

139 East Fourth Street, R. 25 At II P.O. Box 960 Cincinnati, Ohlo 45201-0960 Tel: 513-419-1843 Fax: 513-419-1846 John.Finnigan@duke-energy.com 36

John J. Finnigan, Jr. Associate General Counsel

FILE <u>VIA E-FILING AND ORDINARY U.S. MAIL</u>

January 29, 2008

Ms. Betty McCauley Docketing Division The Public Utilities Commission of Ohio 180 East Broad Street Columbus, Ohio 43215-3793

Re: In the Matter of the Application of Duke Energy Ohio, Inc. for an Increase in Gas Rates, Case No. 07-589-GA-AIR

In the Matter of the Application of Duke Energy Ohio, Inc. for Approval of an Alternative Rate Plan for its Gas Distribution Service, Case No. 07-590-GA-ALT

In the Matter of the Application of Duke Energy Ohio, Inc. for Approval to Change Accounting Methods, Case No. 07-591-GA-AAM

Dear Ms. McCauley:

Enclosed please find the testimony and supplemental attachments for Duke Energy Ohio Inc.'s witnesses: Gary J. Hebbeler, Paul G. Smith, Donald L. Storck, William Don Wathen Jr., Dr. Roger A. Morin. I am also including the Duke Energy Ohio, Inc.'s Motion to Strike Objections to Staff Report of Investigation filed by Ohio Partners for Affordable Energy.

Sincerely,

John J. Finnigan, Jr.

Associate General Counsel

JJF/bsc

cc: Michael L. Kurtz (w/encl.) David F. Boehm (w/encl.) John M. Dosker (w/encl.) David C. Rinebolt (w/encl.) Colleen Mooney (w/encl.) M. Howard Petricoff (w/encl) Bobby Singh (w/encl.) John W. Bentine (w/encl.) Thomas J. O'Brien (w/encl) Thomas Lindgren (w/encl.) Larry S. Sauer (w/encl.) William Wright (w/encl.) Mary W. Christensen (w/encl.) RECEIVED-DOCKETING DIV

008 JAN 30 AM 10: 46

PUCO

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In The Matter of the Application of)	
Duke Energy Ohio, Inc. for an)	Case No. 07-589-GA-AIR
Increase in Gas Rates)	
In the Matter of the Application of)	
Duke Energy Ohio, Inc. for Approval)	Case No. 07-590-GA-ALT
of an Alternative Rate Plan for its)	
Gas Distribution Service)	
In the Matter of the Application of)	
Duke Energy Ohio, Inc. for Approval	Ś	Case No. 07-591-GA-AAM
to Change Accounting Methods	ý	

SUPPLEMENTAL TESTIMONY OF

PAUL G. SMITH

ON BEHALF OF

DUKE ENERGY OHIO, INC.

- _____ Management policies, practices, and organization
- _____ Rate Base
- _____ Allocations
- _____ Rate of return
- _____ Rates and tariffs

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In The Matter of the Application of)	
Duke Energy Ohio, Inc. for an)	Case No. 07-589-GA-AIR
Increase in Gas Rates)	
)	
In the Matter of the Application of)	
Duke Energy Ohio, Inc. for Approval)	Case No. 07-590-GA-ALT
of an Alternative Rate Plan for its)	
Gas Distribution Service)	
)	
In the Matter of the Application of)	
Duke Energy Ohio, Inc. for Approval)	Case No. 07-591-GA-AAM
to Change Accounting Methods)	

SUPPLEMENTAL TESTIMONY OF

PAUL G. SMITH

ON BEHALF OF

DUKE ENERGY OHIO, INC.

INDEX

Supplemental testimony addressing the determination of various operating income items and other requested regulatory relief.

TABLE OF CONTENTS

PAGE

I.	INTRODUCTION1-
П.	LIST OF OBJECTIONS 1 -
III.	OBJECTION NO. 52 -
IV.	OBJECTION NO. 10
V.	OBJECTION NO. 11 4 -
VI.	OBJECTION NO. 15
VII.	OBJECTION NO. 16
VIII.	OBJECTION NO. 17
IX.	CONCLUSION - 8 -

1

I. INTRODUCTION

- 1 Q. PLEASE STATE YOUR NAME.
- 2 A. My name is Paul G. Smith.
- **3 Q. DID YOU FILE DIRECT TESTIMONY IN THIS PROCEEDING ON**
- 4 **BEHALF OF DUKE ENERGY OHIO INC. ("DE-OHIO")?**
- 5 A. Yes.

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

- 7 A. I list the objections filed and introduce the DE-Ohio supplemental witnesses who
- 8 will describe and support each objection. Additionally, I support Objection Nos.
- 9 5, 10, 11, 15, 16 and 17 in DE-Ohio's Objections to Staff Report of Investigation
- 10 and Summary of Major Issues, filed on January 22, 2008.

