BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Joint Petition of Metropolitan Edison Company, Pennsylvania Electric Company and Pennsylvania Power Company for Approval of Smart Meter Technology Procurement and Installation Plan	:	Docket No.	M-2009-2123950

DIRECT TESTIMONY

of

J. RICHARD HORNBY

on behalf of:

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

October 21, 2009

DIRECT TESTIMONY OF J. RICHARD HORNBY

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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. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?

A. I am testifying on behalf of the Pennsylvania Office of Consumer Advocate (OCA).

Q. PLEASE DESCRIBE SYNAPSE ENERGY ECONOMICS.

A. Synapse Energy Economics (Synapse) is a research and consulting firm specializing in energy and environmental issues, including: electric generation, transmission and distribution system reliability, market power, electricity market prices, stranded costs, efficiency, renewable energy, environmental quality, and nuclear power.

Q. PLEASE SUMMARIZE YOUR WORK EXPERIENCE AND EDUCATIONAL BACKGROUND.

A. I am a consultant specializing in planning, market structure, ratemaking, and gas supply/fuel procurement in the electric and gas industries. Over the past twenty years, I have presented expert testimony and provided litigation support on these issues in approximately 100 proceedings in over thirty jurisdictions in the United States and Canada. Over this period, my clients have included staff of public utility commissions, state energy offices, consumer advocate offices and marketers.

Prior to joining Synapse in 2006, I was a Principal with CRA International and, prior to that, Tabors Caramanis & Associates. From 1986 to 1998, I worked with the Tellus Institute (formerly Energy Systems Research Group), initially as Manager of the Natural Gas Program and subsequently as Director of their Energy Group. Prior to 1986, I was Assistant Deputy Minister of Energy for the Province of Nova Scotia.

I have 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. I have attached my resume to this testimony as Exhibit___(JRH-1).

Q. PLEASE SUMMARIZE YOUR EXPERIENCE WITH THE ECONOMICS OF, AND RATEMAKING FOR, ENERGY EFFICIENCY AND DEMAND RESPONSE, INCLUDING DEMAND RESPONSE ENABLED BY ADVANCED METERING INFRASTRUCTURE (AMI) SUCH AS THE SMART METERING INFRASTRUCTURE PROPOSED BY THE FIRSTENERGY COMPANIES.

A. My experience with energy efficiency measures and policies began over thirty years ago as a project engineer responsible for identifying and pursuing opportunities to reduce energy use in a factory in Nova Scotia. Subsequently, in my graduate program at MIT, I took several courses on energy technologies and policies, and prepared a thesis analyzing federal policies to promote investments in energy efficiency. After MIT, I spent several years with the government in Nova Scotia, during which time I administered a provincial program to promote energy conservation in the industrial sector and later included energy conservation in all sectors as part of energy plans developed for the province.

Since 1986, as a regulatory consultant I have helped review and prepare numerous integrated resource plans in the gas and electric industries, and testified regarding cost allocation and rate design. During the past several years I have led projects to estimate the avoided costs of electricity and natural gas in New England for a coalition of efficiency program administrators. In addition I have reviewed the economics of demand response, and of AMI proposals in New Jersey, Maine, the District of Columbia and Pennsylvania. I have testified regarding the alignment of utility financial incentives and

rates with the pursuit of energy efficiency in proceedings in North Carolina, South Carolina, Indiana and Minnesota.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The OCA retained Ms. Nancy Brockway and myself to assist in its analysis of the Smart Meter Technology Procurement and Installation Plan (SMIP or Smart Meter Plan) filed jointly by Metropolitan Edison Company, Pennsylvania Electric Company, and Pennsylvania Power Company (collectively First Energy Companies) on August 14, 2009. The purpose of my testimony is to discuss the policy implications of the Companies' SMIP as well as various ratemaking issues associated with its proposal for cost recovery. Ms. Brockway addresses various analyses that the FirstEnergy Companies should conduct during the initial phase of their SMIP.

