OCA STATEMENT NO. 1-Supp.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition of West Penn Power Company	:	
d/b/a Allegheny Power For Expedited	:	DOCKET NO. M-2009-2123951
Approval of its Smart Meter Technology	:	
Procurement and Installation Plan	:	

SUPPLEMENTAL

DIRECT TESTIMONY

of

J. RICHARD HORNBY

On behalf of:

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

March 2, 2010

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, EMPLOYER, AND PRESENT POSITION.

A. My name is James Richard Hornby. I am a Senior Consultant at Synapse Energy Economics, Inc., 22 Pearl Street, Cambridge, MA 02139.

Q. ARE YOU THE SAME J. RICHARD HORNBY WHO SUBMITTED DIRECT AND SURREBUTTAL TESTIMONY IN THIS PROCEEDING?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL DIRECT TESTIMONY?

A. On January 29, 2010 West Penn Power Company d/b/a Allegheny Power ('Allegheny Power' or "the Company") filed Supplemental Direct Testimony of three witnesses describing two possible schedules for deploying smart meters and In Home Devices (IHD) as alternatives to the original approach it presented in the Smart Meter Technology Procurement and Installation Plan (SMIP or Smart Meter Plan) filed on August 14, 2009. Allegheny Power witness Ahr summarizes each alternative deployment schedule. Allegheny Power witness Valdes describes the rates under the Smart Meter Tariff (SMT) that would be required to recover the costs associated with each alternative deployment schedule. Allegheny Power witness Miller discusses the implications of each alternative deployment schedule for the Company's amended Energy Efficiency and Conservation Plan (EE&C) dated December 21, 2010 in Docket M-2009-2093218.

The purpose of my testimony is to address the reasonableness of each alternative deployment approach relative to the goals of Act 129 and the criteria set out by the Commission in its Implementation Order of June 18, 2009. My assessment is informed by the testimony of the other OCA witness, Ms. Nancy Brockway, regarding the potential

for adverse customer reaction to the alternative deployment schedules and less costly approaches to achieving reductions in peak and annual electricity use.

Q. IS YOUR SUPPLEMENTAL TESTIMONY LIMITED TO A SUB-SET OF THE ISSUES YOU ADDRESSED IN YOUR DIRECT TESTIMONY?

A. Yes. My supplemental testimony is limited to two issues. They are the total costs to ratepayers of the Company's two alternative deployment schedules and the rate mechanism it proposes for recovering those costs. My supplemental testimony does not address the allocation of total costs among rate classes nor the design of rates to recover costs allocated to each rate class, as those two issues have been litigated earlier in the proceeding.

Q. HOW IS THE BALANCE OF YOUR SUPPLEMENTAL TESTIMONY ORGANIZED?

A. In the balance of my testimony I evaluate the Company's two alternative deployment schedules, describe a fourth possible deployment schedule that I propose as an alternative to the three deployment schedules the Company has proposed and present my conclusions and recommendations.

II. EVALUATION OF COMPANY ALTERNATIVE DEPLOYMENT SCHEDULES

Q. PLEASE BEGIN BY SUMMARIZING THE SIX MAJOR COMPONENTS OF THE COMPANY'S SMIP.

A. The Company's proposed SMIP consists of six major components. They are In Home Devices, a term the Company uses for both in home displays and programmable controllable thermostats (PCTs); smart meters; a communication network; back office

systems; customer interfaces and system management/security. In its EE&C Plan the Company refers to these last four components as *smart meter infrastructure* or *smart metering infrastructure* (SMI) (EE&C, page 12). The EE&C Plan refers to all six components as smart meter solution architecture (EE&C, Appendix F-3; SMIP pages 11 and 12). In this testimony I will refer to those four components as SMI.

Q. PLEASE COMPARE THE THREE ALTERNATIVE SCHEDULES THE COMPANY HAS PROPOSED FOR DEPLOYING THOSE COMPONENTS.

A. The Company has proposed three alternative schedules for deploying these components, the original deployment schedule in its August 2009 SMIP and two alternative deployment schedules presented in the Supplemental Testimony of Mr. Ahr. I refer to these three as the Original schedule, the 375,000 meter alternative and the 100,000 meter alternative. The three alternatives do not differ in terms of deployment of four components, i.e., the communication network, back office systems, customer interfaces and system management/security. The three deployment alternatives differ in the method of deployment of IHDs and in the pace and method of deployment of smart meters.

Exhibit___(JRH-8) provides an overview of the Company's original deployment schedule and its two alternative deployment schedules. Under its original deployment schedule the Company proposed to install its smart meter solution architecture throughout its service territory by 2014 as distribution system investments for which it would charge all customers via its proposed Smart Meter Tariff (SMT). It proposed to deploy its back office systems, customer interfaces and system management/security over a three year period, 2010 through 2012, in order to support the full proposed functionality of all smart meters on a system-wide basis from mid-2012 onward. The Company

proposed deploying its communication network throughout its entire service territory, by geographic segment starting with the most populous segment, over a five year period through 2014. It proposed deploying its IHDs and smart meters throughout its entire service territory in a corresponding manner, segment by segment, over that five year period. Under this approach the Company proposed deploying 450,000 meters by mid-2012 and the remaining 275,000 meters from mid-2012 through 2014, for a system-wide total of 725,000.

As noted earlier, under the 375,000 and the 100,000 alternative deployment schedules the Company is not proposing any change to its deployment schedule for four of the six components, i.e., back office systems, customer interfaces, system management/security and communication network. As shown in Exhibit___(JRH-8), what is different under those two alternative deployment schedules is the method of deployment of IHDs and the pace and method of deployment of smart meters to customers throughout its service territory.

- Under the 375,000 and the 100,000 alternative deployment schedules the Company is proposing to provide in-home displays only to those customers who request one or who enroll in one of the Company's EE&C Plan programs or rate offerings for which the Company considers that an in-home display is necessary. It is proposing to provide PCTs only to those customers who enroll in one of the Company's EE&C Plan programs or rate offerings for which the Company considers a PCT is necessary.
- Under the 375,000 meter option the Company proposes to deploy smart meters throughout its service territory at a slower pace, but in the same manner as its

Original deployment. The Company proposes to deploy 375,000 meters by mid-2012 and the balance by 2017, beginning with the geographic segments of its service territory with highest customer densities. Customers in segments where smart meters are deployed would automatically receive, and be charged for, a smart meter.

- Under the 100,000 meter option the Company proposes to deploy smart meters at a much slower pace through 2014, and in a different manner than the Original deployment and the 375,000 meter alternative. Through 2014 the Company proposes to only install smart meters in response to customer request, and in new construction. Under this opt-in approach it assumes that 100,000 customers will voluntarily elect to receive, and pay for, a meter by mid-2012. It also assumes that 100 percent of those 100,000 customers will also elect to participate in one of the EE&C Plan program and rate offerings that are enabled by smart meters. From 2015 through 2019 the Company proposes to deploy the remaining meters throughout its service territory on a mandatory basis.

Q. PLEASE COMPARE THE SMT CHARGES ASSOCIATED WITH EACH OF THE COMPANY DEPLOYMENT SCHEDULES.

A. Under the original deployment schedule the Company proposed a single SMT charge that would apply to all customers. (The charge would change from year to year). Under its 375,000 meter and 100,000 meter alternative deployment schedules the Company is proposing two tiers of SMT charges plus a separate charge for IHDs..

- The first Tier SMT charge is set to recover the costs of the communication network, back office systems, customer interfaces and system

management/security. The Company proposes to apply the first Tier charge to all customers.

- The second Tier SMT charge is set to recover the cost of smart meters. The Company proposes to apply the second Tier charge only to customers who receive a smart meter.
- A charge separate from the SMT charge has been proposed to recover the cost of an in-home display. The Company proposes to apply this separate charge only to customers to whom it provides an in-home display and, apparently, a PCT under one of its EE&C Plan programs or rate offerings. (The supplemental testimony of the Company witnesses is not crystal clear regarding the mechanism through which PCT costs would be recovered under the alternative deployment schedules.)

Exhibit___(JRH-9) presents a summary comparison of the SMT charges for residential customers (Tariff Schedule 10) during the period June 2013 to May 2014 under the Company's original deployment schedule and its two alternative deployment schedules. Under the Company's original deployment schedule during that period all residential customers would pay a monthly charge of $15.77.

Under the 375,000 meter deployment schedule during that period all residential customers would pay the first Tier SMT monthly surcharge of $7.93, as indicated in Exhibit___(JRH-9). In addition, residential customers who had received a smart meter would pay the second Tier SMT charge of $1.93, bringing their monthly charge to $9.86. Finally, residential customers who had received a smart meter and an IHD would pay the incremental surcharge of $3.96, bringing their total monthly charge to $13.82.

