COMMONWEALTH OF PENNSYLVANIA

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May 14, 2014

Rosemary Chiavetta, Secretary
PA Public Utility Commission
Commonwealth Keystone Bldg.
400 North Street
Harrisburg, PA 17120

RE: Joint Petition of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company for Approval of their Smart Meter Deployment Plan
Docket Nos. M-2013-2341990, M-2013-2341991, M-2013-2341993, M-2013-2341994

Dear Secretary Chiavetta:

Enclosed please find the Office of Consumer Advocate's Main Brief in the above-referenced proceeding.

Copies have been served upon all parties of record as shown on the attached Certificate of Service.

Sincerely yours,

Candis A Tunilo

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Assistant Consumer Advocate
PA Attorney I.D. # 89891

Enclosures
cc: Honorable Elizabeth H. Barnes
Certificate of Service
*169701

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Joint Petition of Metropolitan Edison Company Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company For Approval of their Smart Meter Deployment Plan	:	Docket Nos. M-2013-2341990 M-2013-2341991 M-2013-2341993 M-2013-2341994

MAIN BRIEF
OF THE OFFICE OF CONSUMER ADVOCATE

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Dated: May 14, 2014

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I. INTRODUCTION

The Office of Consumer Advocate (OCA) submits this Brief pursuant to the Second Scheduling Order dated April 25, 2014 of Administrative Law Judge Elizabeth H. Barnes (ALJ).

II. PROCEDURAL HISTORY

On December 31, 2012, Metropolitan Edison Company (Met-Ed), Pennsylvania Electric Company (Penelec), and Pennsylvania Power Company (Penn Power) and West Penn Power Company (West Penn) (collectively, FirstEnergy Companies or Companies) filed their Joint Petition for Approval of Smart Meter Deployment Plan (Original Deployment Plan). The OCA fully participated in this initial proceeding by submitting the testimony of three expert witnesses, a Main Brief and a Reply Brief pursuant to the litigation schedule adopted therein. ALJ Barnes issued her Recommended Decision on November 8, 2013. The OCA and the Companies submitted Exceptions to the Recommended Decision. In their Exceptions, the Companies, for the first time, raised a proposal to accelerate deployment of smart meters in Penn Power's service territory. In Reply Exceptions, the OCA argued that it was improper to present an amendment to the Original Deployment Plan in Exceptions.

On March 6, 2014, the Pennsylvania Public Utility Commission (Commission) issued its Opinion and Order regarding the Companies' Original Deployment Plan (March 6 Order).[1] The Commission agreed with the OCA's Reply Exception regarding the proposed amendment contained in the Companies' Exceptions. The Commission held:

> If the Companies decide to pursue an accelerated deployment, they must file an amended Plan within thirty days of the entry of this Opinion and Order, stating their case more fully and in more detail. 52 Pa. Code § 5.93(a). Thereafter, the Commission will schedule an expedited procedural schedule so that the amended

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[1] Joint Petition of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company For Approval of their Smart Meter Deployment Plan, Docket Nos. M-2013-2341990 *et al.*, Order (March 6, 2014) (March 6 Order).

> Plan could be decided within ninety days of the entry of the instant Opinion and Order.

March 6 Order at 43. On March 19, 2014, the FirstEnergy Companies submitted a compliance filing, which included a Revised Deployment Plan (Revised Plan) and accompanying testimony, in response to the Commission's March 6 Order.

On March 31, 2014, the OCA filed Exceptions to the Companies' compliance filing, asserting, *inter alia*, that a compliance filing is not the proper procedure to amend the Plan.[2] The Companies filed a Response to Exceptions on April 7, 2014. By Secretarial Letter dated April 16, 2014, the Commission noted that the March 6 Order "did not contemplate that the amended plan would be incorporated into the compliance filing." The matter, however, was referred to the Office of Administrative Law Judge and assigned to ALJ Barnes for the development of a record and certification thereof by May 15, 2014.

A prehearing conference was convened on April 25, 2014, and a litigation schedule was adopted. The Office of Small Business Advocate (OSBA)[3] and the Industrials[4] also participated in this matter. The OCA served the Supplemental Testimony of J. Richard Hornby,[5] which

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2 The OCA also excepted to the Companies' omission to include certain additional categories of savings in their compliance filing pursuant to the March 6 Order. By Secretarial Letter dated April 16, 2014, this portion of the OCA's Exceptions was referred to the Commission's Bureau of Technical Utility Services to review and prepare a public meeting recommendation.

3 OSBA filed a Notice of Intervention on February 14, 2013, in the underlying docket.

4 The Industrials include Met-Ed Industrial Users Group, the Penelec Industrial Customer Alliance, the Penn Power Users Group and the West Penn Power Industrial Intervenors. The Industrials filed a Joint Petition to Intervene on February 7, 2013, in the underlying docket, which was granted on March 4, 2013.

5 Mr. Hornby is a Senior Consultant at Synapse Energy Economics, Inc., specializing in planning, market structure, ratemaking, and gas supply/fuel procurement in the electric and gas industries for more than 20 years. Mr. Hornby has extensive experience in smart meter deployment plans. He has presented expert testimony on various utility-related topics and provided litigation support in approximately 100 proceedings in over 30 jurisdictions on behalf of state energy offices, consumer advocate offices, marketers and staff of public utility commissions. Mr. Hornby is a former Assistant Deputy Minister of Energy for the Province of Nova Scotia. He has a Master of Science in Energy Technology and Policy from the Massachusetts Institute of Technology (MIT) and a Bachelor of Industrial Engineering from the Technical University of Nova Scotia, now merged with Dalhousie University. Mr.

included both proprietary and public versions, on April 29, 2014. On May 6, 2016, the OCA submitted Revised Supplemental Testimony of Mr. Hornby, which removed all proprietary designations per agreement with the Companies. A hearing was convened on May 7, 2014. Briefs are due from the parties on May 14, 2014, and the record will be certified to the Commission on May 15, 2014.