II. LIST OF OBJECTIONS

- 11 Q. PLEASE PROVIDE A LIST OF THE COMPANY'S OBJECTIONS AND
- 12 IDENTIFY THE SUPPLEMENTAL WITNESSES WHO WILL FURTHER
- 13 **DESCRIBE AND SUPPORT THE OBJECTIONS.**
- A. Following is a list of the Company's objections and the supplemental witnesses
 who will further describe and support the objections:

Objection No.	Description	Witness	
1	Amount of Staff's Proposed Revenue Increase	William Don Wathen	
2	Common Plant Allocation Factor	William Don Wathen	
3	Working Capital	William Don Wathen	
4	Depreciation Expense	William Don Wathen	

5	Weatherization Expense	Paul G. Smith	
6	Gross Revenue Conversion Factor	William Don Wathen	
7	Amortization Period for Certain Expenses	William Don Wathen	
8	Property Taxes	William Don Wathen	
9	Cost of Equity	Roger A. Morin	
10	Trackers as Part of Base Rate Application	Paul G. Smith	
11	Rider AU – Meter Costs	Paul G. Smith	
12	Construction Period for Riser Replacement /AMRP Programs	lacementGary J. HebbelerIl SubsidyDonald L. StorckDonald L. StorckDonald L. Storckes andPaul G. Smithsified ProcessingPaul G. Smith	
13	Revenue Distribution – Residential Subsidy		
14	Decoupled Rate Design		
15	Audit of Service Company Charges and Allocations		
16	Completed Construction Not Classified ("Account 106") and Retirement Processing		
17	Filing Date for Next Rider AMRP Application	Paul G. Smith	

III. **OBJECTION NO. 5**

1 Q.

PLEASE EXPLAIN THE COMPANY'S OBJECTION NO. 5.

2 Α. The Company objects to the Staff's failure to include \$1 million for 3 weatherization expense in its recommended revenue requirement. The Company 4 proposed an additional \$1 million in annual expense in recognition of the benefits 5 that such funds could provide to its low-income customers. In part, the additional 6 funds could be targeted to the largest consumers who participate in the percentage 7 of income payment plan ("PIPP") program. Implementing additional 8 weatherization programs targeted to this group of customers provides many

224011

benefits, including the reduction of PIPP costs borne by all gas distribution
 system customers. The Company believes the recovery of this expense within its
 base rate application is appropriate.

4 Q. DID THE STAFF DISCUSS RECOVERY OF THE ADDITIONAL \$1 5 MILLION WEATHERIZATION EXPENSE IN THE CONTEXT OF THE 6 PROPOSED ALTERNATIVE REGULATION PLAN?

7 A. Yes. In the Proposed Alternative Regulation Plan section of the Staff Report, the
8 Staff recommends that the additional \$1 million in weatherization funding come
9 from Duke Energy shareholders rather than from customers. The Staff
10 recommended shareholder funding as part of the Company's commitments to
11 support its alternative regulation plan, which consists of various trackers.

12 Q. DO YOU AGREE WITH THE STAFF'S RECOMMENDATION?

13 Α. I do not for two reasons. First, DE-Ohio requested approval of the various 14 trackers as part of its base rate application and as part of its alternative regulation plan. To the extent that the Commission approves the trackers under DE-Ohio's 15 16 base rate application, just as Rider AMRP was approved in Case No. 01-1228-17 GA-AIR, then DE-Ohio should be permitted to reflect the full cost of its 18 weatherization funding in its test period operating expenses for purposes of establishing its base gas distribution rates. The approval of the various trackers as 19 20 part of the Company's base rate application is further described in Objection No. 21 10.

22 Second, to the extent that the Commission approves the trackers under 23 DE-Ohio's alternative regulation plan, the Company believes that its existing

224011

significant commitments are sufficient to support the alternative regulation plan.
 The existing commitments, as partially described by the Staff on pages 48 and 49
 of the Staff Report, and the Economic Development and Charitable Giving
 initiatives described in Sandra Meyer's direct testimony, are sufficient to support
 the alternative regulation plan.

IV. OBJECTION NO. 10

6

Q.

PLEASE EXPLAIN THE COMPANY'S OBJECTION NO. 10.

7 Α. The Company objects to the Staff's failure to address its tracker proposals as part 8 of the base rate application. Instead, the Staff Report discusses the tracker 9 proposals only in the context of DE-Ohio's alternative regulation plan. DE-Ohio 10 filed its tracker proposals as part of both its base rate application as well as its 11 alternative regulation plan; therefore, Staff should have analyzed the tracker 12 proposals in the context of both applications. As the Commission has approved 13 similar tracker proposals in other cases as part of base rate applications, the 14 Company believes the trackers proposed in this application should be approved as 15 part of this base rate application.

