ComEd Ex. 2.0

STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

COMMONWEALTH EDISON COMPANY	:	
	:	
Petition to approve an Advanced Metering	:	No. 09-
Infrastructure Pilot Program and associated tariffs	:	

Direct Testimony of

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TABLE OF CONTENTS

I. Executive Summary and Introduction

A. Witness Identification

Q. Please state your name and business address.

A. My name is Michael J. Meehan. My business address is 1919 Swift Drive, Oak Brook, Illinois 60523.

Q. By whom and in what position are you employed?

A. I am Vice President, AMI Operational Implementation for Commonwealth Edison Company ("ComEd").

B. Purposes of Direct Testimony

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to address several issues related to the deployment of the AMI Pilot. First, I address the number of AMI meters needed in the AMI Pilot and where they will be deployed. I also testify as to the retirement of the meters that are replaced. Second, I discuss the technical criteria needed for the AMI Information Technology. I also explain the integration of the AMI Information Technology into ComEd's current systems and the sending and receiving of data to and from the AMI meters. Third, I address the AMI Pilot timeline. Finally, I present the forecasted capital expenditures and Operating and Maintenance expenses that will be incurred as a result of the AMI Pilot.

C. Background and Qualifications

Q. What are your current duties and responsibilities?

A. As Vice President, AMI Operational Implementation, I have responsibility for all of the required business process changes, meter and network installations, and the business case validation for the AMI pilot project. I am also responsible for the information technology modifications for both the AMI Pilot and the AMI Customer Application Plan. In addition to these duties, I also have responsibility for the Regulatory Programs area.

Q. What was your earlier professional experience?

A. I have been employed by ComEd since 1979. During my employment, I have held various positions in the Information Technology Department, and have twenty-five years' experience in developing and supporting a wide variety of computer applications. From January 1998 through August 2004, I served as ComEd's Director of Customer Systems and Open Access, and was part of the leadership team that implemented Open Access for ComEd. From 2005 until the current year, I was the Director of Regulatory Programs for ComEd.

Q. What is your educational background?

A. I hold a Bachelor of Science in Mathematics and Computer Science from Loyola University of Chicago.

Q. Have you previously testified before the Illinois Commerce Commission ("Commission")?

A. Yes. I previously filed testimony on behalf of ComEd in Docket Nos. 99-0013, 99-0117, 00-0494, 01-0423, 05-0597, 06-0411, and 08-0532.

D. Summary of Conclusions

Q. Please summarize the conclusions in your direct testimony.

A. In brief, I conclude:

1. The installation of over 100,000 AMI meters in the I-290 Corridor of the Maywood Operating Center and the City of Chicago is necessary to achieve the identified goals of the AMI workshop process, including but not limited to operating costs savings, avoided energy purchases, AMI system costs, and improved service reliability. Further, the deployment of the AMI meters in the I-290 corridor is appropriate as it reflects the demographic and customer operations diversity of the ComEd service territory as a whole

2. It is more cost-effective to retire the basic watt-hour meters that are being removed than to re-test and re-stock the meters.

3. ComEd has developed an effective integration plan with respect to the AMI technology that will be installed on its system. Further, ComEd will be able to effectively receive data from and send data to the AMI meters.

4. If a Commission Order is entered in early to mid November 2009, ComEd can install the AMI meters and start collecting data beginning in March 2010.

5. ComEd estimated that the total pilot direct capital costs (excluding the Customer Applications Plan capital costs) are approximately $47,000,000 and Operating and Maintenance expenses are approximately $8,900,000.