III. DESCRIPTION OF REVISED DEPLOYMENT PLAN

As approved by the Commission in its March 6 Order, the Companies' Original Deployment Plan provided for a three-year Solution Validation Stage (2014-2016) during which 60,000 meters would be deployed in the Penn Power Service territory. ME/PN/PP/WP St. 4-S at 3. In 2017, the Companies would commence full-scale deployment. Id. In its Revised Plan, the FirstEnergy Companies seek to change this deployment schedule and the related budgets. Id. Specifically, the Companies propose an accelerated complete build-out of necessary infrastructure in all four service territories and an accelerated deployment of smart meters to all of Penn Power's service territory by December 31, 2015. Id. Thereafter, accelerated deployment would proceed in the service territories of Met-Ed, Penelec and West Penn through 2019. Complete deployment would be achieved by mid-2019, approximately six months ahead of the Original Deployment Plan schedule. ME/PN/PP/WP St. 4-S at 4.

The estimated nominal cost under the Original Deployment Plan and the Revised Plan is the same at $1.258 billion. ME/PN/PP/WP St. 4-S at App. B, Fig. 1.2. On a Net Present Value (NPV) basis, however, the net cost of the Revised Plan is $48.1 million more than the Companies' approved Original Deployment Plan when using each Company's weighted average cost of capital as the discount rate in the NPV analysis. ME/PN/PP/WP St. 4-S at 6. The

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Hornby's curriculum vitae is attached to his Direct Testimony as Exhibit JRH-1, which was admitted into the record on May 8, 2013, in the underlying proceeding.

Companies' NPV analysis reflected the following Weighted Average Cost of Capital (WACC) for each of the Companies:

Met-Ed	Penelec	Penn Power	West Penn
8.68%	8.17%	9.14%	11.29%

ME/PN/PP/WP St. 4-S at Exh. GLF-1S.

The Companies also provided a NPV of the Revised Plan based on a lower discount rate of 0.37%, which the Companies called an analysis from the customers' perspective. The Companies argued that the NPV cost is $8 million less for the Revised Plan as compared to the Original Deployment Plan when this lower discount rate is used. ME/PN/PP/WP St. 4-S at 6. The Companies derived this NPV cost figure using a 0.37% discount rate, which was the average interest rate on a one-year Certificate of Deposit for residential and small business customers. ME/PN/PP/WP St. 4-S at 8-9. In Supplemental Rebuttal Testimony, the Companies presented another NPV analysis from what the Companies term the customers' perspective using a 2.67% discount rate. The Companies witness Fitzpatrick acknowledged that the Revised Plan's NPV net cost could be $13 million more than the Original Deployment Plan using a 2.67% discount rate, which is the ten-year U.S. Treasury note interest rate. ME/PN/PP/WP St. 4-SR at 5, 7. The Companies selected the 2.67% discount rate based on the Smart Grid Consumer Collaborative Report (SGCC Report). Id. at 6-7.

The vast majority of the incremental additional spending in the Revised Plan will occur from 2014-2016. ME/PN/PP/WP St. 4-SR at 7. A comparison of SMT-C rates for residential customers under the Original Deployment Plan and the Revised Plan for the period 2014 through 2019 was presented by OCA witness Hornby in his Table 4 as follows:

Table 4 SMT C Monthly Rates for Residential Customers – Original and Revised Deployment Plans

SMT-C Monthly Rates for Residential Customers- Original and Revised Deployment Plans							
		2014	2015	2016	2017	2018	2019
Met Ed	Original Deployment Plan ($) (1)	$1.29	$1.04	$1.87	$3.18	$4.18	$4.58
	Revised Deployment Plan ($) (2)	$2.26	$1.91	$3.50	$4.22	$4.59	$4.38
	Change vs Filed	$0.97	$0.87	$1.63	$1.04	$0.41	-$0.20
		75%	**83%**	**87%**	**33%**	10%	-4%
Penn Elec	Original Deployment Plan ($) (1)	$1.28	$1.03	$1.86	$3.14	$4.20	$4.62
	Revised Deployment Plan ($) (3)	$2.23	$1.88	$3.48	$4.18	$4.50	$4.26
	Change vs Filed	$0.95	$0.85	$1.62	$1.04	$0.30	-$0.36
		75%	**83%**	**87%**	**33%**	7%	-8%
Penn Power	Original Deployment Plan ($) (1)	$1.31	$1.08	$1.91	$2.86	$3.76	$4.31
	Revised Deployment Plan ($) (4)	$2.88	$3.87	$5.30	$4.64	$4.41	$4.15
	Change vs Filed	$1.57	$2.79	$3.39	$1.78	$0.65	-$0.16
		120%	**259%**	**177%**	**62%**	17%	-4%
West Penn	Original Deployment Plan ($) (1)	$0.00276	$0.00246	$0.00296	$0.00347	$0.00451	$0.00491
	Revised Deployment Plan ($/kWh) (5)	$0.00393	$0.00345	$0.00508	$0.00489	$0.00500	$0.00472
	Change vs Filed	$0.00117	$0.00099	$0.00212	$0.00142	$0.00049	-$0.00019
		42%	**40%**	**72%**	**41%**	**11%**	**-4%**

See OCA St. 1-S at 16.