II. SUMMARY

Q. PLEASE SUMMARIZE THE FIRSTENERGY COMPANIES' PROPOSED SMART METER PLAN AND COST RECOVERY.

A. The FirstEnergy Companies have proposed a Smart Meter Plan consisting of a planning stage and a deployment stage. They refer to these two stages as an "Assessment Period" and a "Deployment Plan" respectively. During the two year Assessment Period the Companies will assess needs, identify and quantify potential benefits as well as develop proposed approaches to technology and deployment. At the end of the Assessment Period they will file a proposed Deployment Plan with the Commission which will include their proposed approach, projections of its costs and benefits, and a proposal for cost recovery. Upon approval of the Deployment Plan, the Companies will begin full scale deployment of smart metering across their three service territories.

The FirstEnergy Companies have proposed a combined budget of $29.5 million to cover the costs of their proposed activities during the Assessment Period, of which only $2.5 million is for meters. They propose recovering those costs through a new a "Smart Meter Technologies (SMT-C) Rider for each Company. They are proposing that the SMT-C be applied as customer charge, in $ per meter per month.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS REGARDING THE PROPOSED SMART METER PLAN.

A. My primary conclusion is that the Companies' proposed Smart Meter Plan is reasonable. However, it is important that FirstEnergy Companies understand that they will be required to demonstrate that their proposed Deployment Plan is the most cost-effective approach available to them for meeting the goals of Pennsylvania Act 129 with respect to deploying smart meter technology and supporting reductions in peak load and annual energy consumption.

Based upon those two conclusions, I recommend that the Commission approve the Companies' proposed Smart Meter Plan. I further recommend that the Commission clearly indicate that its decision is to be interpreted as approval of the planning process, timeline and milestones proposed in the SMIP for the Assessment Period and not as approval of any specific decisions that management of the Companies may make during that Period.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS REGARDING THE PROPOSED COST RECOVERY.

A. In their Deployment Plan the Companies will have the opportunity to propose an assignment and/or allocation of the costs they expect to incur during the Deployment Period, and specific charges to collect those costs, based upon a cost of service ('COS')

study and an analysis of bill impacts. Until that time, it is reasonable for the Companies to allocate Assessment Period costs using a simple allocator consistent with the anticipated benefits which are driving, or causing, the implementation of AMI and to collect those costs through a charge consistent with the categories of those costs.

My conclusion is that the cost allocation and rate design aspects of the Companies' proposed SMT-C Rider must be modified in order for the costs incurred during the Assessment Period to be allocated in a manner consistent with principles of cost causation and rate design. I recommend that the Commission reject the Companies' proposal to allocate their Assessment Period costs according to number of customer and to recover all costs through a fixed customer charge. Instead, the Companies should allocate their Assessment Period costs according to a composite allocation factor based upon energy and demand, and should recover those costs through a delivery charge (cents per kwh) for distribution service.

In addition, I recommend that the Commission require the Companies to establish a procedure for periodically updating the equity return they use to calculate the SMT-C based on the most recent "Report on the Quarterly Earnings of Jurisdictional Utilities" and to modify the proposed SMT-C tariff to credit ratepayers for any savings in distribution costs that result from their Plan.

III. POLICY IMPLICATIONS OF PROPOSED SMIP

Q. PLEASE SUMMARIZE THE COMPANIES' SMART METER PLAN.

A. The FirstEnergy Companies are proposing a Smart Meter Plan that consists of a planning stage and a deployment stage. They refer to these two stages as an "Assessment Period"

and a "Deployment Plan" respectively. The Companies are proposing to use the two year Assessment Period to assess needs, identify and quantify potential benefits as well as develop proposed approaches to technology and deployment. At the end of the Assessment Period they will file a proposed Deployment Plan with the Commission which will include their proposed approach, projections of its costs and benefits; and a proposal for cost recovery. Upon approval of the Deployment Plan the Companies would begin full scale deployment of smart metering across their three service territories.

Q. IS THE COMPANIES' PROPOSED SMART METER PLAN REASONABLE?

A. Yes. The approach that the Companies' have proposed in their Smart Meter Plan is reasonable. The Companies estimate that the total cost of full-deployment of AMI in their three service territories may exceed $325 million. Given the magnitude of that potential investment, the fact that there are many approaches to implementing AMI and the uncertainties around future costs and benefits of full-deployment, it is reasonable for the Companies to use the assessment Period to determine the most cost-effective approach for each of their particular service territories.

