>17</sup> An IHD is a device that allow a customer to monitor energy household energy usage as it occurs by displaying the usage data from a smart meter in real time.<sup>18</sup> A PCT is a device that regulates a home’s temperature by controlling heating, ventilation, and air-conditioning (“HVAC”) equipment based on specific temperature set points designated in advance by the customer, or, in some models, by allowing the utility to control the thermostat’s setting in anticipation of a demand response event.<sup>19</sup> Although smart thermostats also regulate a home’s temperature by controlling HVAC equipment, they are distinguishable from earlier generation PCTs, including those that, like all smart thermostats, are Wi-Fi enabled, by automating achieving energy savings and peak demand reduction through special features that provide capabilities that are not available on other enabling devices.<sup>20</sup> These features include occupancy sensing, which identifies when a home is vacant, learning algorithms that use machine

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<sup>17</sup> See Dzubay Direct, STC Exhibit 4, at 6.

<sup>18</sup> *Id.*

<sup>19</sup> See Dzubay Direct, STC Exhibit 4, at 6-7.

<sup>20</sup> See Dzubay Direct, STC Exhibit 4, at 7.

learning to establish customer temperature preferences, and geolocation, which determines a customer's proximity to home, all of which serve to keep customers comfortable when they are home and save them energy when they are away from home.<sup>21</sup>

As reported by Ms. Dzubay, studies show that IHDs, which require customers to take action on their own in response to the usage information displayed, are not effective in producing energy savings.<sup>22</sup> Participants in the studies either declined to use IHDs or used them for only a short period of time.<sup>23</sup> Indeed, Figure 4-2 from the 2015 Technical Report on Electric Power Research Institute's Consumer Behavior Study on FirstEnergy's Smart Grid Investment Grant, which is reproduced in Ms. Dzubay's testimony,<sup>24</sup> confirms this conclusion, as does the chart from the Oklahoma Gas & Electric ("OG&E") Consumer Behavior Study of its smart grid solution, which is also reproduced in her testimony.<sup>25</sup> The FirstEnergy SGIG study commented that customers provided with IHDs appeared to demonstrate fatigue when events were called, and showed that the minimal benefit that was shown in year 1 almost completely disappeared in years 2 and 3.<sup>26</sup> Thus, there is no question that enabling technologies that require manual responses to take advantage of usage information – and this would include utility-provided web portals – are

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<sup>21</sup> *Id.*

<sup>22</sup> See Dzubay Direct, STC Exhibit 4, at 6, citing DOE September 2016 Report, *Results from The Smart Grid Investment Grant Program*, 6, accessible at [https://www.energy.gov/sites/prod/files/2016/12/f34/AMI%20Summary%20Report\\_09-26-16.pdf](https://www.energy.gov/sites/prod/files/2016/12/f34/AMI%20Summary%20Report_09-26-16.pdf), and DTE Energy Final Evaluation Report, 120, accessible at [https://www.smartgrid.gov/files/DTE-SmartCurrents\\_FINAL\\_Report\\_08152014.pdf](https://www.smartgrid.gov/files/DTE-SmartCurrents_FINAL_Report_08152014.pdf). (The citation in STC Exhibit 4 referred to page 122 in the DTE report. The correct reference is to page 120.)

<sup>23</sup> *Id.*

<sup>24</sup> See Dzubay Direct, STC Exhibit 4, at 12.

<sup>25</sup> See Dzubay Direct, STC Exhibit 4, at 13.

<sup>26</sup> Electric Power Research Institute's Consumer Behavior Study on FirstEnergy's Smart Grid Investment Grant, 2015 Technical Report, 11 and 47. This EPRI report is accessible at [https://www.smartgrid.gov/recovery\\_act/overview/consumer\\_behavior\\_studies.html](https://www.smartgrid.gov/recovery_act/overview/consumer_behavior_studies.html).

relatively ineffective in producing savings for customers even when paired with time-varying rates.

On the other hand, these same studies show that PCTs (when control decisions are automated by utilities or other signals) are significantly more effective than IHDs in producing energy savings and demand reductions. Indeed, as Ms. Dzubay pointed out, although PCTs offer the potential for energy savings if the customer takes the steps necessary to program them and maintain the correct schedule, and do provide energy savings where the utility has ability to control the device, PCTs that customer action have been found to be ineffective in delivering energy savings, which is why the United States Environmental Protection Agency (US EPA) suspended its ENERGY STAR certification for programmable thermostats in December of 2009.<sup>27</sup>

What sets smart thermostats apart from PCTs that can be controlled by the utility is their ability to continually “learn” the customer’s schedule and temperature preferences, sense whether the home is occupied, and identify the customer’s geographic location, which results in maximizing energy savings through automation.<sup>28</sup> These capabilities obviate the need for affirmative action by the customer and/or control by the utility to achieve energy savings.<sup>29</sup> Over 30 models of smart thermostats have received ENERGY STAR certification from the US EPA, a classification that requires a manufacturer of the product to demonstrate a minimum of 10% cooling and 8% heating energy savings by supplying actual performance data from thermostats in the field.<sup>30</sup> To clarify, the US EPA’s ENERGY STAR eligibility criteria for thermostats apply to

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<sup>27</sup> See Dzubay Direct, STC Exhibit 4, at 7, and Dzubay Direct, STC Exhibit 4, Exhibit A.

<sup>28</sup> See Dzubay Direct, STC Exhibit 4, at 7.

<sup>29</sup> See Dzubay Cross, Tr. II, 289.

<sup>30</sup> See Dzubay Direct, STC Exhibit 4, at 15-16.