Although the SMT-C rates for customers of all four Companies would increase beginning in July 2014 under FirstEnergy's Revised Plan, the accelerated deployment of smart meters during 2014 through 2015 would only occur in the Penn Power service territory. ME/PN/PP/WP St. 4-S at 3; ME/PN/PP/WP St. 6-S at 3. According to the Companies, an additional 150,000 smart meters would be deployed in the Penn Power service territory by December 31, 2015 under their Revised Plan, as opposed to the 20,000 smart meters that would have been deployed by that time under the Original Deployment Plan. ME/PN/PP/WP St. 4-S at 3. The Companies would deploy additional smart meters in the other three service territories between 2016 and 2018. See ME/PN/PP/WP St. 4-S at Exh. GLF-1S. Under the Revised Plan, approximately 98.5% of all meters could be installed by mid-2019, rather than the end of 2019 as outlined in the Original Deployment Plan. ME/PN/PP/WP St. 4-S at 4. OCA witness Hornby summarized the accelerated deployment of smart meters as follows:

> According to Mr. Fitzpatrick, by the end of 2019 the Companies will deploy the same total number of meters under the Revised Deployment Plan as under the

Original Deployment Plan. However, under the Revised Deployment Plan they will deploy significantly more meters between 2015 and 2017. In 2015, the cumulative difference in smart meter deployment between the Revised and Original Deployment Plans is 150,000. By 2017 that cumulative difference peaks at 570,000 meters. The cumulative number of smart meters projected to be deployed by year under the Original Deployment Plan and under the Revised Deployment Plan is shown in Exhibit JRH-1 S and replicated in Table 1 below.

Table 1 Meter Deployment Schedule under Original and Revised Deployment Plans

	2014	2015	2016	2017	2018	2019
Original Deployment Plan	5,000	20,000	60,000	600,000	1,400,000	2,000,000
Revised Deployment Plan	50,000	170,000	670,000	1,170,000	1,670,000	2,000,000
Difference Revised vs. Original	45,000	150,000	610,000	570,000	270,000	-

Notes
Data from Exhibit GLF-1S

Ultimately, however, the Revised Deployment Plan only enables the Companies to advance the installation of 98.5% of smart meters by six months, i.e., to the middle of 2019 as compared to the end of 2019 under the Original Deployment Plan.

OCA St. 1-S at 4. (Footnote omitted).

Also encompassed in the Companies' analysis and in Mr. Hornby's analysis is that the acceleration of the smart meters will also result in the acceleration of some of the expected savings of the smart meter deployment. OCA witness Hornby summarized the expected savings from the Revised Plan as follows:

The Companies are not projecting a material increase in savings under the Revised Deployment Plan relative to the Original Deployment Plan. The Companies estimate that, by the end of 2019, savings will be $16.2 million more under the Revised Deployment Plan than under the Original Deployment Plan.[6] Although almost double the cumulative savings under the Original Deployment Plan, that increase in savings is far less than, and thus does not fully offset, the much larger $62.7 million increase in cumulative costs under the Revised Deployment Plan . . ..

OCA St. 1-S at 6.

[6] Fitzpatrick.2014. Exhibit GLF-1S.

As discussed in more detail below, the OCA submits that the Companies failed to show that their Revised Plan provides any material benefits to ratepayers that exceed the increased costs and rates under the Revised Plan.

IV. SUMMARY OF ARGUMENT

The OCA submits that the FirstEnergy Companies' proposal to accelerate smart meter deployment in the Penn Power service territory will increase the cost of smart meter deployment and the associated rates to ratepayers for a modest advancement in the deployment of smart meters. The Companies failed to show that the Revised Plan is reasonable or that it will provide benefits that justify its increased costs and rates.

The FirstEnergy Companies' argument that the Revised Plan will, on a NPV basis, be less costly to ratepayers is based on a fundamentally flawed analysis that uses a discount rate not supported by economic theory or experience in other jurisdictions. When an economically justified discount rate is used to analyze the Revised Plan, the record evidence shows that the NPV costs and rates to ratepayers over the life of the Revised Plan are significantly higher than under the Original Deployment Plan. In addition, all analyses in the record show that the costs and rates to ratepayers between 2014 and 2019 will increase significantly. Residential rates charged through the SMT-C surcharge will increase by amounts ranging from $0.95 per month to $3.39 per month or by 40% to 259% depending on the Company. At the same time, the earnings to shareholders under the Revised Plan as capital expenditures, which earn a return, increase by $47 million through 2019.

The OCA submits that the Revised Plan has not been shown to be reasonable nor has it been shown to provide benefits to ratepayers that justify the increased costs and rates. The Companies should continue to deploy smart meters in accordance with their Original

Deployment Plan, with full deployment by the end of 2019, unless they can show benefits in excess of the costs for the Revised Plan.

V. ARUGUMENT

A. The Impact of the Revised Deployment Plan on Plan Costs and Customer Rates and Benefits.

1. Introduction and Burden of Proof.

In its Implementation Order,[7] the Commission directed that Electric Distribution Companies (EDCs), in seeking approval of their smart meter deployment plans, "shall detail their system-wide deployment plans to the Commission, including any type of tiered rollout the company proposes, as well as the associated costs and benefits incurred from such a rollout." Implementation Order at 14. Further, the Commission stated:

> An EDC is encouraged to expedite the deployment process if it will provide increased customer benefits in a cost-effective manner. Again, the primary goal of the EDC deployment plan should be to implement a deployment and installation schedule that best balances the overall efficiency and timeliness of the smart meter installations with the costs incurred.