II. Overview of AMI Pilot

Q. Please briefly describe the AMI Pilot.

A. Pursuant to Commission's Order in Docket No. 07-0566, the AMI Pilot is a significantly sized initial deployment of AMI meters in select areas of ComEd's service territory. The

pilot will allow ComEd and various other stakeholders to quantify the benefits of AMI, including but not limited to operating costs savings, avoided energy purchases, AMI system costs, opportunities for improved service reliability, and potential customer savings from the customer-side applications as discussed further in the direct testimony of Val R. Jensen and James C. Eber (ComEd Ex. 4.0)**.**

A. Number of AMI Meters to be deployed in Pilot

Q. What are AMI meters?

A. According to the Federal Energy Regulatory Commission, AMI (Advanced Metering Infrastructure) is defined as a metering system that records customer consumption (and other parameters) hourly or more frequently and that provides for daily or more frequent transmittal of measurements over a communication network to a central collection point. Please see the panel direct testimony of Richard D. O'Toole and David B. Doherty (ComEd Ex. 3.0) for a description of the capabilities of the AMI meters that will be installed as part of the AMI pilot.

Q. As part of the AMI Pilot program, how many of these meters will be installed?

A. ComEd proposes to replace approximately 141,000 existing meters in the Pilot locations. 100,500 meters will be installed in ComEd's Maywood Operating Center, a geographically compact area described later in my testimony. Additionally, 30,000 meters will be installed within the City of Chicago, and 10,000 meters will be installed in the City of Elgin, the municipality that won ComEd's Community Energy Challenge by submitting the best plan for testing and use of such meters. Finally, ComEd proposes to install 500 meters in the Village of Tinley Park in order to evaluate the ability of the AMI meters and technologies to facilitate municipal water meter reading. I will testify as to

the deployment of meters in ComEd's Maywood Operating Center, approximately 1,000 meters in the City of Chicago and 500 meters in the Village of Tinley Park. See the direct testimony of Ross C. Hemphill with respect to the selection of the City of Chicago and the Village of Tinley Park to participate in the AMI Pilot. See the direct panel testimony of Mr. Jensen and Mr. Eber for the selection of the City of Elgin to participate in the AMI Pilot.

Q. Why is it important to include over 100,000 meters as part of the Pilot?

A. It is necessary in order to conduct a reasonable evaluation of operational benefits and costs. Data will be provided, in part, from one contiguous footprint in the Maywood Operating Center that maintains demographics and customer operations characteristics close to the ComEd System average while providing for some diversity from the average. Further, by deploying meters in the other locations such as high rises, additional installation and operating data will be provided that will not necessarily be captured in the footprint.

B. AMI Project Location

Q. What was ComEd's goal in choosing a location for the AMI Pilot?

A. ComEd's goal in choosing where in its service territory to deploy the AMI Pilot was to select a location that is most representative of its service territory as a whole, matching it demographically and operationally since the results of the pilot need to be the basis for the full scale AMI business case update as part of this pilot.

Q. For the AMI Pilot, where will the meters be deployed?

A. ComEd proposes to deploy the AMI meters in the following locations:

- The "I-290 Corridor," contained in the Maywood Operating Center, which is composed of 9 towns, Bellwood, Berwyn, Broadview, Forest Park, Hillside, Maywood, Melrose Park, Oak Park, River Forest;
- The City of Chicago
- The City of Elgin
- The Village of Tinley Park

1. Selection of the I-290 Corridor

Q. Why are a majority of the meters being deployed in one operating center?

A. There are two main reasons. First, by concentrating a majority of the AMI meters in one operating center, data will be provided from one contiguous footprint that maintains demographics and customer operations characteristics close to the ComEd System average while providing for some diversity from the average. Second, the AMI technologies are economically and operationally designed for ubiquitous deployment approaches.

Q. What is an operating center?

A. ComEd's territory is broken down into nineteen operating centers primarily to support the operational nature of our business. ComEd has two centers in the City of Chicago, four large rural centers, and thirteen suburban centers.

Q. What initial criteria did ComEd use to determine the appropriate operating center within its service territory to deploy the AMI Pilot?

A. To determine the operating center that would meet this goal, ComEd developed three categories of criteria: demographics, customer operations, and Transmission and Distribution ("T&D").

Q. What criteria were considered for demographics?

A. The criteria established for the demographics category include: the percentage of customers that are residential, the percentage of customers that are minorities, the percentage of multi-family buildings, the average household income, and the total number of customers.