Q. WHAT OBLIGATION DO THE FIRSTENERGY COMPANIES HAVE WITH RESPECT TO IMPLEMENTING FULL DEPLOYMENT OF AMI AND/OR DYNAMIC PRICING UNDER ACT 129?

A. From a policy perspective, my understanding is that Act 129 establishes important energy and environmental goals for Pennsylvania, including targets for reductions in annual energy consumption and for reductions in peak load. The Act also requires electric distribution companies (EDCs), such as the FirstEnergy Companies, to deploy smart meter technology. Thus, the Act establishes general policy goals but leaves the details of the strategies for achieving those goals to be developed under the regulatory oversight of the Commission.

This approach is consistent with sound public and ratemaking policy. First, there are many different possible approaches to deploying a Smart Meter Plan. Second, Pennsylvania utilities provide electricity to service territories that differ widely in terms of key attributes such as the composition of their customer base, the costs of distribution service, the costs of generation service and the opportunities for reducing those costs through efficiency and demand response. Therefore, it is not surprising that Act 129 has placed the onus on each utility to develop a Smart Meter Plan in a manner that is most cost-effective for its specific service territory.

Under this approach the FirstEnergy Companies, and the other EDCs, have to demonstrate to the Commission that their proposed Smart Meter Plans are the most cost-effective approaches for their specific service territories. In other words, I believe that the FirstEnergy Companies must demonstrate to the Commission that their proposed Smart Meter Plan is the most cost-effective approach for meeting the policy objectives of Act 129 out of the range of possible alternative approaches available to them. Thus, from a policy perspective, there is nothing in Act 129 which exempts the Companies from bearing the burden of demonstrating to the Pennsylvania Public Utility Commission (PUC) that their specific proposal will satisfy the statutory obligation to provide service at just and reasonable rates.

Q. DO OTHER UTILITIES HAVE LONG-TERM EXPERIENCE WITH THE PERFORMANCE AND ECONOMICS OF AMI AND DYNAMIC PRICING ON A SYSTEM-WIDE OR FULLY DEPLOYED BASIS?

A. No. Utilities have conducted a number of pilot projects testing AMI and dynamic pricing on a limited basis. However, it is only in the last few years that several United States utilities have received regulatory approval to deploy AMI and dynamic pricing tariffs on

their systems on a wide scale basis. In fact, most of those utilities are currently in the process of completing that deployment.

The absence of robust empirical evidence regarding the performance and economics of AMI and dynamic pricing on a system-wide basis over time results in considerable uncertainty regarding both long-term technical performance and the magnitude of peak load reductions that will actually be sustained in the long-term in response to dynamic pricing approaches such as peak time rebates (‘ PTR’) or critical peak pricing (‘CPP’). In an effort to help reduce that uncertainty, and help stimulate the economy, the recent federal stimulus bill, i.e., the American Recovery and Reinvestment Act of 2009, H.R. 1, 11th Congress (2009) (ARRA) approved appropriations to fund Smart Grid Demonstration Projects as well as a Smart Grid Investment Matching Fund to help support deployment of AMI by utilities who meet the grant selection criteria.

Q. HAS THE NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS (NARUC) EXPRESSED CONCERNS REGARDING THE POTENTIAL FOR ADVERSE RATE AND BILL IMPACTS FROM TOO RAPID OF A TRANSITION TO FULL DEPLOYMENT OF AMI?

A Yes. In his March 3, 2009 testimony to the United States Senate Committee on Energy and Natural Resources, New Jersey Commissioner Frederick Butler, President of NARUC, expressed a number of concerns regarding a rapid move to full deployment of Smart Grid systems. In that testimony, President Butler makes a number of important points regarding consideration of ratepayer reaction:

> *I know the Smart Grid can change how utilities oversee their networks and improve reliability. I know that, in the end, consumers could have greater control over their usage and have the potential to lower their bills. I also know, however,*

that if we do not do this correctly, if we move too quickly and promise too much we can endanger our coming close to meeting any of those lofty aspirations.