Under the 100,000 meter deployment schedule during that period all residential customers would pay the first Tier monthly charge of $8.23. Residential customers who had received a smart meter would pay the additional second Tier SMT surcharge of $2.35 bringing their total monthly charge to $10.58. Finally residential customers who had received a smart meter and an IHD would pay the further incremental surcharge of $3.86, bringing their monthly charge to $14.44.

Q. WHY HAS THE COMPANY PRESENTED THESE ALTERNATIVE DEPLOYMENT SCHEDULES?

A According to Mr. Ahr, the Company has presented these alternative deployment schedules for two reasons (Ahr Supplemental, page 3). First, the Company wants to respond to concerns regarding the cost and pace of deployment raised by parties to the proceeding. Second, the Company wants to "…provide the Commission with the less rapid deployment of smart meter plan that it requested the Company to prepare in the EE&C Order".

<u>Cost and Pace of Smart Meter Deployment</u>

Q. MR. AHR STATES THAT THE COMPANY WANTS TO RESPOND TO CONCERNS REGARDING THE COST AND PACE OF DEPLOYMENT RAISED BY THE PARTIES TO THE PROCEEDING. DO THE COMPANY'S TWO ALTERNATIVES ADEQUATELY RESPOND TO THOSE CONCERNS?

A. No. The Company's two deployment alternatives do contain some features that are improvements over those in its original deployment. Those features provide a starting point for development of a cost-effective smart meter deployment strategy. However, as I

discuss in detail below, neither of the Company's two alternatives resolve the fundamental concerns regarding cost and pace of deployment of the Company's SMIP that I raised in my Direct Testimony.

Q. WHAT FEATURES OF THE COMPANY'S TWO DEPLOYMENT ALTERNATIVES REPRESENT IMPROVEMENTS OVER THOSE IN ITS ORIGINAL DEPLOYMENT SCHEDULE?

A. Several features of the Company's two deployment alternatives are improvements over its original deployment schedule. First, limiting deployment of, and charges for, in-home displays to only those customers who request them is an improvement that better matches costs to benefits. Under this approach customers would be allowed to acquire an in-home display on a competitive basis. Second, slowing the pace of system-wide deployment of smart meters is an improvement that should reduce the financial risk of the SMIP. Third, the Company's proposal to depreciate the capital costs of most components of the SMIP over longer lives is an improvement that will help somewhat mitigate its rate impact. Finally, the Company's proposal to use a return on equity of 10.5 percent to calculate its SMIP related revenue requirements is also an improvement relative to its original deployment schedule, however I continue to support a return of 10.1 percent for the reasons presented in my Direct Testimony. However, despite those improvements the Company's two deployment alternatives are still not reasonable and prudent.

Q. WHAT IS THE PRIMARY REASON WHY THE COMPANY'S TWO DEPLOYMENT ALTERNATIVES DO NOT RESOLVE YOUR FUNDAMENTAL CONCERNS REGARDING COST AND PACE OF DEPLOYMENT OF THE COMPANY'S SMIP?

A. The Company's two deployment alternatives do not resolve my fundamental concerns for two main reasons.

First, those alternative deployment schedules, like the original deployment schedule, are based upon the immediate installation of a very expensive back office system that has far more capacity than is needed to just support an initial, limited number of smart meters. Because the Company will be deploying fewer meters through 2014 under its two deployment alternatives, but incurring the same capital costs for its back office systems and other components except smart meters and IHDs, customers will be receiving even fewer benefits per meter installed than under the original deployment schedule.

Second, under those alternative deployment schedules, like the original deployment schedule, the Company is proposing to recover essentially all of its back office costs through its SMT. In my Direct Testimony I explained why the Company should be allocating some of its other back office system costs among its sister operating companies in other states rather than just the customer information system (CIS) element of those costs. I also explained why the Company should be recovering some, if not all, of its Pennsylvania jurisdictional back office system costs through base rates as part of its routine distribution service expenditures.

Q. PLEASE SUMMARIZE THE CONCERNS REGARDING THE COST AND PACE OF SMART METER DEPLOYMENT THAT YOU RAISED EARLIER IN THIS PROCEEDING.

A. My Direct Testimony raised four concerns regarding the cost and pace of the original deployment schedule the Company proposed for its SMIP. First, the total projected savings from the SMIP are about one-sixth, approximately 15%, of the projected costs due largely to the fact that its projected capital costs were more than twice as high as AMI projects of other utilities. Second, the Company could achieve most if not all of the reductions in peak load projected in its EE&C Plan without widespread deployment of smart meter technology. Third, the projected savings in generation service costs are uncertain. Fourth, customers would bear all the financial risk if the Company's actual costs prove to be higher than assumed, and/or if the actual benefits prove to be less than assumed. Based upon those four concerns I concluded that the Company had not demonstrated that its proposed Plan is the most cost-effective approach of meeting the goals of Pennsylvania Act 129 with respect to deploying smart meter technology and supporting reductions in peak load and annual energy consumption, and hence was not reasonable.

Neither of the Company's two proposed alternative deployment schedules resolves the first two of my concerns, as I explain in my detailed discussion below. Moreover, neither of the Company's two proposed alternative deployment schedules address the last two of my concerns, i.e., the uncertainty in the projected savings in generation service costs or the fact that customers bear all the financial risk if the Company's actual costs prove to be higher than assumed, and/or if the actual benefits

prove to be less than assumed. Therefore, I continue to have the same fundamental concerns regarding the cost and pace of deployment of the Company's SMIP.

Q. ARE THE ALTERNATIVE DEPLOYMENT SCHEDULES MORE COST-EFFECTIVE THAN THE ORIGINAL DEPLOYMENT SCHEDULE?

A. No. On a cost per meter installed basis, the alternative deployment schedules are actually less cost-effective than the original deployment schedule.

The Company did not provide analyses of the cost-effectiveness of each alternative. However, Mr. Ahr does explain that, once one excludes the costs of IHDs, each alternative has a higher total cost than the original deployment because of their longer deployment schedules (Ahr Supplemental page 10.)

My analyses confirm that the alternative deployment schedules are less, rather than more, cost-effective than the original deployment schedule. The bar chart on page 1 of Exhibit___(JRH-10) provides a summary of the projected costs of the original deployment schedule and each alternative deployment schedule through 2014. These are simple totals of capital costs and annual operating costs with no discounting for the time value of money. The table on page 2 of Exhibit ___(JRH-10) provides the cumulative distribution service benefits through 2014 under each of the deployment schedules. These projected savings are a small fraction of the total costs. On their face, those annual savings would not justify these capital investments.

The absolute costs of the 375,000 meter and 100,000 meter deployment schedules through 2014, excluding IHD costs and net of projected savings in distribution service, are lower than the original deployment schedule. However, as shown in the bar chart on page 1 of Exhibit___(JRH-10), the absolute costs through 2014 are somewhat lower

simply because the Company is deploying fewer meters and thus has lower costs for smart meters and depreciation of the meters it is replacing. The costs of its remaining components, i.e. communication network, back office system, customer interface and system management / security, do not change at all. As a result, the effective total cost to customers of each alternative deployment schedule through 2014 is dramatically higher than the original deployment because, on a system-wide basis, customers are receiving less service for their money under each alternative schedule over that five year period.

The higher effective cost to customers can best be seen by comparing each alternative on the basis of its total cost and the corresponding number of meters actually installed under each schedule. That comparison, expressed as the total cost per meter installed, indicates that the 375,000 meter option is twice as expensive as the Original Deployment schedule, at $1,300 per meter installed versus $710 per meter installed. The 100,000 meter option is even more expensive at $4,300 per meter installed. Those simple total unit costs per meter installed are presented on page 2 of Exhibit___(JRH-10).

Q. WHY ARE THE COSTS OF THE COMPANY'S ALTERNATIVE DEPLOYMENT SCHEDULES SO MUCH HIGHER THAN THOSE OF ITS ORIGINAL DEPLOYMENT SCHEDULE THROUGH 2014?

A. The alternative deployment schedules have much higher capital costs per meter installed through 2014 than the original schedule primarily because the Company is proposing the exact same communication network, back office system, customer interface and system management / security under all three schedules. In other words, the Company is proposing an approach whose capital cost does not vary with the number of meters that it supports. The most costly of those four components are the Company's back office

systems. According to the Company, the costs of its proposed back office systems are fixed, i.e., they do not "scale". Therefore, the fewer smart meters that it installs under a deployment schedule, the fewer meters over which it recovers this fixed cost and the higher the capital cost per meter installed.

Q. HOW DO THE COSTS OF THE COMPANY'S ORIGINAL AND TWO ALTERNATIVE DEPLOYMENT SCHEDULES COMPARE TO THE COSTS OF SMART METER PROJECTS OF OTHER UTILITIES?

A. The costs of the original and two alternative deployment schedules are dramatically higher than those of smart meter projects of other utilities. Exhibit___(JRH-11) presents a comparison of the costs of smart meter projects of other utilities, the Company's original deployment and the Company's two alternative deployment schedules. This comparison is based upon the total capital cost of each smart meter plan divided by the total number of meters installed, i.e. capital cost per meter installed. The comparison excludes IHDs.