Q. What criteria were considered for customer operations?

A. The criteria included in the customer operations category are: the number of households per square mile, the percentage of indoor meters, the number of errors in meter reads, the number of meters per meter reader, the number of safety related human performance incidents, the percentage of meters read, the chronic number of no reads, the percentage of customer accounts that are past due, the average amount for accounts that are past due, and the average amount of consumption on inactive accounts.

Q. What criteria were considered with respect to T&D?

A. The criteria included in the T&D category are: the midcircuit reclosure population, the Automatic Line Reconfiguration Switches population, the mobile substation population, the System Average Interruption Frequency Index, the Customer Average Interruption Duration Index, geography, ComEd's communication infrastructure, and the radio frequency (RF) noise.

Q. In what operating center is ComEd proposing to deploy the AMI Pilot Program?

A. ComEd has selected its Maywood Operating Center.

Q. Will all the meters in the Maywood Operating Center be included in the AMI Pilot?

A. No, only part of the Maywood Operating Center will be included in the pilot. ComEd proposes to deploy the AMI meters in nine communities referred to as the "I-290 Corridor," including Bellwood, Berwyn, Broadview, Forest Park, Hillside, Maywood, Melrose Park, Oak Park, and River Forest.

Q. Why has ComEd selected a partial operating center for the AMI Pilot Program?

A. Based on feedback from stakeholders at the AMI workshops, ComEd assessed whether fewer meters could be deployed without compromising a reasonable evaluation for the business case (see the direct panel testimony of Messrs. O'Toole and Doherty). Based on this analysis, ComEd determined that approximately 100,000 meters would be acceptable.

Q. Are there any challenges in deploying the AMI meters to a partial operating center?

A. Yes. With deployment in a partial operating center, there are operating challenges as to both installation and on-going operations, including the re-routing of the remaining manually read meters in the Maywood Operating Center and requiring meter technicians, construction crews and operating crews to execute both old meter and AMI meter processes within the same operating center. Additionally, Customer Service Representatives will need to differentiate which premises in the project location area have old meters or AMI meters when calls impacted by AMI are received. Users of ComEd's Outage Management System will need to recall which premises in the project location area have basic restoration confirmation. Third parties, such as Retail Electric Suppliers, may also need to manage additional complexities.

Q. Can a reasonable evaluation of operational benefits, as required in the Commission's Order in Docket No. 07-0566, be performed with the deployment of meters in a partial operating center?

A. Yes. These challenges presented by using a partial operating center will not affect ComEd's ability to deploy the meters or analyze the data.

Q. How did ComEd select the I-290 Corridor located in the Maywood Operating Center?

A. ComEd used the following additional demographic criteria as provided in the Claritas[1] database to rate each of 26 towns in the Maywood Operating Center: household income, home value, education level, language spoken in home, age of home, age of population, income below poverty level, multi-unit residences, housing units per structure, and race. It ranked each town from 1 to 26 for each criterion and then summed the ranking values by town to get total "score" for each town. It then used these scorings to create the most advantageous groupings (i.e., groupings that approximated the whole Maywood Operating Center and the ComEd system demographically while also providing diversity from the system average as represented by low scoring, medium scoring and high scoring towns) of contiguous towns that totaled approximately 100,000 meters. Also, ComEd plans to use its Technical Center facility as the project staging location. Having the selected contiguous area clustered around its Technical Center would limit the on-going work process management complexity and maximize the field deployment effectiveness. The I-290 Corridor was chosen because it was closest to the ComEd system average in most of the evaluated categories.

[1] Claritas is a Nielsen Company that provides up-to-date marketing information about people, households, and businesses within any geographic area in the United States.