Id. Act 129 permits EDCs recovery of only the reasonable and prudent costs of providing smart meter technology to customers less any operating and capital cost savings realized from the installation and use of smart meter technology. 66 Pa. C.S. § 2807(f)(7). See also Implementation Order at 28, 29, 35. The Commission explained:

> The EDC must also provide sufficient support to demonstrate that all such costs are reasonable and prudent with respect to its smart meter plan. Consistent with Section 315(a), the burden of proof shall be on the EDC. 66 Pa.C.S. § 315(a).

Implementation Order at 29.

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7 See Re: Smart Meter Procurement and Installation, Docket No. M-2009-2092655, Implementation Order (June 24, 2009) (Implementation Order).

The FirstEnergy Companies bear the burden of proof to establish that the costs of its Revised Plan and proposed SMT-C rates are reasonable and prudent. As set forth in Section 315(a) of the Public Utility Code:

> Reasonableness of rates – In any proceeding upon the motion of the Commission, involving any proposed or existing rate of any public utility, or in any proceedings upon the complaint involving any proposed increase in rates, the burden of proof to show that the rate involved is just and reasonable shall be upon the public utility.

66 Pa. C.S. § 315(a).

"The term 'burden of proof' is comprised of two distinct burdens, the burden of production and the burden of persuasion." Hurley v. Hurley, 754 A.2d 1283, 1285 (Pa. Super. Ct. 2000). The burden of production dictates which party has the duty to introduce enough evidence to support a cause of action. Id. at 1286. The burden of persuasion determines which party has the duty to convince the finder-of-fact that a fact has been established. Id. "The burden of persuasion never leaves the party on whom it is originally cast." Id. See also Pa. PUC v. Equitable Gas Co., 57 Pa. PUC 423, 471 (1983).

"It is well-established that the evidence adduced by a utility to meet this burden must be substantial." Lower Frederick Twp. v. Pa. PUC, 409 A.2d 505, 507 (1980). The Supreme Court of Pennsylvania has stated that even where a party establishes a prima facie case by producing enough evidence to support a cause of action, the party does not satisfy its burden of persuasion unless the elements of that cause of action are proven with substantial evidence. Burleson v. Pa. PUC, 461 A.2d 1234, 1236 (Pa. 1983). Thus, a utility has an affirmative burden to produce enough evidence to establish the justness and reasonableness of every component of its rate request, and in order to persuade the finder-of-fact, there must be substantial evidence that each component of its rate request is in fact just and reasonable. See e.g., Sharon Steel Corp. v. Pa. PUC, 468 A.2d 860, 862 (1978); Johnstown v. Pa. PUC, 133 A.2d 246, 250 (Pa. Super. 1957).

In conclusion, the OCA submits that FirstEnergy must affirmatively demonstrate the reasonableness of every element of their claims and demonstrate that their proposed rates are just, reasonable, and in the public interest. As discussed in more detail below, the OCA submits that the Companies have not met their burden that the costs of their Revised Plan are reasonable and prudent.

2. The Companies' NPV Analyses Are Flawed and Fail To Show That The Revised Plan Is Reasonable.

a. Introduction.

The Companies present a Revised Plan that will accelerate the complete deployment of smart meters in their service territories by about six months. The Companies support their proposal by arguing that over the life of the meters (i.e. by 2032), the cost of the Revised Plan would be the same in nominal dollars as the Original Deployment Plan and lower in cost on a Net Present Value (NPV) basis than the Original Deployment Plan. The Companies base their assertion as to the NPV net cost of the Revised Plan on the use a discount rate of 0.37%.[8] The OCA submits that the Companies' analysis of the NPV cost of the Revised Plan is flawed in that it uses a discount rate that is not supported by economic theory and that has not been used in any other state to analyze the costs and benefits of smart meter deployment. When the Revised Plan is analyzed using an appropriate discount rate, it is clear that the Revised Plan will increase costs to ratepayers over the life of the meters.

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[8] The NPV analyses conducted by the Companies and the OCA include total estimated costs and total estimated savings from smart meter deployment. The NPV analyses do not include non-operational cost savings benefits, which are benefits for customers that do not reduce the Companies' operating costs. See e.g. ME/PN/PP/WP St. 4-S at 7-8; OCA St. 1-S at 10.

b. The Companies' Discount Rate Used To Support the Revised Plan Is Not Reasonable For Analyzing a Smart Meter Deployment Plan.

FirstEnergy Companies' witness Fitzpatrick stated that the total capital and operating costs of the Revised Plan through 2032 in nominal dollars will be the same as the Original Deployment Plan in nominal terms. Mr. Fitzpatrick presented a total nominal cost of $1.258 Billion for both the Original Deployment Plan and the Revised Plan. ME/PN/PP/WP St. 4-S at 6, Exh. GLF-1S. While the total amounts of expenditures in nominal terms by 2032 may be the same, the comparison of nominal dollars does not measure the impact of the significant acceleration of capital investments under the Revised Plan relative to the Original Deployment Plan. To measure the impact on both ratepayers and shareholders, a NPV analysis must be conducted. The NPV analysis accounts for the time value of money. As OCA witness Hornby explained:

> [t]he value today of the amount of revenue the Companies will seek to collect through rates in order to recover the capital and operating costs of the Plan less the savings from the Plan. Analysts calculate the NPV of projects such as the Revised Deployment Plan, which entail expenditures of costs in many future years and projections of resulting savings in those future years, in order to account for the time value of money. The time value of money refers to the generally accepted view that a dollar to be received sometime in the future, e.g., five years from now, is not worth the same as a dollar received today. Even at today's low interest rates, most people would prefer to have a dollar in their pocket today than to be promised a dollar five years from now.