“Connected Thermostats.”<sup>31</sup> However, as Ms. Dzubay explained, the criteria include the requirement that the device in question must have either learning or occupancy detection capability,<sup>32</sup> which, as discussed above, are attributes that only smart thermostats possess. Thus, despite the title of the document, only smart thermostats are eligible to be considered for ENERGY STAR certification.<sup>33</sup>

The Rockies Mountain Institute (“RMI”) study cited in the PowerForward Roadmap<sup>34</sup> confirms the point that coupling time-varying rates with passive enabling technologies is much less effective than pairing time-varying rates with active technologies (*i.e.*, technologies that automate the customer response) in producing demand reductions.<sup>35</sup> The RMI study showed that active technologies reduce peak load by an additional 10 to 20 percent compared to the same rate without technology.<sup>36</sup> The RMI study also concluded that:

“Enabling Technology may be the most important determinant of whether customers actually respond to a demand charge price signal. It is possible that sufficiently educated customers will respond by reducing peak demand, but technology that automates their response will reduce the possibility of customers not changing their behavior due to confusion about the rate.”<sup>37</sup>

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<sup>31</sup> See Companies Exhibit 5.

<sup>32</sup> See Dzubay Cross, Tr. II, 289; *see also* Companies Exhibit 5, at 6 and 8.

<sup>33</sup> In this connection, STC would also point out that ENERGY STAR Key Products Criteria guide uses the term “smart thermostats” in explaining the eligibility criteria. The guide is accessible at [https://www.energystar.gov/products/heating\\_cooling/smart\\_thermostats/key\\_product\\_criteria](https://www.energystar.gov/products/heating_cooling/smart_thermostats/key_product_criteria). Thus, although STC is not sure where the Companies’ attorney was going with this line of inquiry, there is no hay to be made here.

<sup>34</sup> See PowerForward Roadmap, 30, citing Rocky Mountain Institute, *A Review of Alternative Rate Designs: Industry Experience with Time-Based and Demand Charge Rates for Mass-Market Customers* (May 2016) at 6, accessible at <https://rmi.org/insight/review-alternative-rate-designs>. As noted in the PowerForward Roadmap, the RMI study identifies enabling technology as one of the five key design choices that impact the effectiveness of TOU rates.

<sup>35</sup> See RMI Study, 43.

<sup>36</sup> See RMI Study, 6.

<sup>37</sup> RMI Study, 7.

2. The Companies Have Specifically Endorsed Smart Thermostats as a Means by which Customers Can Achieve Energy Savings.

The Companies maintain an *EnergySaveOhio* website that informs customers of measures that will save energy and, thereby, reduce customer bills. Among the measures identified is the installation of smart thermostats, and the website contains a lengthy explanation of the features and benefits of these devices, including the statement that “(b)ased on typical energy costs, a smart thermostat can provide savings of \$131 to \$145 per year.”<sup>38</sup> And this statement refers to the savings that can be achieved by a smart thermostat on a stand-alone basis; *i.e.*, without AMI and without time-varying pricing.<sup>39</sup> STC trusts that it is not lost upon the Commission that annual savings of this magnitude dwarf the estimated annual savings that the Companies’ cost/benefit analysis attributes to smart meter deployment and time-varying rates.<sup>40</sup> STC has since discovered that, at some point after the hearing in this matter, the statement regarding the annual savings that can be provided by a smart thermostat was removed from the Companies’ *EnergySaveOhio* website.<sup>41</sup> STC finds the timing of this deletion to be rather curious, but notes that the website continues to state that “ENERGY STAR® rated smart thermostats have been independently certified, based on actual field data, to deliver energy savings.” In any event, it is clear that the Companies understand the benefits of ENERGY STAR-certified smart thermostats and have acted to advise customers of those benefits.

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<sup>38</sup> See STC Exhibit 1, at 1. STC Exhibit 1 is a printer-friendly version of the information presented at <https://energysaveohio-home.com/hvac/smart-thermostats/>.

<sup>39</sup> See Fanelli Cross, Tr. I, 89-90.

<sup>40</sup> See ELPC Exhibit 23C.

<sup>41</sup> Compare STC Exhibit I with current <https://energysaveohio-home.com/hvac/smart-thermostats/>.

3. Smart Thermostats Maximize the Benefits of Time-Varying Rates for Customers and the Grid.

As explained by STC witness Dzubay, smart thermostats have many energy-savings features in addition to the learning capability, occupancy detection, and customer geolocation features discussed above. Smart thermostats can serve as a customer education tool and encourage energy efficient behavior by providing detailed reports on heating and cooling usage accompanied by energy-saving tips and can identify problems with HVAC systems and provide maintenance alerts.<sup>42</sup> Depending on the model, other features may include voice control, virtual assistants, weather information displays, and communication and control abilities for other energy-using devices.<sup>43</sup> However, for purposes of the issues at hand, the most important features are their ability to maximize the benefits of time-varying rates for customers and the grid.<sup>44</sup>

As noted above, smart thermostats help customers respond to time-of-use rate structures by serving as a customer education tool around time-of-use rates, but leading models also provide for time-of-use optimization by automatically adjusting the temperature settings to take full advantage of time-varying rates while, at the same time, maintaining the customer's comfort.<sup>45</sup> By pre-cooling the home before peak times, smart thermostats allow customers to shift the shape of their load, thereby reducing their energy bills.<sup>46</sup> As Ms. Dzubay reports, the Electric Power Research Institute's analyses of pre-cooling show that, in so doing, smart thermostats can, in

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<sup>42</sup> See Dzubay Direct, STC Exhibit 4, at 8.

<sup>43</sup> *Id.*

<sup>44</sup> *Id.*

<sup>45</sup> See Dzubay Direct, STC Exhibit 4, at 14.