2. The City of Chicago

Q. Where in the City of Chicago will ComEd deploy AMI meters and why?

A. There are two groups of customers within the City of Chicago that will be included in the AMI Pilot Program. The first group, which includes approximately 29,000 meters, is the geographic work area roughly bounded by Chicago Avenue on the south, Pulaski Road on the west, Diversey Avenue on the north, Milwaukee Avenue on the northwest and Humboldt Boulevard/Sacramento Avenue on the east. Please see the direct testimony of Mr. Hemphill as to why this area of the City of Chicago was chosen to be included in the AMI Pilot. The second group, which includes approximately 1,000 meters, includes customers in a small number of high-rise buildings and, potentially, other types of structures or environments that are not present in the I-290 Corridor. Including these customers will allow ComEd to gather data relating to the complexities involved in the installation and operation of AMI technologies throughout these specific environments. For the discussion of the selection of the City of Chicago to be included in the AMI Pilot, see the direct testimony of Mr. Hemphill.

3. The Village of Tinley Park

Q. Why will ComEd deploy AMI meters in the Village of Tinley Park?

A. 500 meters will be deployed in Tinley Park in order to evaluate the ability of the AMI technology to support automated reading of municipal water meters. Tinley Park's water meters are electronic devices and store data related to leak detection, peak consumption, use profile, tampering, etc., that are unique in the water industry and will provide valuable comprehensive AMI system performance information. For the discussion of the

selection of the Village of Tinley Park to be included in the AMI Pilot, see the direct testimony of Mr. Hemphill.

C. Retirement of Existing Meters to be Replaced With AMI Meters

Q. As the AMI meters are installed, what will happen to the existing meters that are removed?

A. The existing meters, which are mostly single phase, cumulative watt-hour meters, would be retired. It costs $19.50 to purchase a new single phase, cumulative watt-hour meter. However, it costs $21.00 to test a meter that has been removed pursuant to Commission rules (83 Illinois Administrative Code §460 ("Part 460")) and restock it. Therefore, it is less costly to retire a single phase watt-hour meter than to re-use it.

Q. Will the existing polyphase meters be handled the same way?

A. No. Approximately 5% of the meters are polyphase. Due to the cost of these meters, ComEd will attempt to re-deploy these meters outside of the AMI footprint. However, there are too many unknowns regarding these meters to specify how many are in a condition to be used again, e.g. age, model, capability, etc. This is included in the operational learnings discussed in the direct panel testimony of Mr. O'Toole and Mr. Doherty. Additionally, the assumptions relating to the cost of the retired meters include the retirement of all meters in the footprint, which is addressed by Martin G. Fruehe (ComEd Ex. 5.0) in his direct testimony. As part of the pilot evaluation, ComEd will revise those assumptions accordingly based on the number of meters retired.

Q. How will ComEd record the undepreciated costs of the retired meters?

A. The undepreciated costs will be recorded as a regulatory asset. For further discussion of the regulatory asset, see the direct testimony of Mr. Hemphill (ComEd Ex. 1.0) and Mr. Fruehe (ComEd Ex. 5.0).

D. Integration of AMI Information Technology With ComEd's Systems

Q. What are the various Information Technology tools that will be integrated into ComEd systems or legacy applications as part of the deployment of AMI meters?

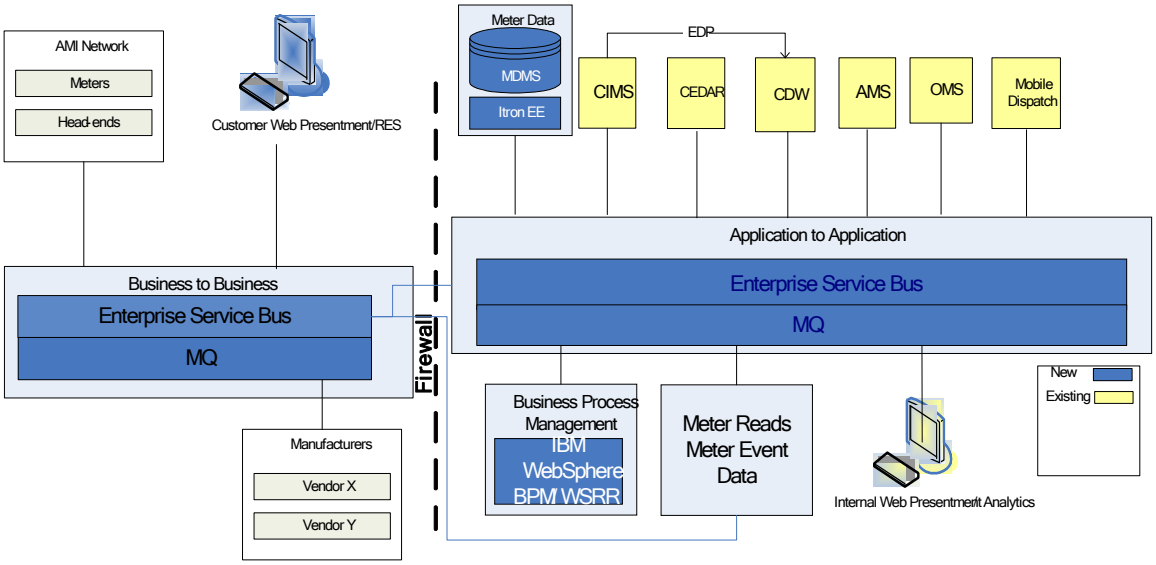
A. The following tools will be used:

- The Head-end system is the gateway to the AMI network. Its core functionality is to manage the AMI network and capture meter data and deliver it to the backend system and send out data to the meter. Meter data can be delivered real-time or in batch, and includes meter reads, meter events, power quality, and health. Backend systems and end users are not required to know the details of the network to utilize the head-end system.
- Customer Web Presentment is a web portal designed to show customers their usage. While the requirements are not approved, the general consensus is the user would be able to view their usage in terms of usage vs. time of day. The purpose is to provide timely and detailed feedback to the customer on their usage patterns. Data to the web portal will be supplied by web services.
- The Meter Data Management System is the system that captures meter data. Its main functionality is to act as a meter data repository, Validation/Estimation/Editing ("VEE"), and archive. Data will be passed to the MDM from the Head-end system. Once the reads are validated, the MDM will publish meter events and reads to the Enterprise Service Bus (ESB) for use by all the other systems.
- Web Presentment is a web portal designed for use internally to present dashboard data and workflows to employees. Dashboard data will be used to analyze activity within the business, such as deployment progress.
- The Asset Management System is used to track and manage assets. In the case of AMI, it will be used to track meters. It will be the master record of inventory, monitoring the status, location, and health of meters.
- The Customer Information Management System ("CIMS") is the centralized customer system and repository of customer data. This system is also used to create the customer's bill and manage work orders. The AMI implementation will not change CIMS functionality – rather it will expose services to the middle tier for external systems to leverage. Services will include creating work orders, creating customer contacts, and updating/inserting/deleting assets.

- CEDAR is the custom usage calculation system used by CIMS. Meter reads are passed into CEDAR, where billable usage is calculated. If the meter read fails validation, CEDAR will generate an estimated read or billing exception. Then the billable usage is passed to CIMS for billing. For the AMI Pilot, CEDAR will receive VEE'ed meter reads from the MDMS, and then pass the reads to CIMS for billing.
- The Outage Management System is an existing piece of ComEd's architecture. It is used to declare and manage outages. Utilizing AMI technology, the back office system will confirm outage restorations and notify OMS.
- The Customer Data Warehouse ("CDW") is a repository of customer information used by the business to gain insight to customer operations. The CDW is updated daily to maintain synchronization with third party systems.
- Business Process Management Suite is a tool used to orchestrate business processes transactions between backend systems and manual touch points (i.e. interactions from an installer). Transactions usually involve many steps and are considered long running, and must retain the state of the transaction throughout its life. Such functionality would include: remote connect/disconnect, and meter deployment.