OCA St. 1-S at 10-11. OCA witness Hornby and FirstEnergy Companies witness Fitzpatrick agree that analysts will account for the time value of money in their evaluations of projects such as the Revised Plan. OCA St. 1-S at 11; Tr. 165-166. Analysts will calculate the NPV of the project's annual costs and savings in each year of the study period based on the specified discount rate. Tr. 166.

While FirstEnergy Companies witness Fitzpatrick and OCA witness Hornby agreed that a NPV analysis must be applied to understand the differences in the net costs between the Revised Plan and the Original Deployment Plan, the two witnesses did not agree on the discount rate to be applied. OCA witness Hornby explained the importance of the discount rate chosen as follows:

> Analysts calculate the present value of future costs and future savings by applying a discount rate to their nominal values in future years in order to calculate their lower value today. The discount rate analysts choose to calculate present value can have a major influence on the result. The lower the discount rate, the more future values are considered to be worth today, and vice versa. The choice of a discount rate is important in a proceeding like this because the Companies will be recovering the costs of the Revised Deployment Plan from customers years before those customers begin receiving any material savings from the smart meter installation. The Companies have calculated the NPV of the Revised Deployment Plan using their weighted average cost of capital (WACC) as a discount rate, because that reflects their time value of money.

OCA St. 1-S at 11-12. When the NPV analysis is conducted using the Companies' WACC, Companies witness Fitzpatrick found that the Revised Plan would increase costs by $48.1 million over the Original Deployment Plan. <u>See</u> ME/PN/PP/WP St. 4-S at 6.

While the costs to customers will increase on a NPV basis under the Companies' analysis, it is also important to note that shareholders will have higher NPV aggregate earnings under the Revised Plan, particularly through 2019. OCA witness Hornby testified that:

> Shareholders will have higher NPV aggregate earnings under the Revised Deployment Plan than under the Original Deployment Plan, particularly through 2019, due to the $47 million, or 9% increase, in capital investment through 2019. Aggregate earnings are [a] component of revenue requirements.

OCA St. 1-S at 16.[9] Mr. Hornby's Table 5 demonstrates the difference:

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9 The OCA will discuss the revenue requirement impact in Section V.A.4 below.

Table 5 Summary of Capital Costs of Revised and Original Deployment Plans Through 2019

	Cumulative (nominal $)	NPV
Original Deployment Plan	$496,384,733	$336,581,451
Revised Deployment Plan	$543,505,864	$395,914,015
Difference	$47,121,131	$59,332,564
Percent Differences	**9%**	**18%**
Notes		
Original Deployment Plan data from FE Biz Case Analysis.xls		
Revised Deployment Plan data from OCA Informal #2 Attachment		
Discount rates from Exhibit GLF-1S		

OCA St. 1-S at 17.

Despite his own analysis showing an increase in the NPV cost of the Revised Plan, Companies' witness Fitzpatrick argued that ratepayers will be better off under the Revised Plan. Mr. Fitzpatrick bases this assertion on an analysis using a different discount rate than the Companies' individual WACCs that Mr. Fitzpatrick argued reflected the consumer perspective. OCA witness Hornby explained:

> Mr. Fitzpatrick bases this assertion on his assumption that the Companies' customers are essentially indifferent between receiving a dollar today or that same dollar several years in the future, such as 2019. Mr. Fitzpatrick's assumption is reflected in his use of a 0.37% discount rate to calculate the net present value of the stream of annual costs and savings associated with the Revised Deployment plan between 2013 and 2032.

OCA St. 1-S at 17. Using the 0.37% discount rate, Mr. Fitzpatrick found that the NPV costs to the customers would decrease by approximately $7.6 million. <u>See</u> ME/PN/PP/WP St. 4-S at Exh. GLF-1S.

The Companies' use of a 0.37% discount rate is improper for two reasons. First, the 0.37% discount rate has no foundation. Mr. Fitzpatrick stated that the 0.37% discount rate was based on the rate of a one-year Certificate of Deposit. When asked in discovery to provide his analysis of the uses to which its ratepayers would put their money in the period 2014 through 2032, FirstEnergy Companies witness Fitzpatrick responded that:

> No such analyses or surveys were performed. However, the Companies believe that it is reasonable to assume that many customers would simply invest the money not spent, together with other funds, in a short-term interest bearing security, such as a one-year Certificate of Deposit.

Tr. 169, OCA Cross Exam Exh. 1. OCA witness Hornby, however, testified:

> Mr. Fitzpatrick's assumption of a 0.37% discount rate is based on the average rate on a one year Certificate Deposit. Mr. Fitzpatrick maintains that rate is representative of the opportunity cost of the money customers would use to pay their smart meter rider charges. However, in response to data requests Mr. Fitzpatrick admitted that his choice of this assumption was not based on a review of economic literature or consumer research reports. He also admitted that the Commission has not established a benchmark discount rate to represent the opportunity cost of ratepayers. It is interesting to note that customers of Metropolitan Edison with overdue bills have opportunity costs of a discount rate of 19% (1.19= 1.015^12). That is the effective annual rate of monthly interest rate Met Ed applies to overdue bills as a Late Payment Charge.

OCA St. 1-S at 18. (Footnotes omitted).

Second, Mr. Fitzpatrick ignores the impact of the Revised Plan on ratepayers through 2019, when most of the accelerated spending and cost recovery will occur. Even if the 0.37% discount rate is used, through 2019 the NPV cost to ratepayers is 6.6% higher under the Revised Plan than under the Original Deployment Plan. OCA St. 1-S at 20, Exh. JRH-8-S. The ratepayer would have to pay the surcharge over the entire remaining eighteen-year recovery period through 2032 for the costs to the ratepayer to be 0.9% less than the Original Deployment Plan under Mr. Fitzpatrick's analysis. Id.