But we do need to be careful. Right now, we are selling the Smart Grid as a means of empowering consumers to lower their usage and, correspondingly, their energy bills. While this may ultimately be the case, we must learn our lesson from the restructuring experience before heading down this path. The promise of restructuring was that consumers would save money by shopping for power….

The problem here was not restructuring per se, but it was the way it was sold to consumers. Instead of determining the best way to move forward deliberatively, we jumped right in, with the promise of lower rates to follow. Because of this approach, and because of the results, the concept of restructuring has taken a significant hit.

The concern that many of my colleagues are trying to resolve is that consumers are convinced that the Smart Grid will only raise their rates with no discernable benefits. In a high-priced environment, some or perhaps most consumers see advanced metering rollouts as just one more headache and budget buster and are particularly scared that utilities and vendors will keep raising rates as the technology changes.

We have to remember that the Smart Grid will only achieve its vast potential if consumers embrace it.

Even if there were no uncertainty associated with the projected benefits of the Smart Grid, Commissioner Butler's comments indicate that it is essential to consider the impacts on ratepayers when assessing proposals for full deployment. Since there are, in fact, uncertainties regarding the projected benefits of AMI and dynamic proposals it is essential that the FirstEnergy Companies prepare a rigorous assessment.

Q. ARE THERE OTHER REASONS WHY UTILITIES SHOULD MAKE A GRADUAL TRANSITION TO FULL DEPLOYMENT OF AMI AND DYNAMIC PRICING?

A. Yes. There are several reasons why Pennsylvania utilities such as the FirstEnergy Companies should make a gradual transition to full deployment of AMI and dynamic pricing.

First, the installation of AMI and associated enabling of dynamic pricing, in and of themselves, do not reduce customer electricity use during peak hours or annually. Instead, actual reductions in peak load and annual consumption, and hence in annual electricity bills and environmental impacts associated with that physical consumption, will only be achieved if individual customers actually reduce their electricity consumption in response to dynamic prices in every period, year after year. There is still substantial uncertainty regarding residential customer responsiveness to dynamic pricing and price information in the long-term.

Second, deployment of AMI and dynamic pricing such as the Companies' proposed Smart Meter Plan primarily enable reductions in peak load rather than reductions in annual electricity consumption. Reductions in peak load are referred to as demand response (DR) while reductions in annual electricity consumption are referred to as energy conservation or energy efficiency (EE). DR alone has only limited impacts on

annual energy consumption and the annual environmental impacts associated with the generation of electricity to supply that annual consumption. Reductions in critical peak hours are important because they have a much higher economic value than reductions in other hours of the year. The high economic value is due to the ability of reductions in those hours to reduce capacity costs in addition to the high price energy in critical peak hours. However, significant new reductions in peak load can be achieved from many commercial and industrial (C&I) customers with no further deployment of AMI. Those C&I customers already have the interval meters and communication technology they need for demand response driven by dynamic pricing. Moreover, reductions in critical peak hours represent a relatively small portion of customer annual usage. EE measures, in contrast, not only lead to reductions in electricity consumption during critical peak hours, like DR, but also in all the other hours when electricity affected by that measure is being used.

Third, the timing and magnitude of the capacity costs avoided due to DR can be more difficult to estimate than the timing and magnitude of the electric energy costs avoided due to EE. For example, a 1 kWh reduction in electricity consumption from energy conservation or EE results in a corresponding immediate reduction in the quantity of electricity generated, after adjustments for system losses. That quantity of electricity generation is clearly avoided. In contrast, a 1 kW reduction in peak load from DR does not automatically produce a corresponding immediate reduction in the quantity of capacity being held to ensure reliable service for that load. Instead, decisions regarding the quantity of generation, transmission and distribution capacity needed for reliable service are made several years before the year in which the actual load occurs. Thus, to avoid capacity, it must be assured that the reduction in peak load will continue over their

long-term planning horizon. The fact that utilities and curtailment service providers have the ability to bid reductions in peak load into wholesale capacity markets in PJM and elsewhere has helped to reduce the uncertainty associated with projections of avoided wholesale generation capacity costs.