The bar chart on page 1 of Exhibit___(JRH-11) presents a comparison of the capital costs of the three major components of each utility's smart meter plan – meters, communication network and all other components (i.e. back office systems, customer interface, security). This comparison demonstrates that the utilities in the comparison group have installed smart meter systems at total capital costs in the range of $250 per meter installed. In contrast, the capital costs of the Company's proposed SMIP are substantially higher under all three of its deployment schedules. As of 2014 the Company's original deployment schedule has a capital cost of $615 per meter installed while the 375,000 meter deployment and the 100,000 meter deployment schedules have capital costs of $925 per meter installed and $2811 per meter installed.

Q. ARE THE COMPANY'S HIGHER COSTS FOR ITS ORIGINAL AND TWO ALTERNATIVE DEPLOYMENT SCHEDULES PRIMARILY DUE TO ITS MORE RURAL SERVICE TERRITORY?

A. No. Earlier in the proceeding Company stated that one reason why the costs of its proposed SMIP are higher than those of other utilities is that it serves a more rural service territory. In other words it had to make the same investment in SMI as other utilities, but it served fewer customers per square mile. The Company did not provide any analyses to support that position, and my analyses do not support it. The Company does serve fewer customers per square mile than the other utilities in the comparison group, at about 60 customers per square mile on average. However, as indicated on page 2 of Exhibit___(JRH-11), the customer densities of the utilities in the comparison group range from as high as 900 meters per square mile to as low as approximately 100 meters per square mile, yet there is little variation in the capital costs of their smart meter systems, which range between $200 and $260 per meter installed. Two of the comparison utilities, SCE and Oncor, have customer densities in the order of 100 customers per square mile but their capital costs per meter installed are in the range of $200-$260.

Q. WHY ARE THE COSTS OF THE COMPANY'S ORIGINAL AND ALTERNATIVE DEPLOYMENT SCHEDULES SO MUCH HIGHER THAN THOSE OF SMART METER PLANS OF OTHER UTILITIES?

A. The costs of the original deployment schedule and the alternative deployment schedules as of 2014 are higher than the smart meter plans of other utilities primarily because the back office system component of the Company's SMI is several times higher than those of smart meter plans filed by other utilities. (The capital cost per meter installed of the

two alternative deployment schedules will be some lower when the Company completes its system-wide deployment in 2017 and 2019 respectively, but even then they will higher than those of other utilities). The Company's higher back office system costs are attributable to two main factors. I discussed these two factors in my Direct and Surrebuttal Testimony, and now have further support for my position based upon my review of the Company's alternative deployment schedules. Those two factors are the scale of the Company's back office systems and its proposal to recover the costs of all of those back office systems through its SMT surcharge.

Q. PLEASE DISCUSS THE PROPOSED SCALE OF THE COMPANY'S BACK OFFICE SYSTEMS.

A. The Company is proposing back office system hardware and software that it could use to support the deployment of smart meters not only throughout its entire service territory but also throughout the service territories of its sister companies in Maryland, Virginia and West Virginia (Response to OCA VII -4). However, except for the costs of its Customer Information System (CIS), the Company is allocating all of its back office system costs solely to its Pennsylvania service territory. The Company bases its allocation of these costs solely to Pennsylvania on the grounds that it currently has no plans or mandate to deploy smart meters in those other states.

As I noted in my Direct Testimony, the Company should be allocating some of these back office system costs among its sister companies rather than just its CIS costs, regardless of whether or when those jurisdictions mandate smart meter deployment. For example, PEPCO Holdings Incorporated (PHI), which operates distribution companies in four states plus the District of Columbia submitted proposals for advanced metering

infrastructure in those states as far back as 2007. Those filings identified the meter data management system (MDMS) as the primary back office system costs and proposed allocating that cost among PHI's distribution companies in each jurisdiction from the outset, regardless of when or if those other states approved the implementation of AMI.

Q. PLEASE DISCUSS THE PROPOSED RECOVERY OF ALL PENNSYLVANIA JURISDICTIONAL BACK OFFICE SYSTEM COSTS VIA THE SMT.

A. Some, if not all, of the back office systems that the Company is proposing are investments the Company would be making as part of its normal distribution service business. In addition to its investments in modernizing its CIS system these normal business investments include installation of an Enterprise Service Bus (ESB), an upgraded Work Management System (WMS), a new Geographic Information System (GIS) and an upgraded Outage Management System (OMS). As I noted in my Direct Testimony, the Company should seek recovery of those normal Pennsylvania jurisdictional back office system costs in its base rates rather than through a special SMT charge.

Q. WILL CUSTOMERS RECEIVE MORE OR LESS BENEFIT UNDER THE ALTERNATIVE DEPLOYMENT SCHEDULES THAN UNDER THE ORIGINAL DEPLOYMENT?

A. On a per customer served basis customers will receive even less service for their money in the initial years of each alternative deployment schedules than under the original deployment schedule. This is particularly troublesome because the service the Company proposed under its original deployment schedule is not cost-effective to start with, as I explained in my Direct and Surrebuttal Testimony.

Under each of its three deployment schedules the Company is proposing to charge all customers, either implicitly or explicitly, an SMT Tier I charge for its back office system, customer interface, system management and communication network. However, under the two alternative deployment schedules fewer customers will have access to smart meters supported by those components through 2014 than under the original deployment. The relative numbers of customers who will be paying the SMT Tier I charge but who will not receive direct smart meter related benefit from it is shown in the bar chart in Exhibit___(JRH-12).

Q. PLEASE SUMMARIZE THE BILL IMPACTS FOR RESIDENTIAL CUSTOMERS OF THE COMPANY"S ALTERNATIVE DEPLOYMENT SCHEDULES.

A. Exhibit___(JRH-13) presents a comparison of bill impacts for residential customers without, and with, smart meters between June 2013 and May 2014 under each of the three deployment schedules. These bill impacts have to be examined in terms of their magnitude as well as in terms of the service that customers would be receiving in return.

Under the original deployment schedule in the June 2013 – May 2014 year residential customers would pay nearly $189 per year. Under the 375,000 meter deployment and the 100,000 meter deployment residential customers without smart meters would pay SMT Tier I charges ranging from $95 to $99 per year. The increase in that year for residential customers with smart meters under those alternatives would range from $118 to $127 per year. Thus, in that year the bill impacts under the alternative deployment schedules are somewhat lower than those of the original deployment schedule. However those impacts still translate into increases of approximately 17 % for

a residential customer without a smart meter using 500 kWh per month, and 21% to 23% for customers with a smart meter. (In contrast, the Company estimates the increase in average residential monthly bills under the EE&C Plan would be limited to about $25 per year in order to comply with the constraints imposed by Act 129.)

Q. DO THE ALTERNATIVE DEPLOYMENT SCHEDULES ADDRESS THE RECOMMENDATIONS YOU PRESENTED REGARDING THE COST AND PACE OF SMART METER DEPLOYMENT EARLIER IN THIS PROCEEDING?

A. The alternative deployment schedules address the recommendations I raised earlier in this proceeding regarding the Company's proposed deployment of in-home displays and asset lives. Otherwise, the alternative deployment schedules do not address my earlier recommendations that the Company:

- file a modified Plan limited to activities and analyses it would complete during the remainder of the 30-month grace period, including specific milestones and a commitment by Allegheny Power to report to the Commission when each milestone is achieved, at which time the Commission could review and approve decisions and the next tasks;
- remove costs for modernizing its CIS from the SMIP;
- provide a benefit-cost analysis to justify deployment of each type of in-home device;
- provide a justification for the proposed level of expenditures on IT integration and software; and
- use the remainder of the 30-month grace period to revise and refine its proposed approach in order to identify the most cost-effective smart meter technology

deployment strategy and to quantify both the generation service and distribution service benefits of that strategy over a fifteen period.

Q. ARE THE ALTERNATIVE DEPLOYMENT SCHEDULES REASONABLE IN TERMS OF THE COST AND PACE OF SMART METER DEPLOYMENT?

A No.

EE&C Plan Reliance on Smart Meter Deployment.

Q. PLEASE ADDRESS THE COMPANY'S SECOND REASON FOR PRESENTING THE ALTERNATIVE DEPLOYMENT SCHEDULES - CONCERNS REGARDING EE&C PLAN RELIANCE ON SMART METER DEPLOYMENT.