Recognizing the issues with the use of the 0.37% discount rate, FirstEnergy Companies witness Fitzpatrick proposed using 2.67% as a discount rate in his Supplemental Rebuttal Testimony. ME/PN/PP/WP 4-SR at 5. Mr. Fitzpatrick based this discount rate on his review of a paper by the Smart Grid Consumer Collaborative (SGCC) called the Smart Grid Economic and

Environmental Benefits: A Review and Synthesis of Research on Smart Grid Benefits and Costs (October 8, 2013). The paper used a discount rate of 2.74%, which represented the then-current interest rate for a ten-year U.S. Treasury note. Using the current ten-year U.S. Treasury note would mean a discount rate of 2.67%.[10] ME/PN/PP/WP 4-SR at 7.

While the OCA does not agree with the use of a 2.67% discount rate, Mr. Fitzpatrick's analysis is telling. Ratepayers would experience a significantly higher overall NPV cost for the Revised Plan based on the 2.67% discount rate. FirstEnergy Companies witness Fitzpatrick testified:

> Using a discount rate of 2.67%, the NPV of the cost of the Accelerated Deployment Plan is approximately $13 million more than the NPV of the Original Deployment Plan. This equates to approximately 0.1% of the estimated $1.258 billion cost of the smart meter project.

ME/PN/PP/WP 4-SR at 7.

As can be seen, the Companies' analyses of the Revised Plan do not support their position that ratepayers will be better off under the Revised Plan. Indeed, the Companies' analyses demonstrate that on a NPV basis, the Revised Plan will increase costs to ratepayers in both the short term and the long term.

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10 The SGCC paper is based on the concept that the smart meter deployment is equivalent to a low risk investment. The Illinois Commerce Commission identified why the twenty-year Treasury bond was an inappropriate discount rate comparison for smart meters because of the risk level. The Illinois Commerce Commission stated:

> Using a proxy based on the 20-year Treasury bond rate is more appropriate for reduced or low risk investments. Ratepayers will be funding AMI investments and the customer and societal benefits associated therein are far from risk free. As Staff and the AG have articulated in testimony, a significant portion of these benefits are speculative and depend upon numerous factors outside of the Company's control. This view of a discount rate, from the ratepayer's perspective rather than society or the government, provides a more accurate projection of the risk AMI investments will have on those who fund it. For this reason, the Commission finds that the Company use of 3.6% discount rate based on the Government's cost of capital is inappropriate.

OCA Cross Examination Exh. 2, Attach. 7, Ameren Illinois Company d/b/a Ameren Illinois, Verified Petition for Approval of Smart Grid Advanced Metering Infrastructure Deployment Plan, Docket No. 12-0244 at 28 (December 5, 2012).

3. OCA Witness Hornby's Net Present Value Analysis Shows that the Revised Plan Will Not Benefit Customers.

To fully and properly analyze the Companies' Revised Plan, OCA witness Hornby used the Companies' model and a discount rate of 9.0%. When properly analyzed using a discount rate appropriate to the project, the problems with the Companies' Revised Plan are readily apparent. OCA witness Hornby first testified as to the analysis that he conducted as follows:

> I have prepared the same NPV calculations as Mr. Fitzpatrick using a discount rate of 9.0 percent. The 9% discount rate is consistent with the weighted average cost of capital of 8.17% to 11.29% that the Companies used to prepare NPV analyses from their perspective. Specifically, the discount rate of 9 percent assumes a 7 percent real discount rate based upon a U.S. Government Office of Management and Budget (OMB) Circular No. A-94 titled "Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs" plus 2% inflation rate based upon Federal Reserve Bank estimates. Section 8 b (1) of the OMB circular states that public investments and regulations displace private investment and consumption, and should be analyzed "...using a real discount rate of 7 percent, the marginal pretax rate of return of an average investment in the private sector." The OMB memo dated February 4, 2014 indicates a forecast rate of inflation of approximately 2.0% percent over 20 years. This is the forecast 20-year nominal interest rate of 3.6% minus the forecast 20-year real interest rate of 1.6%.

OCA St. 1-S at 19. Using OCA witness Hornby's 9% discount rate, the net cost to ratepayers through 2019 is 12% higher under the Revised Plan than under the Original Deployment Plan, and the NPV net cost of the Revised Plan through 2032 is 7.6% higher. OCA St. 1-S at 19-20, Exh. JRH-S-7.

As Mr. Hornby also explained, the accelerated deployment does not produce a significant increase in savings under the Revised Plan. Mr. Hornby testified:

> The Companies estimate that, by the end of 2019, savings will be $16.2 million more under the Revised Deployment Plan than under the Original Deployment Plan. Although almost double the cumulative savings under the Original Deployment Plan, that increase in savings is far less than, and thus does not fully offset, the much larger $62.7 million increase in cumulative costs under the Revised Deployment Plan noted earlier, Exhibit JRH–2 S page 2, replicated as Figure 2 plots the cumulative savings under the Original and Revised Deployment Plans through 2019, as well as the cumulative costs of both Plans.

OCA St. 1-S at 6. (Footnote omitted).

FirstEnergy Companies witness Fitzpatrick presented several arguments against OCA witness Hornby's use of the 9.0% discount rate even though it is within the range of the Companies' WACCs that Mr. Fitzpatrick also used to analyze the Revised Plan. First, Mr. Fitzpatrick argued that the 9.0% rate should be income tax adjusted. ME/PN/PP/WP 4-SR at 4. On cross-examination, however, Mr. Fitzpatrick admitted that his own 0.37% was not income tax adjusted either. Tr. 167. If the income tax adjustment was essential, then Mr. Fitzpatrick should have made this same adjustment. The income tax adjustment, however, would not change the fundamental outcome that the Revised Plan increases net costs as compared to the Original Deployment Plan.