<sup>46</sup> See Dzubay Direct, STC Exhibit 4, at 14-15.

effect, replicate the benefits of energy storage, but can do so at a fraction of the cost of an energy storage device.<sup>47</sup> As the Commission points out in the PowerForward Roadmap:

Using storage as opposed to traditional distribution system fixes could defer costly upgrades. Typically, distribution infrastructure upgrades are driven by peak demand events that occur on only a few, fairly predictable occasions each year. Energy storage in incremental amounts could deal with these limited duration events and defer large investments to free up capital to be deployed elsewhere.<sup>48</sup>

Smart thermostats have this same capability.

Smart thermostats also represent a demand response resource by facilitating customer participation in utility demand response programs.<sup>49</sup> Studies cited by Ms. Dzubay show that smart thermostats can provide utilities with as much as 1.7 kW per customer, which equates to more than 50% of whole-house load during the cooling season.<sup>50</sup> Thus, widespread customer participation in such programs can produce significant peak demand reductions, thereby lowering the system-wide coincident peak, an outcome that can avoid running expensive peaker plants on the hottest summer days, reduce the need for capacity procurements, and prevent or forestall investment in delivery service infrastructure.<sup>51</sup> Indeed, smart thermostats are a type of non-wire alternative (NWA) encouraged by the Commission in its PowerForward Roadmap:

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<sup>47</sup> See Dzubay Direct, STC Exhibit 4, at 15. The EPRI study can be accessed at [https://aceee.org/files/proceedings/2016/data/papers/2\\_1172.pdf](https://aceee.org/files/proceedings/2016/data/papers/2_1172.pdf).

<sup>48</sup> PowerForward Roadmap, 22.

<sup>49</sup> See Dzubay Direct, STC Exhibit 4, at 15.

<sup>50</sup> See Dzubay Direct, STC Exhibit 4, at 15, citing SGCC Figure 4 and SMUD's *Residential Summer Solutions Study 2011-2012*, accessible at <http://docs.cpuc.ca.gov/PublishedDocs/SupDoc/A1712011/1833/248053590.pdf>.

<sup>51</sup> See Dzubay Direct, STC Exhibit 4, at 15.

When considering a distribution system improvement, the EDU is encouraged to consider the use of NWAs as an option to defer or avoid more expensive distribution system investments.<sup>52</sup>

4. Although Utility-Controlled PCTs Can Have Been Shown to Reduce Peak Demand, the Next Generation Smart Thermostat Technology Will Provide Greater Benefits to Customers and the Grid.

During his cross examination of STC witness Dzubay, counsel for the Companies took pains to establish that certain of the studies upon which Ms. Dzubay relied to show the significant demand reductions that can be achieved by pairing connected thermostats with time-varying rates did not involve the today's smart thermostats, but, rather, earlier vintage PCTs.<sup>53</sup>

Although this is true, it is beside the point. As Ms. Dzubay explained, although the thermostats involved in the EPRI Consumer Behavior Study on FirstEnergy's Smart Grid Investment Grant and the OGE Consumer Behavior study were state-of-the-art technology at the time of these studies were performed, smart thermostats represent next generation technology that is considered to be state-of-the-art technology today.<sup>54</sup> Indeed, the EPRI study specifically recognized that "the advent of smart thermostats (which can be controlled remotely via a phone or other customer-controlled device) may improve event performance over what this study reports."<sup>55</sup> In short, if the goal is to maximize customer benefits, why would anyone propose to use an inferior, outdated technology?

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<sup>52</sup> PowerForward Roadmap, 24.

<sup>53</sup> See Dzubay Cross, Tr. II, 288-289.

<sup>54</sup> See Dzubay Redirect, Tr. II, 302.

<sup>55</sup> Electric Power Research Institute's Consumer Behavior Study on FirstEnergy's Smart Grid Investment Grant, 2015 Technical Report, 62.



On a related note, counsel for the Companies also appeared to make much of the fact that the PCTs used in the OG&E study cost \$75,<sup>56</sup> whereas the top-of-the-line ecobee and Google smart thermostats currently retail for \$249.<sup>57</sup> The short answer here is that one gets what one pays for, but, more to the point, because a smart thermostat can provide annual savings in \$131 to \$145 range, with the \$100 rebate recommended by Ms. Dzubay, a smart thermostat would pay for itself in just over a year. And, again, this level of savings is not dependent on time-varying pricing. Thus, when a smart thermostat is paired with time-varying pricing made possible by the deployment of smart meters, the expectation would be that the payback period would be even shorter.

**B. THE PROVISION OF THE SUPPLEMENTAL STIPULATION THAT WOULD PROHIBIT GRID MOD I FUNDING FOR SMART THERMOSTATS IN CONTRARY TO THE PUBLIC INTEREST AND SHOULD BE REJECTED BY THE COMMISSION.**

**1. The PowerForward Roadmap Permits Rebate Programs to Encourage the Installation of Smart Thermostats as a Part of a Grid Modernization Plan.**

Having established that pairing smart thermostats with time-varying rates will maximize the benefits to customers and the grid in terms of energy savings and peak demand reduction, the question then becomes whether customers should be called upon to fund a rebate program to facilitate smart thermostat deployment via Rider AMI. The Supplemental Stipulation attempts to block such a measure by adding the following sentence to Section V.C.b. of the original Stipulation:

None of the capital costs of up to \$516 million for Grid Mod I assets described in the Original Stipulation may be used to fund

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<sup>56</sup> See Dzubay Cross, Tr. II, 289.

<sup>57</sup> See Dzubay Cross, Tr. II, 284.