Q. How will the AMI technology be integrated into ComEd's legacy applications?

A. The Service Oriented Architecture/Enterprise Service Bus is the primary architecture that will allow our legacy applications to interface with the new AMI technology. It provides the necessary communication, intelligent routing, and the translation and transformation needed for integration. Furthermore, the bus allows incremental integration driven by business requirements, not technology limitations, as in our current point to point system architecture. The bus design provides for the flexibility needed to process the extremely large volume of data produced by the AMI metering system, thereby allowing requesters of the data, both legacy applications and new applications, access to the systems that are the source of the data. The goal of ComEd's AMI IT architecture approach is to ensure that, as both publishers and requesters of data, system users, business processes, applications and installation vendors are able to interact seamlessly and efficiently. The following diagram illustrates the architecture:



306 Q. What are the benefits of an Enterprise Service Bus ("ESB")?

307 A. From a high level perspective, the ESB provides several key architectural benefits. First,
308 it provides enhanced architecture functionality and scalability (such as transaction
309 management and load balancing). Second, it enables portability and interoperability.
310 Third, it provides platform and service location transparency. Fourth, it simplifies
311 programming interfaces. Fifth, it provides adaptability and flexibility. Sixth, it enforces
312 architecture and application uniformity. Seventh, it enables de-coupling of application
313 logic. Finally, it isolates developers from technical complexity.

314 Q. What are the IT release dates for the AMI Pilot?

315 A. IT will be released in four stages. First, the Meter Installation Support will be released by
316 November 30, 2009. Second, customer retail billing will begin using the automated
317 meter reads for the February 2010 billing period. Third, the IT functionality supporting
318 remote disconnect, basic outage management, and web presentment will be released by

March 2010. Finally the IT functionality supporting the customer applications will be released for the June 2010 billing period.

E. Data Collection

Q. How will data be sent to and collected from the deployed AMI meters?

A. Based on configuration of the AMI metering system, scheduled meter reads are transferred from the meters to the Head-end device, where they are aggregated into a batch file. The Head-end device sends the file to the AMI Gateway Server. The AMI Gateway Server then transfers it to the file system of the ESB Server in the Enterprise Zone and breaks each meter read line into a separate message with the MDMS noted as the endpoint. The messages are placed on a queue, transmitted across the bus where the custom "MDMS Connector" picks up messages from the queue and loads them into the MDMS.

Q. How is meter event data transferred to ComEd's systems?

A. Based on configuration of the AMI metering system, meter events are transmitted to the Head-end device, which then makes the request to the AMI Gateway Server to analyze the meter event data. Once the AMI Gateway Server has authenticated and authorized the Head-end, it inspects the message, and sends it on to the ESB. Logic coded into the ESB will determine what system should be notified or what action should be taken.

Q. How is data requested from the AMI meters?

A. Based on application design, the MDMS or another application initiates a request for a meter read. The request is routed through the AMI Gateway Server to the appropriate Head-end device. The Head-end device routes the request to the appropriate meter. The

meter performs the read and responds to the Head-end with meter reading. The Head-end passes response back per the processes outlined previously.

III. Pilot Project Timeline

Q. Once the Commission's Order approving the AMI Pilot is entered, how long will it take to deploy the AMI meters?

A. The installation of the 141,000 AMI meters will take approximately seven months, excluding the 1,500 meters that will be installed prior to November to support systems testing. The meters will be installed beginning in November (once the Commission enters its Order in this proceeding) and ending in May 2010, with approximately 75% of the meters installed by the end of February 2010 and the more difficult to exchange meters extending into May.

Q. How many installers will it take to complete the deployment of meters?

A. To complete the deployment of AMI meters, it will require anywhere from ten installers to fifty-eight installers in a given month. Currently, ComEd anticipates the following per month installations and number of installers:

Month	Number of Installers	Total Approx. Meters Installed
Prior to ICC order	N/A[2]	1,500
November 2009	15	2,500
December 2009	20	18,000
January 2010	52	42,000

[2] A non-dedicated group of employees will be used to perform these installs and will total less than 15

February 2010	58	42,000
March 2010	28	22,000
April 2010	24	10,000
May 2010	10	3,000

Q. Will the deployment of the AMI Pilot affect the job of meter readers?

A. It will decrease the number of meter reading jobs in the Pilot locations by approximately 10 to 13 positions in total.