Mr. Fitzpatrick also argued that the 9.0% discount rate is too high when considering the consumer perspective. ME/PN/PP/WP St. 4-SR at 4-5. OCA witness Hornby has worked on smart meter deployment cases across the country. Mr. Hornby's discount rate is within the range of discount rates used to analyze smart meter deployment plans across the country. See OCA Cross-Exam. Exh. 2. In response to the Companies' request for workpapers used to calculate the 9.0% NPV discount rate, Mr. Hornby provided the assumptions used in the discount rate calculations for the smart grid project cost-benefit analysis for eight other companies, including West Penn's original smart meter deployment plan at Docket No. M-2009-2123951 prior to its merger with the FirstEnergy Companies. Mr. Hornby described the workpaper as:

> A one-page summary of, as the title indicates, assumptions in terms of discount rates and time horizon for analyses that various utilities have used in their AMI or smart grid project filings before the Commissions in the states that I have identified.

Tr. 210. The discount rate used for the West Penn Power proceeding was 8.954%. OCA Cross Exam. Exh. 2. The discount rate used in other cases identified by Mr. Hornby are as follows: 8.124% (Oklahoma Gas and Electric); 7.6% (Pacific Gas and Electric); 8.23% (San Diego Gas and Electric); 7.09% (Potomac Electric Power in the District of Columbia); 8.49% (BG&E); 7.17% (Potomac Electric Power in Maryland); 6.69% (Atlantic City Electric); and 8.75% (Nevada Power and Sierra Pacific). Id. With the exception of West Penn Power, who had an intervening merger, the discount rates used were incorporated into the litigated results of the cases. OCA Cross Exam. Exh. 2. The OCA submits that the discount rates used for these other companies show the reasonableness of Mr. Hornby's use of a 9.0% discount rate.

The OCA recommends that a discount rate of 9.0% be used in calculating the NPV of the Revised Plan, as the 9.0% discount rate is supported by OCA witness Hornby's experiences in other jurisdictions and is based in economic theory of the opportunity costs for ratepayers of smart meter deployment. When a 9.0% discount rate is used, the NPV cost of the Revised Plan is 12% higher through 2019 than the Original Deployment Plan.

4. The Proposed Increases in SMT-C Rates Are Not Reasonable.

The NPV analyses conducted by the Companies and Mr. Hornby quantify the future costs and benefits of the Revised Plan. It is important to recognize that these costs and benefits are inputs into the revenue requirements that are the basis of the rates charged to customers. It is important to compare the charges under the Original Deployment Plan to those under the Revised Plan to understand the impact on customers. On a NPV basis, ratepayers would pay 18% more in revenue requirements from 2013 to 2032 and 46% more in revenue requirements from 2013 to 2019. See OCA St. 1-S at 12. At the same time, the Companies' shareholders will have higher NPV aggregate earnings under the Revised Plan, particularly through 2019 based on the $47 million in additional capital investment in that timeframe. OCA St. 1-S at 2, 16. The OCA submits that the increased rates charged to ratepayers through the SMT-C Riders for the level of accelerated smart meter deployment are not reasonable.

The FirstEnergy Companies' proposal would significantly increase the SMT-C rates to customers from 2014 through 2019. For residential customers, SMT-C rates will be higher by amounts ranging from $0.95 per month to $3.39 per month, which represents increases ranging from 40% to 259%. See OCA St. 1-S at 2. The Revised Plan, however, will only accelerate the deployment of smart meters to all customers by six months for 98.5% of the FirstEnergy Companies' ratepayers. OCA witness Hornby testified that:

> According to Mr. Fitzpatrick, by the end of 2019 the Companies will deploy the same total number of meters under the Revised Deployment Plan as under the Original Deployment Plan. However, under the Revised Deployment Plan they will deploy significantly more meters between 2015 and 2017. In 2015, the cumulative difference in smart meter deployment between the Revised and Original Deployment Plans is 150,000. By 2017 that cumulative difference peaks at 570,000 meters.
>
> The cumulative number of smart meters projected to be deployed by year under the Original Deployment Plan and under the Revised Deployment Plan is shown in Exhibit JRH-1 S and replicated in Table 1 below.

Table 1 Meter Deployment Schedule under Original and Revised Deployment Plans

	2014	2015	2016	2017	2018	2019
Original Deployment Plan	5,000	20,000	60,000	600,000	1,400,000	2,000,000
Revised Deployment Plan	50,000	170,000	670,000	1,170,000	1,670,000	2,000,000
Difference Revised vs. Original	45,000	150,000	610,000	570,000	270,000	-

Notes
Data from Exhibit GLF-1S

> Ultimately, however, the Revised Deployment Plan only enables the Companies to advance the installation of 98.5% of smart meters by six months, i.e., to the middle of 2019 as compared to the end of 2019 under the Original Deployment Plan.

OCA St. 1-S at 4. (Footnote omitted).