Distributed Energy Resources (“DER”) services located on the customer side of the meter.<sup>58</sup>

Ironically, Companies’ witness Fanelli, who sponsored the Supplemental Stipulation, cites this prohibition against funding distributed energy resources<sup>59</sup> on the customer side of the meter as a “benefit” of the stipulation,<sup>60</sup> notwithstanding that the PowerForward Roadmap specifically provides that:

The proposal may also include a rebate program for enabling technologies (e.g. smart thermostats) which can be paired with TOU rates offered through the SSO or through CRES provider offerings that utilize time-based pricing.<sup>61</sup>

Plainly, Mr. Fanelli’s interpretation that barring a rebate program to incentivize customers to install smart thermostats is a “benefit” of the Supplemental Stipulation flies in the face of the Commission’s recognition that such a program may be in the public interest. Moreover, there is nothing unusual or untoward about requiring customers, generally, to fund measures that provide savings to individual customers in pursuit of broader energy efficiency and demand reduction objectives.

For example, the evidence shows that the Companies currently offer customer-funded \$50 rebates on their *EnergySaveOhio* website to residential customers to be applied to offset the costs of tune-ups of their heating and cooling equipment.<sup>62</sup> In addition, the Companies also offer sales-

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<sup>58</sup> Supplemental Stipulation, 3.

<sup>59</sup> The PowerForward Roadmap relies on the NARUC definition of a “distributed energy resource,” a definition, which includes customer-owned demand response and energy efficiency technology in addition to distributed generation and energy storage. See PowerForward Roadmap, 10, n. 2, citing NARUC Manual on Distributed Energy Resources Rate Design and Compensation (Nov. 2016) at 45, accessible at <https://www.naruc.org/rate-design/>. Thus, smart thermostats are within the ambit of this definition.

<sup>60</sup> Fanelli Supplemental Direct, Companies Exhibit 4, at 4-5.

<sup>61</sup> PowerForward Roadmap, 31.

<sup>62</sup> See STC Exhibit 2.

based customer-funded rebates to certain big box retailers to encourage them to promote smart thermostats, even though there is no assurance that these “midstream” incentives will be passed along to purchasers in the form of a price reduction for smart thermostat products.<sup>63</sup> Further, as explained by STC witness Dzubay, electric utilities in other states have offered customer-funded rebates directly to customers to be applied to the purchase of enabling technologies.<sup>64</sup> In Illinois, a collaborative that Ms. Dzubay helped lead was specifically dedicated to accelerating customer participation in a utility smart thermostat program run by ComEd.<sup>65</sup> The \$100 rebate ComEd offered resulted in approximately 200,000 customers participating in the ComEd smart thermostat program within three years.<sup>66</sup> In 2012, OG&E, with the blessing of the Oklahoma commission, implemented a “Smart Hours” program at a three-year budgeted cost of \$56.26 million to encourage participation in the company’s variable peak pricing rate by providing customers a free, direct-installed PCT, programmed by the installer with temperature-price preferences to provide for a response to price signals from the smart grid system.<sup>67</sup>

The Supplemental Stipulation’s prohibition against funding distributed energy resources on the customer side of the meter is also inconsistent with the performance metrics set forth in Attachment C to the Stipulation. These performance metrics, which are to be used to “measure the status of deployment and related impacts from grid modernization investments,”<sup>68</sup> include a

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<sup>63</sup> See Dzubay Cross, Tr. II, 298.

<sup>64</sup> See Dzubay Direct, STC Exhibit 4, at

<sup>65</sup> See Dzubay Direct, STC Exhibit 4, at 2.

<sup>66</sup> See Dzubay Direct, STC Exhibit 4, at 18.

<sup>67</sup> See Dzubay Direct, STC Exhibit 4, at 19, citing Corporation Commission of Oklahoma Final Order dated December 20, 2012 in *In re: Oklahoma Gas and Electric Company*, Cause No. PUD 201200134, Order No. 605737, Attachment 1 to Stipulation, 14. Order accessible at <http://imaging.occeweb.com/AP/Orders/03048227.pdf>.

<sup>68</sup> Stipulation, 22.

metric for “Enabling Technologies” to be employed to determine the cost effectiveness of “(r)ebates or incentives available for enabling technologies, e.g. smart thermostats; number of devices provided to each customer class, broken out by technology.”<sup>69</sup> Although Mr. Fanelli attempted to suggest that this metric could apply to rebates or incentives offered by entities other than the Companies,<sup>70</sup> this interpretation is belied by the language in the original Stipulation itself that specifies that the “(p)erformance metrics will be included in the workpapers submitted to Staff in support of the Rider AMI quarterly updates.”<sup>71</sup> Thus, there can be no question that this metric, like all the other performance metrics set out in Attachment C, is intended to determine if the grid modernization program elements *funded by customers* via Rider AMI produce a net benefit. The provision of the Supplemental Stipulation prohibiting funding of distributed energy resources through Rider AMI during the term of Grid Mod I wipes away the enabling technologies metric even though offering rebates to encourage customers to install smart thermostats would give the Companies the biggest bang for their buck in terms of energy savings and peak demand reduction. Such an outcome is contrary to the public interest.

Finally, STC must address the perception that its advocacy of a smart thermostat rebate program is driven solely by the financial interests of its members. First, as STC witness Dzubay explained, there are over thirty ENERGY STAR-certified smart thermostat products available in the market, and these are produced by a variety of manufacturers in addition to ecobee and Google, LLC.<sup>72</sup> Second, as discussed above, the PowerForward Roadmap expressly provides that a grid modernization plan “may include rebate program for enabling technologies (e.g. smart

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<sup>69</sup> Stipulation, Attachment C, 2-3.

<sup>70</sup> See Fanelli Cross, Tr. I, 110-111.

<sup>71</sup> Stipulation, 22.