A On page 21 of its October 15, 2009 Order approving the Company's EE&C Plan, the Commission expressed concern about the Company's reliance on rapid deployment of smart meters and associated network infrastructure to achieve its mandated EE&C Plan targets. It stated:

> *We again note that this Commission agrees with the OCA that Allegheny's reliance on the rapid deployment of smart meters and the associated network infrastructure does add an element of increased risk to its Plan. As Allegheny bears the sole risk of significant penalties if it fails to meet the mandated targets, we will not direct Allegheny to eliminate the proposed programs that rely on smart meter deployment, except where otherwise directed in this Opinion and Order. In recognizing this increased risk, the Commission strongly encourages Allegheny to develop an alternate "back-up" plan that is less reliant on smart meter deployment. Such an alternate plan would be a readily available option that can be implemented on short notice, after Commission approval, should any unforeseen circumstances delay or disrupt Allegheny's smart meter deployment. The Commission will closely monitor this element of Allegheny's Plan during the*

annual plan reviews and its review and monitoring of Allegheny's Smart Meter Procurement and Installation Plan.

More recently, in a Motion presented at a February 11, 2010 Public Meeting Chairman Cawley noted that

> *Allegheny's Revised Plan acknowledges a revised smart metering implementation schedule, but fails to clearly denote which EE&C programs and measures are dependent upon implementation of its smart metering plan. Allegheny should therefore provide a chart clarifying its kWh and kW reductions for each of its programs that would be achieved if its smart metering plan is not implemented within the established timeline of its EE&C Plan.*

The Commission approved the Chairman's motion and required the Company to provide a chart indicating its Revised Plan achievement of goals if its smart metering plan is not implemented during the initial EE&C Plan period.

Q. DO THE ALTERNATIVE DEPLOYMENT SCHEDULES ADDRESS THE COMMISSION'S CONCERN ABOUT THE COMPANY'S RELIANCE ON RAPID DEPLOYMENT OF SMART METERS TO ACHIEVE ITS EE&C PLAN TARGETS?

A No. The Company's proposed alternative deployment schedules do not address that Commission concern. Rather than providing back-up plans that are *"…less reliant on smart meter deployment"*, the Company's EE&C Plan remains just as reliant on smart meter deployment. Moreover, the Company indicates that under the alternative meter deployment schedules it will face more difficulty in achieving its EE&C Plan targets than under its original deployment schedule.

The Company's alternative deployment schedules do not address the Commission concern because the Company is proposing to achieve the same demand reductions from

its eight EE&C programs and rate offerings reliant on smart meters as under the original deployment schedule (Miller Supplemental, page 5). Thus, the Company has not reduced its reliance on achieving demand reductions from smart meter deployment. Instead, under the original deployment schedule and the two alternative deployment schedules the Company is projecting the same total number of active participants, at least 60,000, in the eight EE&C Plan program and rate offering that it maintains are reliant upon smart meter deployment. This was illustrated earlier in Exhibit___(JRH-12).

Mr. Miller explicitly states that the 100,000 meter deployment schedule "…adds risk to the Company of obtaining customer participation in the programs and rate offerings" (Miller Supplemental, page 6). According to Mr. Miller, the added risk is due to the fact that under that alternative deployment a customer would have to actively "opt-in" or choose to receive a smart meter and to pay the additional Tier II surcharge as well as to pay the separate IHD charge. Mr. Miller explains that, under that approach the Company will face more difficulty in enrolling its target number of participants in each program and rate offering because it will have to work harder to capture their attention and to then overcome their resistance to paying those additional charges.

Q. CAN YOU PROVIDE A NUMERICAL EXAMPLE WHICH ILLUSTRATES WHY THE ALTERNATIVE DEPLOYMENT SCHEDULES WILL MAKE IT MUCH MORE DIFFICULT FOR THE COMPANY TO ENROLL PARTICIPANTS IN ITS EE&C PLAN PROGRAMS AND RATE OFFERINGS?

A. Yes. The Company will have much more difficulty achieving the levels of participation it is projecting for its EE&C Plan programs and rate offerings under both the 375,000 meter deployment schedule and the 100,000 meter deployment schedule than under the

original deployment schedule. This can be illustrated using the Company's PCT Program as an example.

According to its EE&C Plan, the "value proposition" that the Company is offering to attract customers to enroll in the PCT program consists of a one-time enrollment incentive of $50, the installation of a PCT at no incremental charge and the prospect of future savings from the operation of the PCT. Under the 375,000 meter deployment schedule that value proposition is reduced by the fact that the participant will apparently have to pay an incremental charge of approximately $4 per month for the PCT. That $48 per year reduces the value proposition. Under the 100,000 meter deployment schedule that value proposition is reduced even further by the addition of the second Tier SMT surcharge of $2.35 per month for the smart meter. Combined, the IHD and second Tier SMT charges reduce the value proposition by about $76 per year.

The incremental IHD charge and the second Tier SMT surcharge will similarly lower the value proposition associated with the Company's various rate offerings.

Q. HAS THE COMPANY PREPARED ANY ANALYSES OF THE EXTENT TO WHICH THE TWO TIER SMT CHARGES AND THE INCREMENTAL IHD CHARGES UNDER THE ALTERNATIVE DEPLOYMENT SCHEDULES WILL REDUCE ITS ABILITY TO ENROLL SUFFICIENT PARTICIPANTS IN ITS EE&C PLAN PROGRAMS AND RATE OFFERINGS?

A. No, as indicated in its response to OCA data request VII – 5 sections a, c, d and e.

Q. ARE THE COMPANY'S ALTERNATIVE DEPLOYMENT SCHEDULES REASONABLE IN TERMS OF REDUCING THE COMPANY's EE&C PLAN RELIANCE ON SMART METERS?

A No.

III. FOURTH ALTERNATIVE DEPLOYMENT SCHEDULE

Q. HAVE YOU DEVELOPED A FOURTH POSSIBLE DEPLOYMENT SCHEDULE FOR CONSIDERATION BY THE COMPANY AND THE COMMISSION?

A. Yes. I have developed a fourth possible deployment schedule which is consistent with the goals of Act 129 and the criteria set out by the Commission in its Implementation Order. Based upon my understanding, from a policy perspective, the Company should deploy smart meter technology in a manner that "…best balances the overall efficiency and timeliness of the smart meter installations with the costs incurred" (Implementation Order, page 14). In developing this schedule I also considered the Company's additional goals from its SMIP, page 16, which are attainment of its EE&C Plan targets, prudent and timely expenditure of funds and providing a technical foundation for future energy efficiency and demand response.

Under this fourth alternative the Company would make an initial deployment of approximately 100,000 smart meters in one of the most populous geographic segments of its service territory using its existing back office and other systems to the greatest extent possible. This approach would provide the Company the opportunity to gain value direct experience before incurring major investments in new and upgraded back office systems and other components. This experience would include first hand experience with smart meters on its system as well with the reaction of its customers to programs and rate offerings designed to meet their specific loads and costs. In addition, under this alternative the Company would place a priority on developing and implementing a low

cost direct load control (DLC) program that it could offer to residential and small commercial customers throughout its service territory in advance of the full deployment of smart meters and SMI. This DLC program would be a key element of the "back up plan" that the Commission requested the Company to provide.

Q. PLEASE SUMMARIZE THE KEY FEATURES OF THIS RECOMMENDED DEPLOYMENT SCHEDULE.

A. The key features of my recommended deployment schedule are as follows:

- Smart meters and communication network
- Review of 2010 deployment and customer response.
- Back Office Systems, Customer interface and System management.
- In Home Displays
- Completion of full deployment over service territory
- New low cost Direct Load Control program
- EE&C Plan programs enabled by smart meters and SMI (Programmable Controllable Thermostat (PCT) program and TOU rates)
- SMT.

Q. PLEASE DISCUSS THE DEPLOYMENT OF SMART METERS AND THE COMMUNICATION NETWORK.

A. The Company should conduct the field testing of meters and communication network technology proposed in its 375,000 deployment. The Company should, however, deploy no more than approximately 100,000 smart meters, in the same manner as its 375,000 meter deployment, i.e. full deployment in the geographic segment of its service territory with highest customer densities subject to the Company's discretion. This limit should

enable the Company to provide full deployment in the segment(s) of its system with highest customer density. Under this approach all customers in those areas in which smart meters are fully deployed would automatically receive a meter. The approximate 100,000 meter limit should be sufficient for the Company to enroll customers in its various EE&C Plan rate offerings and to conduct pilots of TOU and other rates.

Q. PLEASE DISCUSS THE REVIEW OF 2010 DEPLOYMENT AND CUSTOMER RESPONSE.

A. In the fall of 2011 the Company would submit an assessment of its initial deployment and customer response. It would include proposed investments in upgraded or additional back office systems if justified by the Company's re-assessment. The filing would include proposed allocations of back office system costs among its jurisdictions and would also identify the normal business investments to be recovered in base rates.

Q. PLEASE DISCUSS THE BACK OFFICE SYSTEM, CUSTOMER INTERFACE AND SYSTEM MANAGEMENT FEATURES.

A. The Company should re-assess its plans for new back office systems, customer interfaces and system management/security. The Company would have to submit its revised plans for these components, and revised estimates of their projected costs, to the Commission as part of its filing describing its experience in 2010.