Residential ratepayers in all four operating Companies will pay higher rates from 2014 to 2018 under the Revised Plan for the acceleration of the back office infrastructure and accelerated smart meter deployment. The Companies will be primarily deploying smart meters from 2014 through 2015 in Penn Power's service territory, but all of the ratepayers will experience a significant increase in SMT-C rates in this same period under the Revised Plan. In 2015, Met-Ed customers will experience a \$0.87 per month, or an 83%, increase. Penelec customers will receive a \$0.85 per month, or an 83%, increase in 2015. Penn Power customers will receive a 259% increase of \$2.79 per month in 2015. West Penn customers will experience a \$0.00099/kwh, or 42% increase in 2015. OCA witness Hornby created Table 4 in his Supplemental Testimony which summarizes the rate impacts from 2014 to 2019:

Table 4 SMT C Monthly Rates for Residential Customers – Original and Revised Deployment Plans

SMT-C Monthly Rates for Residential Customers- Original and Revised Deployment Plans							
		2014	2015	2016	2017	2018	2019
Met Ed	Original Deployment Plan (\$) (1)	\$1.29	\$1.04	\$1.87	\$3.18	\$4.18	\$4.58
	Revised Deployment Plan (\$) (2)	\$2.26	\$1.91	\$3.50	\$4.22	\$4.59	\$4.38
	Change vs Filed	\$0.97	\$0.87	\$1.63	\$1.04	\$0.41	-\$0.20
		75%	83%	87%	33%	10%	-4%
Penn Elec	Original Deployment Plan (\$) (1)	\$1.28	\$1.03	\$1.86	\$3.14	\$4.20	\$4.62
	Revised Deployment Plan (\$) (3)	\$2.23	\$1.88	\$3.48	\$4.18	\$4.50	\$4.26
	Change vs Filed	\$0.95	\$0.85	\$1.62	\$1.04	\$0.30	-\$0.36
		75%	83%	87%	33%	7%	-8%
Penn Power	Original Deployment Plan (\$) (1)	\$1.31	\$1.08	\$1.91	\$2.86	\$3.76	\$4.31
	Revised Deployment Plan (\$) (4)	\$2.88	\$3.87	\$5.30	\$4.64	\$4.41	\$4.15
	Change vs Filed	\$1.57	\$2.79	\$3.39	\$1.78	\$0.65	-\$0.16
		120%	259%	177%	62%	17%	-4%
West Penn	Original Deployment Plan (\$) (1)	\$0.00276	\$0.00246	\$0.00296	\$0.00347	\$0.00451	\$0.00491
	Revised Deployment Plan (\$/kWh) (5)	\$0.00393	\$0.00345	\$0.00508	\$0.00489	\$0.00500	\$0.00472
	Change vs Filed	\$0.00117	\$0.00099	\$0.00212	\$0.00142	\$0.00049	-\$0.00019
		42%	40%	72%	41%	11%	-4%

OCA St. 1-S at 16.[11]

The increased rates to customers are projected by the Companies to begin as early as July of this year. A comparison of SMT-C rates for residential customers under the Original Deployment Plan and the Revised Plan for the period July 2014 through December 2014 is as follows:

FirstEnergy Company	Original Deployment Plan SMT-C Rate July – Dec 2014	Revised Plan SMT-C Rate July – Dec 2014	Percent Increase
Met-Ed	$1.79	$2.31	29%
Penelec	$1.74	$2.23	28%
Penn Power	$1.61	$2.68	66%
West Penn	$2.27 (750 kWh)	$2.95 (750 kWh)	30%

ME/PN/PP/WP St. 6-S at Exh. LWG-5, Pg. 1; LWG-6, Pg. 1; LWG-7, Pg.1; and LWG-8, Pg. 1.

The above table shows SMT-C rate increases of 28% to 66% while only 45,000 of the 2,000,000 meter installations would be achieved in this time frame. See ME/PN/PP/WP St. 4-S at Exh. GLF-1S.

The proposed increases in rates reflect the fact that the increased costs are not offset by a commensurate increase in savings that will be flowed through to customers under the Revised Plan relative to the Original Deployment Plan. As Mr. Hornby testified, the increased savings through 2019 expected from the accelerated deployment are far less than the increased costs. See OCA St. 1-S at 6. While the Companies have stated their intent to investigate and track all sources of potential operational cost savings driven by smart meter deployment including theft reduction, revenue enhancements, avoided capital costs, and distribution operations, they did not

[11] The OCA notes that the West Penn SMT-C rates included in Mr. Fitzpatrick's testimony were corrected on May 12, 2014 by affidavit to reflect the same rates as those in Ms. Gifford's testimony. This change does not impact the OCA's calculations or rates.

Revised Plan. Tr. 178. The $9.6 million in annual savings after full deployment of smart meters will occur only six months earlier than in the Original Deployment Plan.

The OCA submits that under the Revised Plan, the ratepayers of Met-Ed, Penelec and West Penn will pay significantly more in SMT-C surcharges between 2014 and 2019, to achieve a modest acceleration in the deployment of smart meters. Ratepayers will also pay more in rates through 2032 on a NPV basis to support the Revised Plan. There has been no showing that additional benefits will be achieved that justify these increased charges to customers.

B. Miscellaneous.

The OCA does not have any position on this topic.

VI. CONCLUSION

For the foregoing reasons, the Office of Consumer Advocate respectfully requests that the Commission reject the FirstEnergy Companies' Revised Smart Meter Deployment Plan and direct the Companies to proceed with the Original Deployment Plan approved by Commission Order entered March 6, 2014, at the above docket.

Respectfully Submitted,

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183210

CERTIFICATE OF SERVICE

Joint Petition of Metropolitan Edison Company	:	
Pennsylvania Electric Company, Pennsylvania	:	Docket Nos. M-2013-2341990
Power Company, and West Penn Power Company	:	M-2013-2341991
For Approval of their Smart Meter Deployment	:	M-2013-2341993
Plan	:	M-2013-2341994
	:	

I hereby certify that I have this day served a true copy of the foregoing, the Office of Consumer Advocate's Main Brief, upon parties of record in this proceeding in accordance with the requirements of 52 Pa. Code Section 1.54 (relating to service by a participant), in the manner and upon the persons listed below:

Dated this 14th day of May 2014.

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