<sup>72</sup> See Dzubay Direct, STC Exhibit 4, at 16.

thermostats),” which indicates that the Commission understands that innovative products produced by the private sector have a role to play in maximizing customer benefits from time-varying pricing made possible by smart meter deployment. Third, STC would point out that intervenor Environmental Law and Policy Center (“ELPC”), an entity that receives no financial benefit from the sale of smart thermostats, also advocates that the grid modernization plan include smart thermostat deployment. So, yes, STC’s members would benefit if the Stipulation is modified to include the rebate program recommended by STC witness Dzubay. However, this does not detract from the fact that such a program would ultimately maximize benefits to the Companies’ customers and the grid, which is the Companies’ stated objective. Thus, the question put to Ms. Dzubay by counsel for intervenor of Ohio Energy Group as to why ecobee and Google, LLC do not simply offer the rebates themselves is far wide of the mark.<sup>73</sup> STC’s members are in the business of selling smart thermostats. It is not the private sector’s responsibility to ensure that the Companies’ investment in AMI is cost-justified.

2. The Terms of the Smart Thermostat Program Proposed by STC Witness Dzubay Are Reasonable and Should Be Approved by the Commission.

In order to maximize the benefits to the Companies’ customers and the grid and achieve the Commission’s PowerForward objectives, STC witness Dzubay recommended that the Stipulation be modified to provide that, during the smart meter rollout, the Companies simultaneously offer smart thermostat incentives to customers that have Central AC and Wi-Fi and do not currently own a smart thermostat.<sup>74</sup> As Ms. Dzubay explained, smart meters and smart thermostats are complementary devices, and investing in smart meters without a plan in place for

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<sup>73</sup> See Dzubay Cross, Tr. I, 294.

<sup>74</sup> See Dzubay Direct, STC Exhibit 4, at 16.

the deployment of enabling technologies will not produce the maximum benefits in terms of customer savings, peak load reduction, and energy efficiency.<sup>75</sup>

As detailed in her direct testimony, Ms. Dzubay's recommended smart thermostat program entails providing qualifying residential customers with a \$100 instant rebate to apply to the purchase of an ENERGY STAR-certified smart thermostat product.<sup>76</sup> The instant rebate would be redeemable on the Companies' online marketplace and at other qualifying online and brick-and-mortar retailers.<sup>77</sup> In addition, customers would be offered free installation.<sup>78</sup> Ms. Dzubay noted that, once time-varying rates are approved, manufacturers and program implementers can help drive smart thermostat customers' participation in those rates using a variety of tactics, including, but not limited to, rate comparison reports that identify potential savings through time-of-use optimization, offers to enroll in time-of-use rates directly through the thermostats and phone apps, and emails outlining the opportunity and associated benefits.<sup>79</sup>

Ms. Dzubay emphasized that it is important that the smart meter rollout and the deployment of smart thermostats proceed in tandem because both will require a significant customer education effort (as will the implementation of time-varying rates).<sup>80</sup> As Ms. Dzubay pointed out, combining the smart meter rollout with a smart thermostat incentive will present an ideal and cost-effective opportunity to educate customers on both smart meters (devices that

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<sup>75</sup> See Dzubay Direct, STC Exhibit 4, at 17.

<sup>76</sup> *Id.*

<sup>77</sup> *Id.*

<sup>78</sup> *Id.*

<sup>79</sup> See Dzubay Direct, STC Exhibit 4, at 17-18.

<sup>80</sup> See Dzubay Direct, STC Exhibit 4, at 17.

record granular intervals of energy usage data to inform time-varying rates) and smart thermostats (tools that enable automated response to time-varying rates to deliver customer savings).<sup>81</sup>

Moreover, this coordinated educational campaign could be boosted by manufacturer marketing campaigns in the Companies' service territories, which would create a vibrant competitive market in which all manufacturers of ENERGY STAR-certified smart thermostat products could participate to serve the needs of the Companies' customers.<sup>82</sup> The Commission recognized in its PowerForward Roadmap the importance of collaboration, effective planning, and asset optimization to maximize distribution system efficiencies.

Ultimately, collaboration will enable new technologies to benefit the grid, and potentially result in lower implementation costs for beneficial NWAs through effective planning, asset optimization and maximization of distribution system efficiencies.<sup>83</sup>

Based on her experience with the ComEd rebate program in Illinois, Ms. Dzubay recommended a program geared to 210,000 out of the 700,000 customers targeted for smart meters.<sup>84</sup> Ms. Dzubay went on to outline the factors that led her to conclude that this was an achievable program size.<sup>85</sup> Based on assumed bulk installation pricing on the order of \$75 per unit, an instant rebate of \$100 per unit, participation by 210,000 customers (assuming 60% self-install, which Ms. Dzubay regarded as is a conservative estimate) and program administration costs on the order of 10 percent, Ms. Dzubay estimated a total program cost of \$30 million over the three-year term of Grid Mod I.

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<sup>81</sup> *Id.*

<sup>82</sup> *Id.*

<sup>83</sup> Power Forward Roadmap, 19.

<sup>84</sup> See Dzubay Direct, STC Exhibit 4, at 18.

<sup>85</sup> *Id.*

STC urges the Commission to modify the Stipulation by including the smart thermostat program recommended by Ms. Dzubay. Inclusion of this program will require that the associated costs be added to the stipulated Grid Mod I budget. However, based on the annual per customer savings that smart thermostats provide, it is apparent that the customer benefits of this program will far exceed the costs. Thus, inclusion of this program will add significantly to the benefits the Companies can ascribe to the AMI investment, thereby increasing the chances that the AMI investment will prove to be cost-justified.