As noted earlier, the purpose of an initial deployment relying upon existing systems is to gain direct experience upon which to base the design of, and justification for, major investments in new and upgraded back office systems and other components. The Company indicated that it is capable of supporting this limited number of smart meters with its existing systems in its response to OCA data request I – 24. Once it has

this direct experience the Company should be able to clearly demonstrate that its proposed investments in back office systems and other components represent the most cost effective approach.

Q. PLEASE DISCUSS THE IN HOME DISPLAY FEATURE.

A. The Company should only provide in-home displays to customers who request one, and should recover the cost of the displays from customers who receive them. Customers who participate in one of the Company's EE&C Plan programs or rate offerings would have the ability to decide if they wanted to elect, and pay a separate charge for, the in-home display.

Q. PLEASE DISCUSS THE COMPLETION OF FULL DEPLOYMENT THROUGHOUT THE SERVICE TERRITORY.

A. Completion of full deployment over the service territory within 10 years could be accomplished subject to results of the review of 2010 experience.

Q. PLEASE DISCUSS THE NEW LOW COST DIRECT LOAD CONTROL PROGRAM

A. As noted earlier, the Company should place a priority on developing and implementing a low cost direct load control (DLC) program that it could offer to residential and small commercial customers throughout its service territory in advance of the full deployment of smart meters and SMI. This DLC program would be a key element of the "back up plan' that the Commission requested the Company to provide. Other Pennsylvania utilities have incorporated direct load control programs into their EE&C Plans. Ms. Brockway describes similar DLC programs that at least two New Jersey utilities are implementing that can accommodate the implementation of smart meters and SMI at a

later date. The costs of this DLC program should be recovered from the EE&C Plan charge.

Q. PLEASE DISCUSS THE EE&C PLAN PROGRAMS ENABLED BY SMART METERS AND SMI.

A. The EE&C Plan programs enabled by smart meters and SMI that are most affected by this deployment schedule are the PCT program and the rate offerings targeted towards residential customers.

The PCT program is a program under which participating customers allow the Company to control the operation of their central air conditioner during a limited number of critical peak periods each summer. Under this alternative deployment schedule the Company would place primary emphasis on enrolling as many eligible participants as possible into this program. Since the Company has to install a PCT at the premises of each participant, it makes sense to install a smart meter at the same time to minimize installation costs (assuming the same technician can install both). In order to have a sufficiently large pool of eligible customers the Company may have to deploy a new communication network in the same sequence as proposed in its 375,000 meter deployment schedule through 2012. If so, the Company should justify that deployment. Smart meters installed outside these segments as part of the PCT Program would not be counted as part of the approximate 100,000 smart meter limit. The costs of the PCT installed under the PCT program should be recovered from the EE&C Plan charge.

The Company should file proposals for voluntary time of use and dynamic pricing rate offerings on a pilot basis that it can enable with its existing back office systems. It could include in that filing proposals to offer other rate offerings on a pilot project basis,

that it can enable with its existing back office systems. The Company should limit its initial TOU rate offerings to those it can support with its existing back office systems and to pilot projects in order to gather empirical data on the design of rate offerings its customers actually want. It can then use that data to design the back office systems actually required to support those rate offerings, and thereby minimize the capital investment risk associated with those systems.

Q. PLEASE DISCUSS THE SMT AS WELL AS THE BILL IMPLICATIONS OF THIS RECOMMENDED DEPLOYMENT SCHEDULE.

A. Under this deployment a single SMT charge would apply to all customers in order to recover the costs of deploying the smart meters and any necessary investment in the communication network. The Company would calculate a separate additional charge to recover the cost of in home displays from those customers who receive one.

The Company is in the best position to prepare detailed estimates of the cost, rate and bill implications of this recommended deployment schedule**.** In Exhibit___(JRH-14) I provide my order of magnitude estimates of the key cost, rate and bill implications for the initial years of this fourth alternative schedule based upon the Company's workpapers. These estimates assume the Company can justify its proposed investments in the communication network through 2012.

The projected costs of the recommended schedule are shown on page 1 of Exhibit___(JRH-14). The projected SMT charges for the recommended schedule are shown on page 2 of Exhibit__(JRH-14). The SMT charge for a residential customer would be approximately $2 per meter per month for residential customers resulting in

annual bill of approximately $24. This amount is consistent with the bill impact of the EE&C Plan charge.

IV. CONCLUSIONS AND RECOMMENDATIONS

Q. PLEASE SUMMARIZE YOUR CONCLUSION REGARDING ALLEGHENY POWER'S PROPOSED ALTERNATIVE DEPLOYMENT SCHEDULES.

A. The Company's alternative deployment schedules are not reasonable. They do have some attractive features, but overall neither proposed alternative schedule is a reasonable and prudent approach to meeting the goals of Pennsylvania Act 129 with respect to deploying smart meter technology and supporting reductions in peak load and annual energy consumption.

Q. PLEASE SUMMARIZE YOUR RECOMMENDATION REGARDING ALLEGHENY POWER'S PROPOSED ALTERNATIVE DEPLOYMENT SCHEDULES.

A. I recommend that the Commission not approve either alternative deployment schedule. Instead, I recommend that the Commission require the Company to implement the fourth alternative deployment schedule that I set forth above.

Q. **DOES THIS CONCLUDE YOUR SUPPLEMENTAL DIRECT TESTIMONY?**

A. Yes.

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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition of West Penn Power Company	:	
d/b/a Allegheny Power For Expedited	:	DOCKET NO. M-2009-2123951
Approval of its Smart Meter Technology	:	
Procurement and Installation Plan	:	

EXHIBITS TO THE

SUPPLEMENTAL

DIRECT TESTIMONY

of

J. RICHARD HORNBY

On behalf of:

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

March 2, 2010

LIST OF EXHIBITS

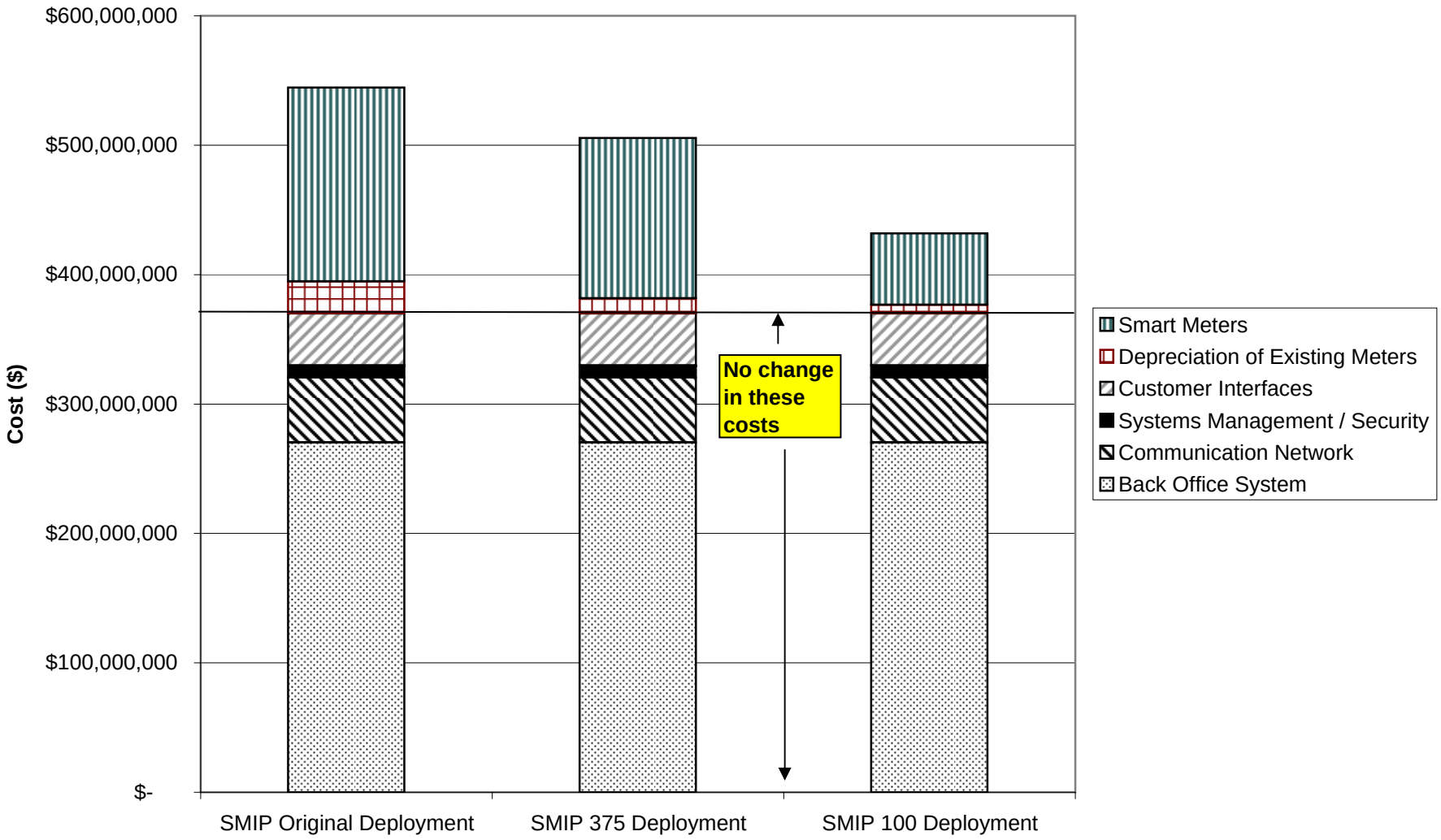
Allegheny Power - Original, 375,000, and 100,000 Deployment Schedules