Q. Will ComEd take steps to address this effect on meter readers?

A. Yes. ComEd is working with the International Brotherhood of Electrical Workers (Local No. 15) to minimize the impacts to displaced meter readers by, for example, identifying other meter reader position openings elsewhere with ComEd, putting in a hiring freeze, or allowing natural attrition to occur within the Meter Reading organization. Also, we plan to reassign meter readers gradually over several months as we certify the AMI meter reading process in order to reduce the number of excess positions occurring simultaneously. A successful partnership effort will enable us to minimize the impact on the employees while allowing us to realize the maximum cost savings

Q. Who will install the AMI meters?

A. ComEd plans to use its internal workforce to install the meters. With the expected low volume of new business construction work during the meter deployment period, ComEd has sufficient internal labor capacity for meter installation.

IV. Forecasted Capital Expenditures

Q. What are the total forecasted expenditures related to the AMI pilot?

A. ComEd estimated that the total pilot direct capital costs are approximately $47,000,000 and Operating and Maintenance ("O&M") expenses are approximately $8,900,000. These amounts consists of the following capital costs and O&M expenses:

Expenditure	O&M	Capital	Total
Project Management	1.4	2.6	4.0
One-time AMI equipment		19.6	19.6
AMI meter installations		4.0	4.0
AMI network installation		1.6	1.6
IT software/hardware/system integration	3.7	19.1	22.8
Operational expenses	3.8		3.8
Total forecasted expenditures	8.9	46.9	55.8

These amounts do not include the cost of the retired meters, related depreciation and amortization expenses and the quarterly AMP recovery amount. See the direct testimony of Mr. Fruehe for the costs associated with the retired meters. Also, these amounts do not include the customer applications expenses.

Q. What are the forecasted costs related to Project Management?

A. The forecasted costs for Project Management are $4,000,000, which consists of $1,400,000 of O&M expenses and $2,600,000 of capital costs associate with project team labor costs for the duration of the pilot. Besides performing the overall project management for the pilot, the project team also defines the scope of the business changes, creates and executes the internal change management plan, and is responsible for creating the business case and pilot evaluation that will be presented after the pilot.

Q. What are the forecasted one-time AMI equipment costs for the AMI Pilot?

A. The forecasted one-time AMI equipment costs, inclusive of all meters and network hardware, are $19,600,000. This does not include labor to install back-office equipment, software, nor professional services. This amount includes the cost of poly-phase meters, single-phase meters with internal service switch and single-phase meters without internal service switch.

Q. What are the forecasted AMI meter installation costs for the AMI Pilot?

A. The forecasted AMI meter installation costs are $4,000,000 for the 141,000 meters. Approximately $3,500,000 is labor costs for meter installers, supervision and clerical support, and $400,000 is for materials

Q. What are the forecasted AMI network installation costs?

A. The forecasted AMI network installation costs are $1,600,000. These costs include the labor to design and install the network equipment made up of Access Points and Relays. Access Points are devices that route network data to and from smart meters across the RF (radio frequency) network and act as an egress from the network to ComEd's data center. This is accomplished through a digital cellular device inside the Access Point or other backhaul medium. Relays are very similar to Access Points acting as routers but without the egress. The installation itself requires skilled crews to mount these devices on utility poles, streetlights, or similarly elevated and powered locations.

Q. What are the one-time IT software, hardware and systems integration costs related to the deployment of the AMI Pilot?

A. The estimated one-time IT software, hardware and systems integration costs are $22,800,000, which consists of $3,700,000 of O&M expenses and $19,100,000 of capital

costs. This includes the MDMS software, integration to various ComEd systems, supporting hardware, and software.

Q. What are the forecasted ongoing operations costs related to the operations of the AMI Pilot after the meter deployment is completed?

A. The estimated operational costs of the pilot are estimated at $3,800,000 for the last six months of 2010. These costs are related to the AMI Operations department, reinvestment capital, new meters and installation, hardware and software maintenance, network maintenance, and third party fees.

Q. Does this complete your direct testimony?

A. Yes.