C. THE COMMISSION SHOULD MODIFY THE PROVISIONS OF THE STIPULATION RELATING TO THE WITHDRAWAL OF THE TIME-VARYING RATE FOR SSO CUSTOMERS, PARTICIPATION IN THE GRID MOD COLLABORATIVE GROUP, AND PARTICIPATION IN DISCUSSIONS WITH THE COMPANIES AND THE STAFF REGARDING THE DEVELOPMENT OF GRID MOD II.

1. The Provision of the Stipulation Governing the Withdrawal of the Companies' Time-Varying Rate Offering for SSO Customers is Unreasonable in Several Respects.

Section C.d.v. of the Stipulation provides that, after consultation with the Grid Mod collaborative group, the Companies, within six months of the Commission order in these proceedings, will propose a time-varying rate offering for non-shopping customers. This section then goes on to provide that the Companies, with Commission approval, will withdraw their time-of-use rate offering for SSO customers “(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.”<sup>86</sup>

The threshold question is, of course, why the Companies should be permitted to withdraw their time-varying rate offering under any circumstances, a measure that would eliminate the cost-

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<sup>86</sup> Stipulation, 17-18.



savings benefit of time-varying rates for non-shoppers, as well as for shoppers that are returned to SSO service upon the expiration of their existing supplier contracts. Although Companies' witness Fanelli addressed this question on cross examination, he never actually answered it. Instead, he began by noting that "this was agreed to by the signatory parties as part of the package of the Stipulation"<sup>87</sup> – a non-answer if ever there were one – and then went on to opine as to the intent of this provision, which, according to Mr. Fanelli, was to provide "sort of an interim measure to have a utility offering in place" to provide "time for the market to develop and offer -- make available additional offerings for our customers."<sup>88</sup> With respect to the triggers for the withdrawal of the time-varying rate offering, Mr. Fanelli stated "(a)nd then the threshold for removing it, under the Stipulation, would be a Commission determination there's sufficient offers available in the market," an outcome that he described as being consistent with "PowerForward which contemplates these types of innovative products and services arising through the competitive marketplace."<sup>89</sup> STC would offer the following observations.

First, there is nothing in the Power Forward Roadmap that remotely suggests that the Commission expects that an EDU will withdraw its time-varying rate structure once the rate is established regardless whether there are CRES suppliers that are offering time-of-use rates within the EDU's service territory. Rather, the Power Forward Roadmap provides as follows:

The Commission encourages, in parallel with advanced meter deployment, that each EDU propose or amend an existing TOU rate design for SSO customers, which may include: real time pricing, block and index pricing, TOU pricing, variable peak pricing, critical peak pricing, and/or critical peak rebates. Further, the on-peak/off-peak ratio should be sufficient to provide a response from

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<sup>87</sup> Fanelli Cross, Tr. I, 105.

<sup>88</sup> *Id.*

<sup>89</sup> Fanelli Cross, Tr. I, 105-106.

participating customers and the peak period duration and frequency should reasonably allow for participation from customers on the rate.<sup>90</sup>

That the Commission did not view the EDU's time-varying rate structure as an interim measure is confirmed by the following paragraph from the PowerForward Roadmap.

The Commission envisions that each EDU proposal would include plans for marketing and education of the TOU rate design to customers, along with options for informing customers of available TOU offerings through the PUCO's Energy Choice Ohio website. Assuming approval and implementation of the TOU rates, it is recommended that each EDU provide annual updates reporting on the success of each of the TOU offerings. Based on those updates, the PowerForward Collaborative may discuss opportunities, and make recommendations to the Commission, to improve the TOU offerings available to SSO customers.<sup>91</sup>

Thus, contrary to Mr. Fanelli's claim, the withdrawal of the Companies' time-varying rate offering is not consistent with the PowerForward Roadmap, and the signatories to the stipulation cannot stipulate away this Commission recommendation – a recommendation that contemplates that the EDUs will continue to offer time-varying rates to SSO customers, educate customers regarding how to benefit from time-varying pricing, and report on the success of each of its time-of-use offerings.

Second, although STC supports CRES providers offering time-of-use pricing to shopping customers, it is important that the Commission bear in mind that, unlike the Companies' rates, CRES suppliers' prices are not subject to Commission regulation. In so stating, STC in no way

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<sup>90</sup> PowerForward Roadmap, 31.

<sup>91</sup> *Id.* See also PowerForward Roadmap, 30, wherein the Commission states its belief “that the benefits associated with competitively bid SSO rates can be expanded through the implementation of SSO time-of-use rates that utilize advanced meter data” and makes clear that “TOU rates should be designed or modified to incent customers to reduce consumption during peak periods and to engage customers in making informed decisions about their energy usage, *regardless of whether customers are shopping for their electric supply or on the SSO rate*” (emphasis added).

intends to suggest that CRES providers' time-varying price offers would be unreasonable.

However, if the Companies are permitted to withdraw their time-of-use rates, there will be no regulated price-to-compare for customers to use as a benchmark in determining whether to accept a CRES supplier's time-varying price offer. And, although Mr. Fanelli repeats the refrain that time-varying rates should leverage the deployment of innovative enabling technologies such as smart thermostats,<sup>92</sup> this will not occur in the case of SSO customers if the Companies withdraw their time-varying rate offerings.