Deployment Scenarios	SMIP Components		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	Number	Name										
All	4	Back Office System (CIS, MDMS, ESB)										
	5	Customer Interface										
	6	Systems Management and Security										
	3	Communication Network (LAN, WAN)										
Original Deployment	1	IHDs	725,000									
	2	Smart Meters	93,100	310,000	231,000	87,200	3,700					
375,000 meter deployment	1	IHDs	60,000 displays + 30,000 PCTs									
	2	Smart Meters	59,500	205,500	159,500	68,200	58,075	58,075	58,075	58,075		
100,000 meter deployment	1	IHDs	100,000 displays + 30,000 PCTs									
	2	Smart Meters	15,000	60,000	35,000	15,000	15,000	117,000	117,000	117,000	117,000	117,000

SOURCES: Ahr Direct Testimony, Exhibit JCA-2, 8-28-09; Ahr Supplemental Direct Testimony, 01-29-10

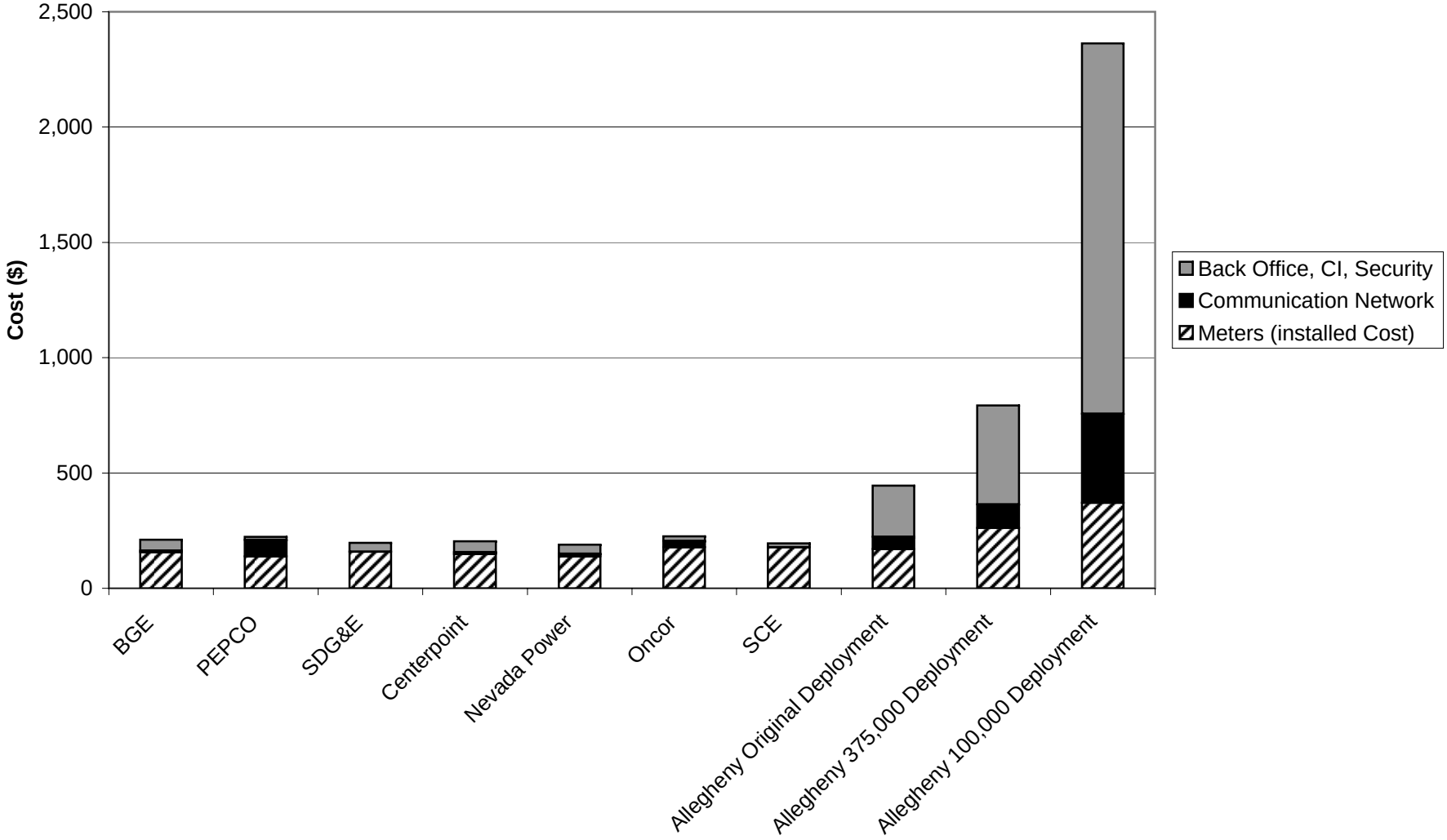
	Proposed SMT Surcharge ($ per month), Schedule 10 - Residential, for June 2013 - May 2014							
Charges		Original Deployment	375,000 Deployment			100,000 Deployment		
Applies to		All Customers	Customers with SM and IHD	Customers with SM	Customers without SM	Customers with SM and IHD	Customers with SM	Customers without SM
# Customers		725,000	60,000	375,000	350,000	100,000		625,000
SURCHARGES								
Tier I	smart meter (SM) and IHD		$7.93	$7.93	$7.93	$8.23	$8.23	$8.23
Tier 2	Incremental amount for smart meter		$1.93	$1.93	N/A	$2.35	$2.35	N/A
Incremental	Incremental amount for opt-in IHD		$3.96	N/A	N/A	$3.86	N/A	N/A
Total		$15.77	$13.82	$9.86	$7.93	$14.44	$10.58	$8.23
	SOURCE: Valdes, Supplemental Direct Testimony, Exhibit REV-1							

Total Costs of Smart Meter Plan Through 2014, Excluding IHDs - Original and Alternative Deployment Schedules



Total Costs of Original And Alternative Deployment Schedules for Smart Meter Plar						
System Component	Description	Through 2014			CHANGE vs AUGUST 2009	
		SMIP Original Deployment	SMIP 375 Deployment	SMIP 100 Deployment		
COSTS						
4	Back Office System	$ 270,440,823	$ 270,440,823	$ 270,440,823	0%	0%
3	Communication Network	$ 50,204,252	$ 50,204,252	$ 50,204,252	0%	0%
6	Systems Management / Security	$ 9,098,250	$ 9,098,250	$ 9,098,250	0%	0%
5	Customer Interfaces	$ 40,276,889	$ 40,276,889	$ 40,276,889	0%	0%
	Depreciation of Existing Meters	$ 24,603,754	$ 11,594,292	$ 6,688,124	-53%	-73%
2	Smart Meters	$ 149,861,473	$ 124,060,559	$ 55,152,480	-17%	-63%
Total		$ 544,485,440	$ 505,675,064	$ 431,860,817	**-7%**	**-21%**
SAVINGS						
	Distribution Service Benefits	$ (30,042,582)	$ (18,323,004)	$ (477,266)	**-39%**	**-98%**
	Benefis as percent of Costs	5.5%	3.6%	0.1%		
UNIT TOTAL COSTS						
	Meters Installed	725,000	375,000	100,000		
	Cost per meter Installed	$ 751	$ 1,348	$ 4,319		
Note	Travel Expenses have been added to Back Office System costs					
Source	Workpapers to Exhibit___(REV-1)					

Unit Capital Costs ($ per Meter Installed) of Smart Meter Projects of Various Utilities and of Allegheny Power through 2014 under Original and Alternative Deployment Schedules