Q. WHAT TYPES OF POTENTIAL BENEFITS OF AMI AND AMI-ENABLED DYNAMIC PRICING SHOULD THE FIRSTENERGY COMPANIES IDENTIFY AND QUANTIFY DURING ASSESSMENT PERIOD?.

A. The First Energy Companies should use the Assessment Period to identify and quantify the major potential benefits of AMI and AMI-enabled dynamic pricing associated with the specific approach that they ultimately propose. They have stated their intention to prepare a detailed estimate of the projected benefits associated with the business plan they develop during the Assessment Period, as indicated in their responses to OCA data requests 1-7 through I -9. The quantification of those projected benefits is essential in order to demonstrate that their proposal is the most cost-effective reasonable approach relative to the range of other approaches available to them.

Potential benefits from AMI are typically savings in metering related capital costs and operating expense. The FirstEnergy Companies should have no problem estimating these savings. In addition, many proponents of AMI expect that it will enable utilities to improve the reliability of their distribution service. For example, they should be able to reduce the duration of outages by using data from the smart meters to identify their specific locations more rapidly. In addition, by installing monitors on key components of their system infrastructure, such as transformers, they should be able to improve the effectiveness of their preventive maintenance. The FirstEnergy Companies should

include their distribution planning and operations engineers in the identification and quantification of potential improvements in reliability that could be achieved via AMI.

Potential benefits from AMI-enabled dynamic pricing are more complex and require more analyses. These benefits depend upon projected reductions in peak demand (MW) and annual energy (MWh) by year expected to result from customer response to the dynamic pricing. Moreover, this estimation will likely need to be iterative as the quantity of reductions will be affected by the value of those reductions to ratepayers. To begin, the FirstEnergy Companies will need to:

- identify potential demand response programs and/or new rate offerings to enable with, and implement in conjunction with, its particular smart meter plan;
- estimate the number of customers by rate class likely to participate in each program or rate offering on a sustained basis; and
- estimate the average reduction in demand and energy per customer by rate class expected from each program or rate offering on a sustained basis.

In order to prepare these estimates the Companies may need to conduct market research to understand the usage characteristics of their residential customers and to review the programs and rate offerings implemented by comparable utilities. (It is important to find utilities that are comparable in terms of residential customer characteristics and value of reductions in demand).

Once the FirstEnergy Companies have an initial projection of reductions in demand and energy by rate class or customer segment by year, they can then proceed to estimate the value of those reductions in terms of avoided distribution service capital costs and avoided electricity supply costs. To estimate those values they will have to prepare a number of analyses, such as:

- Estimated savings in local transmission and/or distribution capital costs from delaying or downsizing investments because of reductions in demand. This will require a projection of these costs for a reference case in the absence of these reductions;
- Estimated savings in wholesale electric capacity costs that can be realized, explicitly through bidding into the PJM RPM, or implicitly due to reductions in peak demand and hence reductions in the quantity of capacity required;
- Estimated savings in wholesale electric energy costs that can be realized, explicitly through participation in the PJM energy market in peak hours, or implicitly due to reductions in purchases during peak hours due to reductions in peak demand; and
- Estimated savings in electricity supply costs due to the reductions in market prices for wholesale electric capacity and/or peak hour energy resulting from reductions in peak demand.

The last three sets of estimates will require a projection of the values of wholesale capacity and peak hour energy over the study period for the PJM zone in which the FirstEnergy Companies are located.

IV. RATEMAKING ISSUES ASSOCIATED WITH PROPOSED SMT-C SURCHARGE

Q. PLEASE SUMMARIZE THE COMPANIES' PROPOSAL FOR RECOVERING THE ASSESSMENT PERIOD COSTS OF THE SMART METER PLAN.

A. The FirstEnergy Companies have proposed a combined budget of $29.5 million to cover the costs of their proposed activities during the Assessment Period. This estimated budget

consists of $18.7 million for labor, $8.3 million for Information Technology and only $2.5 million for meters (Mills Direct, p.12).