Third, although it is reasonable to expect that, as more CRES providers begin to offer time-varying products, competition will serve to keep prices in check, the stipulated triggers for the Companies applying to the Commission to withdraw their time-varying rate offerings represent woefully inadequate metrics for determining that robust competition exists among CRES providers offering time-varying products. The first trigger – “at least three suppliers offering products utilizing AMI data” – suffers from a serious infirmity. As the Commission recognized in the PowerForward Roadmap, time-varying rates come in many different flavors (e.g., real time pricing, block and index pricing, TOU pricing, variable peak pricing, critical peak pricing, and/or critical peak rebates). The “three supplier” trigger would be achieved if there were three CRES suppliers, each offering a different time-varying product, notwithstanding that none of the products would be in direct competition with the products offered by the other two suppliers. Moreover, the absence of a requirement that any customer actually subscribe to one of these products as a condition precedent to the withdrawal of the Companies time-varying rate offering pulls the rug the rest of the way out from under the assumption that this trigger reflects that there is a competitive market for time-varying products. The alternative trigger – “at least

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<sup>92</sup> Fanelli Cross, Tr. I, 105.

three different types of time-varying products utilizing AMI data” – would be satisfied if a single CRES provider offered three different time-varying products. By definition, a market cannot be competitive where there is only one supplier, which totally undercuts the logic of the assumption upon which this trigger is based.

Fourth, the Stipulation is silent with respect to what happens if the Companies are permitted to withdraw their time-varying rate offerings because one of the specified triggers has been satisfied, but a CRES provider subsequently discontinues a time-varying product, the existence of which the Companies’ relied on in applying to withdraw their time-varying rate offering. And speaking of loose ends, what happens to non-shopping customers that are being served pursuant to one of the Companies’ time-varying rates when the rate is withdrawn? Would these customers, many of whom may have invested in enabling technologies to maximize the benefits of time-varying pricing, be grandfathered or would they be forced to enroll with a CRES provider offering a time-varying product in order to continue to realize these benefits? Again, the Stipulation is silent on this subject.

Finally, Mr. Fanelli attempted to downplay the obvious problems with these hard triggers for withdrawing the Companies’ time-varying rate options, stating:

I am not sure the process would be quite that rigid, I guess, for lack of a better word because the Stipulation contemplates that the Companies would work with a collaborative group to get an idea of what types of offerings may be available, and to submit a report to the Staff, detailing the time-varying rates that we think reasonably might be offered to customers. And so, I think the determination as to whether the utility SSO offer of time-of-use rate would continue, would be influenced or informed by the outcome of those collaborative discussions. It wouldn't be at the Companies' sole determination.<sup>93</sup>

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<sup>93</sup> Fanelli Cross, Tr. I, 107-108.

The problem with Mr. Fanelli's vision of how the process would work in practice is that this is not what the Stipulation says. The Stipulation states, in no uncertain terms, that the Companies, upon Commission approval, "*will* withdraw their SSO time-of-use rate offering" (emphasis added) when one of the two specified conditions are satisfied.<sup>94</sup> Further, contrary to Mr. Fanelli's suggestion as to what is contemplated by the Stipulation, there is no provision in the Stipulation that calls for the collaborative group to be consulted, or for a report to the Staff, in connection with whether the Companies' time-varying rate options for SSO customers should remain in place. Rather, those obligations are associated with Section C.d.iv. of the Stipulation, which requires the Companies to submit a plan to Staff "detailing the time-varying rate options it [*sic*] reasonably believes will be offered to retail customers by CRES providers,"<sup>95</sup> a subject that has nothing to do with whether any CRES providers are actually offering any time-varying products in the Companies' respective service territories. Moreover, Mr. Fanelli's assertion that the withdrawal of the time-varying rate offering "wouldn't be at the Companies' sole determination" is also at odds with the plain language of the Stipulation that mandates that Companies file for authority to withdraw this rate offering once one of the hard triggers has been met.

As discussed above, the provision of the Stipulation that allows the Companies to withdraw their time-varying rate offering is inconsistent with the Commission's expectation as set forth in the PowerForward Roadmap and contrary to sound public policy. However, if the Commission buys the notion that, at some point, the Companies should be permitted to withdraw their time-varying SSO rates, the Commission should modify the Stipulation by replacing the

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<sup>94</sup> Stipulation, 18.

<sup>95</sup> *Id.*

triggers for withdrawal with more meaningful criteria for determining that there is a robust competitive market for time-varying rates provided by CRES suppliers that obviates the need for the Companies to offer a regulated time-varying rate. Failure to include such meaningful criteria would increase the likelihood that the filing by which the Companies seek Commission authority to withdraw their time-varying rate offering will be contested, resulting in the parties and the Commission having to devote time and resources to resolving the matter. At a minimum, language should be added requiring the Companies to consult with the Grid Mod collaborative before applying to withdraw their time-varying rate offering.

2. The Commission Should Direct the Companies to Permit STC to Participate as a Member of the Grid Mod Collaborative.

In their memorandum contra STC's motion to intervene in this proceeding, the Companies took the position that, "even without its intervention, STC will be able to offer its 'substantial experience and expertise' on smart thermostats by actively participating in the Grid Mod collaborative group" that will be convened to provide for stakeholder input and advice with respect to the future course of the Grid Mod program, including the deployment of smart thermostats.<sup>96</sup> In its reply, STC indicated that it would welcome the opportunity to participate in the Grid Mod collaborative, but noted that it was not clear how STC would receive notice of meetings of the collaborative if it were not a party to the case.<sup>97</sup> This concern was allayed when STC's motion to intervene was granted,<sup>98</sup> thereby confirming that STC, in fact, has a real and

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<sup>96</sup> See Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company's Memorandum Contra the Late-Filed Motion to Intervene of The Smart Thermostat Coalition filed January 14, 2019, at 6, citing Stipulation, 14-15, 17.

<sup>97</sup> See Reply of The Smart Thermostat Coalition to Memorandum Contra Motion to Intervene filed January 16, 2019, at 9.