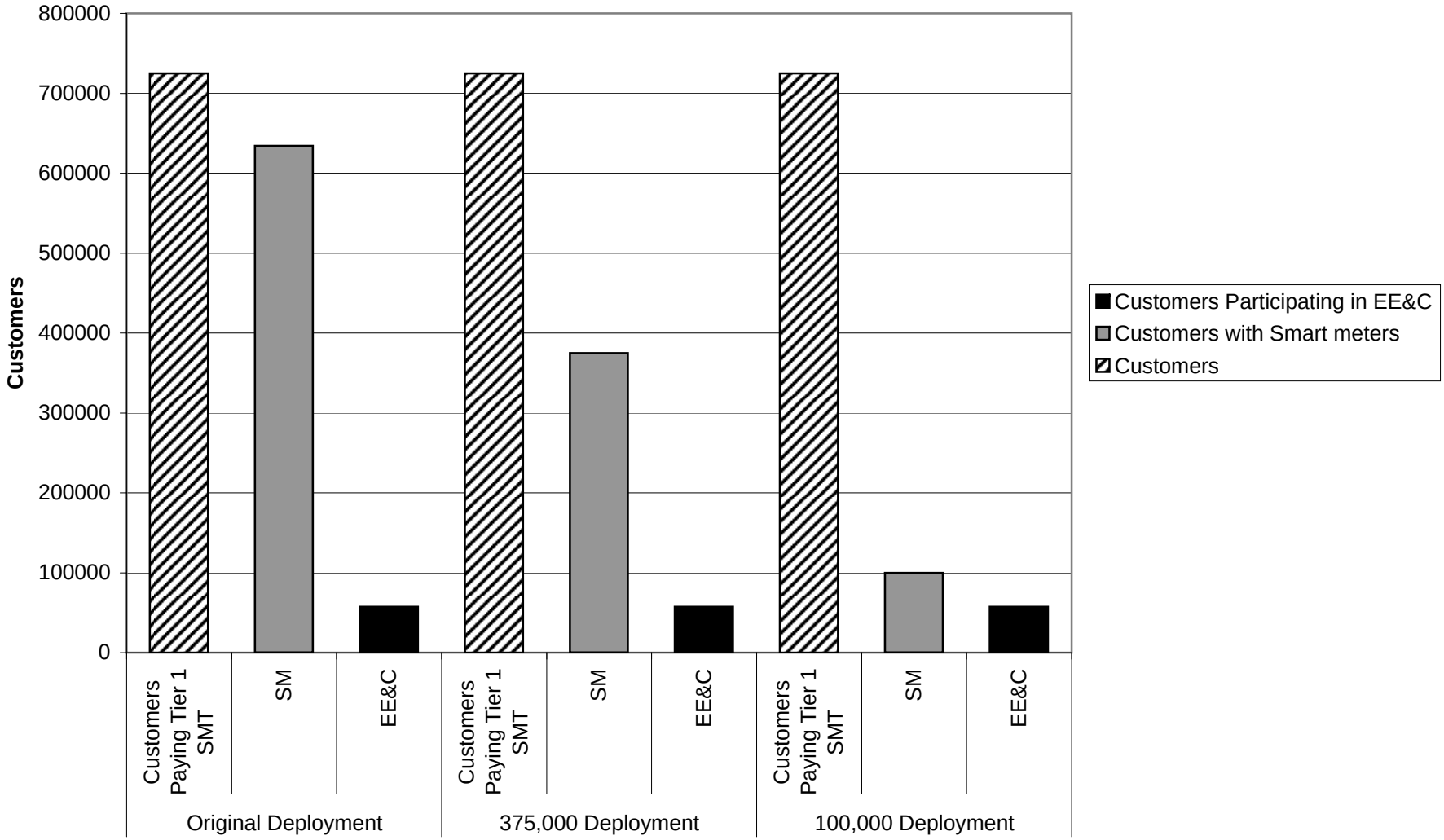


Capital costs of smart meter systems, excluding IHDs, expressed as $ per meter installed

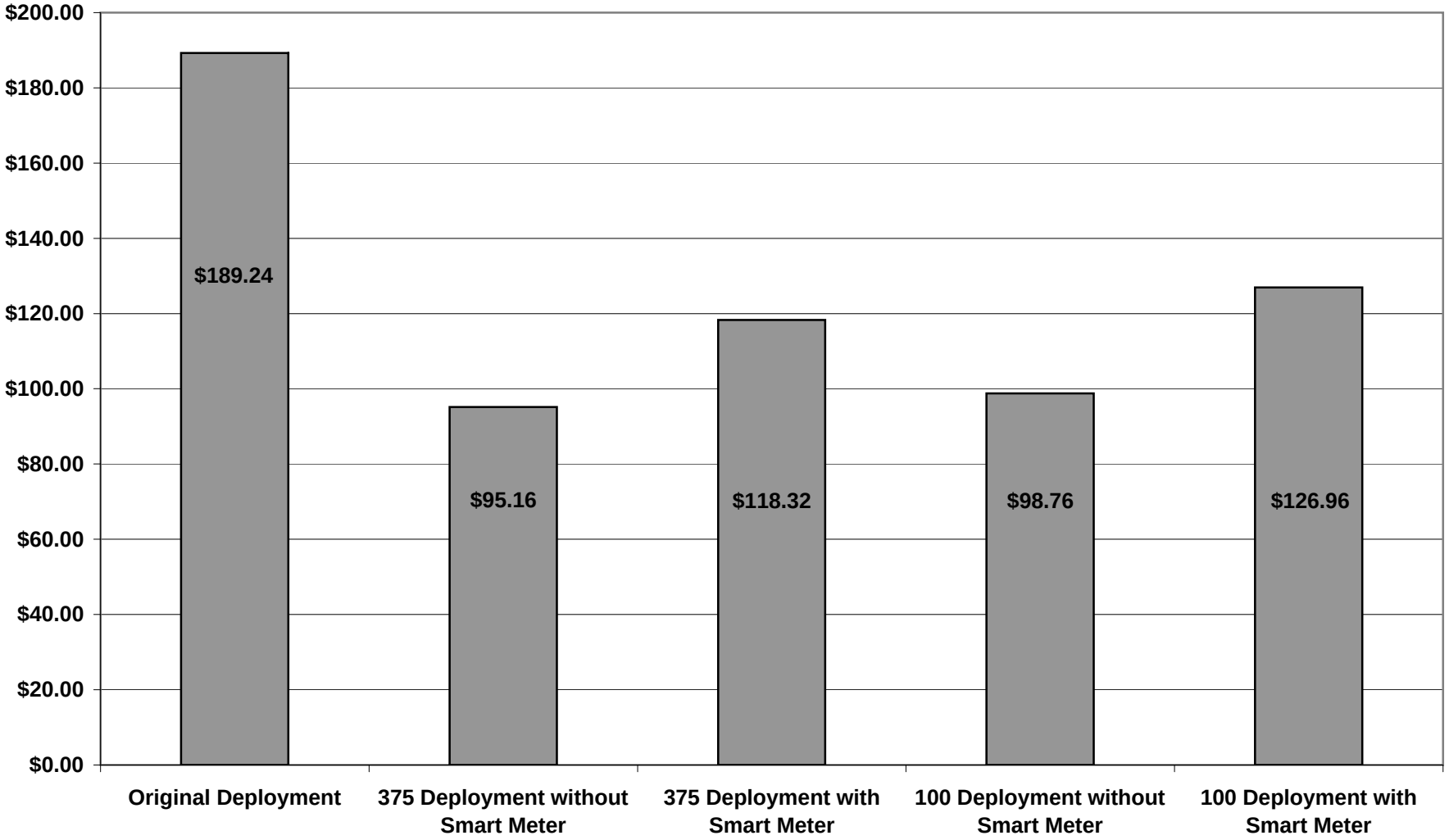
Utility	BGE	PEPCO	SDG&E	Centerpoint	Nevada Power	Oncor	SCE	Allegheny Original Deployment	Allegheny 375,000 Deployment	Allegheny 100,000 Deployment
Customers per Square Mile	913	891	561	480	207	111	106	59	31	8
Capital costs ($ per meter installed)										
Meters (installed Cost)	157	138	158	148	138	178	177	169	261	371
Communication Network	7	71	0	8	11	27	0	53	103	386
Back Office, CI, Security	47	14	39	47	40	20	18	222	429	1,607
Total	**258**	**238**	**237**	**250**	**189**	**244**	**213**	**613**	**921**	**2,796**

* The capital costs for the Allegheny deployment schedules reflects the allocation of 48% of CIS costs to its other operating companies

Projected Deployment of Meters under SMIP in 2014 versus Projected Participation in EE&C Plan Programs and Rate Offerings Enabled by Smart Meters



Impact of Proposed SMT on Annual Bills of Residential Customers for June 2013 - May 2014 under Original and Alternative Deployment Schedules



Impact of Allegheny Power Proposed SMT Surcharge on Residential Customer at 500 kWh/month in 2014

Customer Charges ($/month) - Residental Rate Schedule	Existing Rates ($/month)	SMT Impact	
		$/month	% impact on customer charge
Existing	$5.00		
Original Deployment		$15.77	315%
375 Deployment without Smart Meter		$7.93	159%
375 Deployment with Smart Meter		$9.86	197%
100 Deployment without Smart Meter		$8.23	165%
100 Deployment with Smart Meter		$10.58	212%