The Companies are proposing to treat these as common costs which they will expense. The Companies propose to allocate these common costs among the Companies and their rate classes according to number of customers (response to OCA I- 33). They propose to recover those costs through a new SMT-C rider for each Company, which would be applied as a customer charge, i.e. in $ per meter per month. As such, it would be an unavoidable monthly fixed charge.

Q. IS THE PROPOSED SMT-C REASONABLE?

A. No. The SMT-C is not reasonable because the cost allocation and rate design underlying the proposed charge are not reasonable.

Q. PLEASE SUMMARIZE YOUR CONCERN REGARDING THE COMPANIES' PROPOSED ALLOCATION OF THESE REVENUE REQUIREMENTS AMONG THE THREE COMPANIES AND THEIR RATE CLASSES.

A. The FirstEnergy Companies consider the costs they will incur during the Assessment Period to be common costs. They are proposing to allocate these common costs based on the number of customers. However, the Companies have not demonstrated that this allocation is based upon cost causation. In fact, since these AMI related costs are being incurred, or "caused", primarily in anticipation of substantial savings in electricity supply costs they should be allocated in a manner that reflects those anticipated benefits. Allocating based on number of customers does not properly reflect the fact that the majority of the benefits are savings related to reductions in either demand or energy. Therefore the allocation factor should be based upon demand (kW), energy (kWh) or some combination of both.

Even if one were using a customer-related allocation factor, number of customers would not be appropriate because the cost of a meter varies by rate class. For example, a meter for a residential customer is less expensive than a meter for a C&I customer in one of the general service rate classes. If one were using a customer-related allocation factor, it should be a cost weighted factor that reflects the cost per meter by rate class as well as the number of customers per rate class.

Q. PLEASE SUMMARIZE YOUR CONCERN REGARDING THE COMPANIES' PROPOSAL TO APPLY THE SMT-C AS A CUSTOMER CHARGE.

A. The Companies' proposal to apply the SMT-C as a customer charge is not reasonable for the Assessment Period. As noted above, the Companies consider the costs it will incur to be joint and common costs rather than customer-related costs. There is no support for recovering costs that are classified as joint and common via a customer charge.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS REGARDING THE PROPOSED COST RECOVERY.

A. In their Deployment Plan the Companies will have the opportunity to propose an assignment and/or allocation of the costs they expect to incur during the Deployment Period, and specific charges to collect those costs, based upon a cost of service ('COS') study and an analysis of bill impacts. Until that time, it is reasonable for the Companies to allocate Assessment Period costs using a simple allocator consistent with the anticipated benefits which are driving, or causing, the implementation of AMI and to collect those costs through a charge consistent with the categories of those costs.

My conclusion is that the cost allocation and rate design aspects of the Companies' proposed SMT-C Rider must be modified in order for the costs incurred during the Assessment Period to be allocated in a manner consistent with principles of cost causation and rate design. I recommend that the Commission reject the Companies'

proposal to allocate their Assessment Period costs according to number of customer and to recover all costs through a fixed customer charge. Instead, the Companies should allocate their Assessment Period costs according to a composite allocation factor based upon energy and demand, and should recover those costs through a delivery charge (cents per kwh) for distribution service.

Q. PLEASE COMMENT ON THE RETURN ON EQUITY THAT THE COMPANIES PROPOSE TO USE TO CALCULATE THE SMT-C.

A. The Companies' are proposing to use a return on equity (ROE) of 10.1%. The Commission approved this rate for the Metropolitan Edison and Pennsylvania Electric Companies in a January 11, 2007 Order in their last base rate case. This is an acceptable initial rate. Going forward, I recommend that a procedure be developed so that an equity return based on the most recent "Report on the Quarterly Earnings of Jurisdictional Utilities" (Quarterly Earnings Report) prepared by the Bureau of Fixed Utility Services and released by the Commission could be used when the rate from the last base rate case is no longer representative of current conditions.