<sup>98</sup> See Entry dated January 29, 2019, ¶ 12.

substantial interest in the proceeding, and, thus, presumably would be considered a stakeholder for purposes of participating in the Grid Mod collaborative group. However, subsequent developments suggest that STC's designation as a party may not be sufficient to assure that STC will be permitted to participate in the collaborative.

The Supplemental Stipulation amended the Stipulation by, among other things, adding language specifying that the Office of the Ohio Consumers' Counsel ("OCC") and the Northeast Ohio Public Energy Council ("NOPEC") were, "(w)ithout limitation on the participation of other stakeholders in the Grid Mod collaborative," to "be included as members of any collaborative group and in any group to gather stakeholder input associated with data access systems and processes."<sup>99</sup> Because OCC and NOPEC were the only signatories to the Supplemental Stipulation that had not previously signed the original Stipulation, it is apparent that this language was added at their behest. That OCC and NOPEC insisted on the inclusion of this additional language raises the specter that party status alone may not be sufficient to guarantee a right to participate in the Grid Mod collaborative. Thus, to clarify the matter, STC's counsel asked Companies' witness Fanelli directly if the Companies would commit to including STC as a participant in the collaborative.<sup>100</sup> However, notwithstanding the earlier representations of the Companies in their memorandum contra STC's motion to intervene, Mr. Fanelli declined to do so, nor would Mr. Fanelli identify the criteria that would be applied to determine eligibility for participation in the collaborative.<sup>101</sup>

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<sup>99</sup> Supplemental Stipulation, 4.

<sup>100</sup> See Fanelli Cross, Tr. I, 119-120.

<sup>101</sup> See Fanelli Cross, Tr. I, 120.

Regardless whether the Commission modifies the Stipulation by adopting STC's smart thermostat rebate proposal to encourage customers to install smart thermostats, STC should be permitted to participate in the Smart Grid collaborative. As a collaborative member, STC, which has substantial experience and expertise with respect to best practices for maximizing the benefits of AMI and time-varying rates, will bring that experience and expertise to bear in providing advice to the Companies regarding smart thermostat deployment. In addition, STC is well positioned to assist in the development of a coordinated customer education effort that will provide necessary information to customers regarding how to achieve the greatest possible savings from smart meters, time-varying rates, and smart thermostats. Finally, in the event that the review undertaken by the consultant midway through the implementation period shows that the Grid Mod I is not producing the projected benefits,<sup>102</sup> STC can provide advice to the Companies as to how to enhance the benefits so that a net benefit can be achieved. Thus, the Commission should, as a part of its order, direct the Companies to permit STC to participate in the Grid Mod collaborative and to provide STC notice of meetings of the collaborative.

3. The Provision of the Stipulation that Limits Discussions Relating to the Development of Grid Mod II to Signatories to the Stipulation Is Unreasonable and Should Be Rejected by the Commission.

Section V.H. of the Stipulation sets forth the Companies' commitment "to begin development of the next phase of grid modernization investments (Grid Mod II) using these or other technologies in order to facilitate a cost-effective, timely transition between Grid Mod I and Grid Mod II." This section goes on to provide that, "(n)o later than June 1, 2020, the Companies and Staff will initiate discussions with *any interested Signatory Parties* regarding the development of Grid Mod II, including reliability benefits arising from Grid Mod I deployment"

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<sup>102</sup> See Supplemental Stipulation, 6.



(emphasis added). However, no rationale has been provided as to why the Companies and the Staff will initiate such discussions only with “interested Signatory Parties.” Plainly, parties other than signatories to the Stipulation may have legitimate interests in the development of Grid Mod II and should be permitted to participate in such discussions.

The elimination of this limitation is particularly important to STC because, if its recommended smart thermostat program is not included in Grid Mod I, STC will certainly pursue such a program in connection with Grid Mod II. The Commission should reject this limitation and should modify Section V.H of the Stipulation by replacing “any interested Signatory Parties” with “any interested party to this proceeding.”

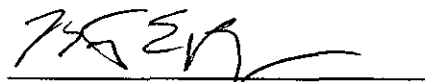
### III. CONCLUSION

The Commission’s PowerForward Roadmap has set the stage for grid modernization plans designed to maximize customer benefits from their various elements. With respect to investments in AMI, which are necessary to facilitate time-varying pricing, effective enabling technologies are essential to achieving this goal. As demonstrated above, smart thermostat technology checks all the boxes in terms of maximizing the benefit of time-varying pricing for customers and the grid. Smart thermostats automate customers achieving energy savings and peak demand reduction, which the RMI study cited in the PowerForward Roadmap determined was a critical factor. Moreover, there can be little doubt that the smart thermostat rebate program proposed by STC witness Dzubay would be successful in terms of incenting customers to purchase a tool necessary to take full advantage of the benefits of time-varying pricing.

STC respectfully submits that because the benefits to be derived from smart thermostats far exceed the associated costs, it is reasonable to include the rebate program as a part of Grid Mod I, a result that is not only permitted under the PowerForward Roadmap, but which will also

further its objectives. Moreover, for reasons explained by Ms. Dzubay, it is important that the smart meter deployment proceed simultaneously with smart thermostat deployment. The Commission should not kick this issue to Grid Mod II, because that will leave Grid Mod I with no plan for providing customers with the tools they will need to benefit from the smart meter deployment and time-varying rates and will call into question whether the Grid Mod I investment is cost-justified.

Respectfully submitted,

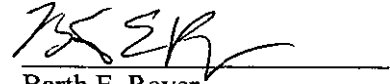
A handwritten signature in black ink, appearing to read 'B. Royer', is written over a horizontal line.

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### Certificate of Service

I hereby certify that copies of the foregoing have been served by electronic mail on the following persons this 1st day of March 2019.



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