Annual Bills of Residential Customers in 2013	Annual Bill at Existing Rates	SMT Impact	
		$/year	% impact on annual bill of customer using 500 kWh/month
Existing	$557.46		
Original Deployment		$189.24	34%
375 Deployment without Smart Meter		$95.16	17%
375 Deployment with Smart Meter		$118.32	21%
100 Deployment without Smart Meter		$98.76	18%
100 Deployment with Smart Meter		$126.96	23%

Sources: Workpaper to Exhibit JRH-6, Supplemental Testimony of Valdes, Exhibit REV-1

Fourth Alternative - Deploy 100,000 Meters and Communication Network through 2012 - Recover from all Ratepayers by Rate Class

Capital ($000)	2009	2010	2011	2012	2013	2014	TOTAL
Smart Metering & Infrastructure	$ 2,500	$ 17,616	$ 40,133	$ 21,667	$ 3,068	$ 3,000	$ 87,984
CIS	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Subtotal	$ 2,500	$ 17,616	$ 40,133	$ 21,667	$ 3,068	$ 3,000	**$ 87,984**

O&M ($000)	2009	2010	2011	2012	2013	2014	TOTAL
Smart Metering & Infrastructure	$ 0	$ 4,945	$ 8,407	$ 8,151	$ 2,503	$ 2,785	$ 26,791
Smart Metering & Infrastructure Benefit	$ 0	$ (5)	$ (54)	$ (110)	$ (142)	$ (166)	$ (477)
CIS	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
CIS Benefits	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Depreciation of Existing Meters	$ 0	$ 851	$ 1,459	$ 1,459	$ 1,459	$ 1,459	$ 6,688
Subtotal	$ 0	$ 5,791	$ 9,813	$ 9,499	$ 3,820	$ 4,078	**$ 33,002**
Total ($000)	$ 2,500	$ 23,407	$ 49,946	$ 31,166	$ 6,888	$ 7,078	**$ 120,986**

Fourth Alternative - Deploy 100,000 Meters and Communication Network through 2012 - Recover from all Ratepayers by Rate Class

Tariff Classification	June 2010 thru May 2011	June 2011 thru May 2012	June 2012 thru May 2013	June 2013 thru May 2014
SMT Surcharge				
Sch 10	1.84	2.42	2.36	1.91
Schs 20, 22, 23 & 24	1.78	2.36	2.30	1.85
Schs 30, 40, 41, 44, 46, 86 & Tariff 37	1.64	2.22	2.16	1.71
Street Lighting	-	-	-	-
Incremental amount for opt-in IHD				
Any eligible customer	$ 3.86	$ 3.86	$ 3.86	$ 3.86

Allegheny Power Responses to Selected Data Requests

OFFICE OF CONSUMER ADVOCATE SET I
PETITION OF WEST PENN POWER COMPANY D/B/A ALLEGHENY POWER FOR EXPEDITED APPROVAL OF ITS SMART METER TECHNOLOGY PROCUREMENT AND INSTALLATION PLAN
DOCKET NO. M-2009-2123951

QUESTION NO. 24:

At what point in the roll-out of smart meters, technologies, and related pricing and demand-response programs would the Company have to move all customers to a new meter data management system and related back-office systems (e.g. billing)? Please explain the options the Company has with respect to moving to such new systems.

RESPONSE: Sponsored by David Womby

Ideally, Allegheny Power would utilize the MDMS at the onset of Smart Meter deployment. However, the time frame to install an MDMS and the timeframe to install the quantity of Smart Meters needed by May, 2012 to ensure attainment of the Demand Response target require that both be done simultaneously. AP will manually read any deployed Smart Meter until the MDMS is operational.

The Company will have to move all its customers to the Meter Data Management System (MDMS) and the new Customer Information System (CIS) that produces bills in February 2011. The Company need to move to the new CIS to support Time Of Use rates and Real Time Pricing which are called for as part of Act 129 and which the Company is legislated to file with the PUC by January 2011. To be cost-effective, the Company will move all customers to the MDMS, whether the customer has a Smart Meter or not, at the same time. This will simplify the feeding of usage data into the CIS. The Company does not consider that it has any other options open to it that comply with Act 129 or are cost-effective.

Response: **The 100k smart meter deployment is an opt-in option. Smart meter deployment under this scenario would be to customers that request a smart meter, customers that request to participate in a program or rate offerings that relies on a smart meter or to customers that request service due to new construction. Tier II of the SMT Surcharge would be applied to customers who have received a smart meter.**

4. Smart Meter Solution Architecture. Supplemental Testimony of Mr. Ahr, page 12. Please confirm that Allegheny Power could use the back office systems, customer interface and systems management components of its Smart Meter Solution Architecture to support deployment of smart meters by its regulated utility companies in Maryland, West Virginia and Virginia. *(per informal technical conference Feb 11)*

ANSWERED BY: John C. Ahr
POSITION: Senior Consultant

Response: **The Company has no plans nor has been mandated to deploy smart meters in other jurisdictions other than Pennsylvania. In the event that changes, the requirements stemming from those plans or mandates would be reviewed to determine how closely they align with the Smart Meter requirements of Act 129. It is possible that components of Allegheny's Pennsylvania Smart Meter Solution Architecture solution could be used to further support the deployment of smart meters in other jurisdictions to the extent those requirements are the same or similar. Since no plans or mandates currently exists, it is premature for the Company to conclude that it could use the back office systems, customer interface and systems management components of its Pennsylvania Smart Meter Solution Architecture to support deployment of smart meters by its regulated utility companies in Maryland, West Virginia and Virginia.**

5. Participation in EE&C/DR programs and rate offerings that rely on installation of smart meters. Supplemental Testimony of Mr. Miller:

   a. Please provide the Company's contingency plan in the event it is unable to attract the number of participants assumed in its EE&C/DR Plan for mid-2012 for each program and rate offering listed on page 5.

ANSWERED BY: Edward C. Miller
POSITION: General Manager Customer Program Management

Response: **The Company plans to revise its EE&C Plan with input from stakeholders during the annual review process or at other times based on actual performance of the Plan, EE&C programs and measures in order to best achieve all requirements of Act 129. This includes the programs and rate**

offerings listed on page 5 and will include the actual participation of the programs and rate offerings.

b. Please indicate where its EE&C/DR Plan explains that the Company will need to attract 100,000 participants to its EE&C/DR Plan programs and rate offerings by mid-2012 in order to have 60,000 actively participating in these programs, per page 6, lines 2 to 13.

ANSWERED BY: Edward C. Miller
POSITION: General Manager Customer Program Management

Response: **Section 3 of the EE&C Plan includes the approximate 60,000 customers concurrently participating in the programs and rate offerings that rely on or are enabled by smart metering infrastructure. The EE&C Plan does not include meter deployment which was included as part of the SMIP. The 100,000 alternate deployment scenario presented for the SMIP introduces the requirement for needing 100,000 subscribers in order to reasonably achieve the level of concurrent participation in the programs and rate offerings, due to customer attrition, customer event opt-out and unsuccessful communications to initiate customer participation in events.**

c. Please provide all analyses prepared by, or for the Company, to support the statement on page 8, lines 18 to 20.

ANSWERED BY: Edward C. Miller
POSITION: General Manager Customer Program Management

Response: **The Company has provided OCA with the worksheets for all programs and rate offerings that rely on smart meters which provide the projected participation rates. The sum of the participation across all programs and rate offerings that rely on or are enabled by smart meters is approximately 60,000 customers and is based on approximately 375,000 customers having smart meters.**

d. Please provide all analyses prepared by, or for the Company, to support its position that it will be able to attract 60,000 participants to its EE&C/DR Plan programs and rate offerings by mid-2012 if each participant has to voluntarily pay for an IHD.

ANSWERED BY: Edward C. Miller
POSITION: General Manager Customer Program Management

Response: **The Company has not completed this additional analysis. This position is based on the Customer having the opportunity for benefits that exceed the additional cost associated with the in-home display. Please refer to the**

testimony of Company Witness Ethan Cohen provided in this proceeding which provides estimates of the customer benefits of smart meters.

e. Please provide all analyses prepared by, or for the Company, to support its assumption that 100,000 customers will voluntarily opt-in to pay for a smart meter and to participate in the eight EE&C/DR programs and rate offerings that rely on installation of smart meters, per Mr. Miller's testimony on page 8, line 20 to page 9, line 5.

ANSWERED BY: Edward C. Miller
POSITION: General Manager Customer Program Management

Response: **The Company has not completed this additional analysis. This position is based on the Customer having the opportunity for benefits that exceed the additional cost associated with the smart meter. Please refer to the testimony of Ethan Cohen provided in this proceeding which provides estimates of the customer benefits of smart meters.**