Q. **WILL THE SMT-C CREDIT CUSTOMERS WITH ANY SAVINGS IN DISTRIBUTION SERVICE OPERATING COSTS THAT MAY RESULT FROM ITS SMART METER PLAN**

A. No. The Companies' proposed tariff for the SMT-C makes no reference to crediting customers with savings in distribution service operating costs that result from its smart meter plan. The absence of this credit is likely due to the Companies' belief that there will not be any such savings during the Assessment Period. Nevertheless, the Commission should require the Companies to modify its tariff to include such text. For example the comparable PECO tariff states: *"Any reductions in operating expenses or*

avoided capital expenditures due to the Smart Meter Program will be deducted from the incremental costs of the Smart Meter Program to derive the net incremental cost of the Program that is recoverable. Such reductions shall include any reductions in the Company's current meter and meter reading costs."

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

A. Yes.

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EXHIBITS TO THE

DIRECT TESTIMONY

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J. RICHARD HORNBY

On behalf of:

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

October 21, 2009

James Richard Hornby

Senior Consultant
Synapse Energy Economics, Inc.
22 Pearl Street, Cambridge, MA 02139
(617) 661-3248 ext. 243 • fax: (617) 661-0599
www.synapse-energy.com
rhornby@synapse-energy.com

PROFESSIONAL EXPERIENCE

Synapse Energy Economics, Inc., Cambridge, MA. *Senior Consultant,* 2006 to present.
Analysis and expert testimony regarding planning, market structure, ratemaking and contracting issues in the electricity and natural gas industries.

Charles River Associates (formerly Tabors Caramanis & Associates), Cambridge, MA.
Principal, 2004-2006.
Senior Consultant, 1998-2004.
Provided expert testimony and litigation support in several energy contract price arbitration proceedings, as well as in electric and gas utility ratemaking proceedings in Ontario, New York, Nova Scotia and New Jersey. Managed a major productivity improvement and planning project for two electric distribution companies within the Abu Dhabi Water and Electricity Authority. Analyzed a range of market structure and contracting issues in wholesale electricity markets.

Tellus Institute, Boston, MA.
Vice President and Director of Energy Group, 1997–1998.
Presented expert testimony on rates for unbundled retail services in restructured retail markets and analyzed the options for purchasing electricity and gas in those markets.
Manager of Natural Gas Program, 1986–1997.
Prepared testimony and reports on a range of gas industry issues including market structure, unbundled services, ratemaking, strategic planning, market analyses, and supply planning.

Nova Scotia Department of Mines and Energy, Halifax, Canada; 1981–1986
Member, Canada-Nova Scotia Offshore Oil and Gas Board, 1983–1986
Member of a federal-provincial board responsible for regulating petroleum industry exploration and development activity offshore Nova Scotia.

Assistant Deputy Minister of Energy 1983–1986
Responsible for analysis and implementation of provincial energy policies and programs, as well as for Energy Division budget and staff. Directed preparation of comprehensive energy plan emphasizing energy efficiency and use of provincial energy resources. Senior technical advisor on provincial team responsible for negotiating and implementing a federal/provincial fiscal, regulatory, and legislative regime to govern offshore oil and gas. Directed analyses of proposals to develop and market natural gas, coal, and tidal power resources. Also served as Director of Energy Resources (1982-1983) and Assistant to the Deputy Minister (1981-1982.

Nova Scotia Research Foundation, Dartmouth, Canada, Consultant, 1978–1981
Edited Nova Scotia's first comprehensive energy plan. Administered government-funded industrial energy conservation program—audits, feasibility studies, and investment grants.

Canadian Keyes Fibre, Hantsport, Canada, Project Engineer, 1975–1977

Imperial Group Limited, Bristol, England, Management Consultant, 1973–1975

EDUCATION

M.S., Technology and Policy (Energy), Massachusetts Institute of Technology, 1979.
Thesis: "An Assessment of Government Policies to Promote Investments in Energy Conserving Technologies"

B.Eng. Industrial Engineering (with Distinction), Dalhousie University, Canada, 1973

EXPERT TESTIMONY AND LITIGATION SUPPORT (1987 to present)

Provided expert testimony and/or litigation support on planning, market structure, ratemaking and gas supply/fuel procurement in the electric and gas industries in approximately 100 proceedings in over thirty jurisdictions in the United States and Canada. List of proceedings available upon request.