V. <u>OBJECTION NO. 11</u>

16 Q. PLEASE EXPLAIN THE COMPANY'S OBJECTION NO. 11.

A. In the Staff Report, Staff correctly recognizes the potential meter reading savings
and the customer benefit via a reduction in the number of estimated meter reads
associated with implementing the Utility of the Future initiative. Perhaps most
importantly, the Staff Report recognizes the significant benefit to nearly one-half
of our customers of not requiring access to the premise to read their meter, or to

224011

the nearly 15% of our customers who have given DE-Ohio keys to their home or business to read their meter. However, the Company objects to the Staff's proposal that the cost of replacing inoperative meters, or meters that are incompatible with the advanced metering infrastructure ("AMI"), not be recoverable through the proposed Advanced Utility Rider ("Rider AU").

First, the Company believes that all costs incurred to achieve the customer
savings and benefits should properly flow through the proposed Rider AU. By
not allowing timely recovery of such incremental costs, the tracker mechanism
will not result in a proper matching of revenues and expense.

10 Second, although the Company anticipates replacing only a relative small 11 number of gas meters as part of the Utility of the Future project, all electric meters 12 will be replaced as part of the program. The timely recovery of such significant, 13 incremental electric meter costs will be vital to the project deployment. For 14 example, page 5 of Attachment PGS-1 Supplemental, a New York Public Service 15 Commission Order in the statewide advanced metering case, states that the 16 companies' cost/benefit plans indicated that metering equipment represents 53% 17 of the entire system cost. The Company believes the Commission should be 18 consistent in its treatment of replacing gas and electric meters, with both services 19 afforded timely recovery of incurred incremental costs.

VI. <u>OBJECTION NO. 15</u>

20 Q. PLEASE EXPLAIN THE COMPANY'S OBJECTION NO. 15.

A. The Company objects to the Blue Ridge Consulting Services, Inc ("Blue Ridge")
 recommendation that DE-Ohio should conduct an audit of service company

224011

1 charges and allocations. The Staff Report did not recommend any such audit, and 2 the Company submits that such an audit is unnecessary. Blue Ridge "reviewed 3 and validated the jurisdictional, organizational, and functional allocation factors 4 used in distributing service organization costs to DE-Ohio." Given Blue Ridge's 5 review, their lack of recommendations in regards to the service company, and 6 their apparent lack of any concern regarding the types and amounts of services 7 provided, an audit of service company charges and allocations would likely result 8 in an unnecessary and unproductive use of labor and financial resources which 9 would needlessly be passed through to retail gas distribution customers in the 10 form of higher rates.

VII. <u>OBJECTION NO. 16</u>

11 Q. DESCRIBE THE COMPANY'S OBJECTION NO. 16.

12 A. The Company objects to Blue Ridge's recommendation that DE-Ohio reduce the 13 number of work orders and the dollar value of work orders in Account 106, 14 Completed Construction Not Classified, to a more reasonable level and establish 15 an estimate of plant that should be retired in connection with each work order 16 classified in Account 106 as of the date certain in this case. The Staff Report did 17 not accept this recommendation and it is unnecessary and incorrect. The vast 18 majority of the work orders in Account 106 at the date certain in this case are 19 related to the AMRP. The work orders were maintained in Account 106 to allow 20 for identification of the AMRP investment until such plant investment is included 21 in DE-Ohio's rate base. Since the filing of this case, DE-Ohio has closed the 22 March 31, 2007, balance of these work orders to Account 101, Plant In Service.

224011

1 As to the recommendation regarding estimating retirements, DE-Ohio 2 processes all AMRP-related retirements immediately after the plant is taken out of 3 service. Blue Ridge's calculation of \$13.8 million of estimated retirements that 4 should have been booked is incorrect because these retirements actually have 5 been booked, if the plant is no longer in service. As such, Blue Ridge's estimate 6 of the \$356,000 reduction in depreciation expense related to these retirements is 7 also incorrect. Just as there is some level of retirements to be booked at the date 8 certain, there are work orders that have been placed in service but not recorded 9 due to processing delays in receiving paperwork from field personnel. Staff 10 apparently recognizes this and does not require any adjustment to Plant In Service 11 in its recommendations.

VIII. OBJECTION NO. 17

12 Q. DESCRIBE THE COMPANY'S OBJECTION NO. 17.

13 Α. The Company objects to the Staff's failure to address the timing of the 14 Company's next Rider AMRP filing. In November 2007, the Company filed a 15 pre-filing notice to increase the Rider AMRP rate, consistent with the 16 Commission's schedule for the annual Rider AMRP filings established in Case 17 No. 01-1228-GA-AIR. Should the Commission determine that the AMRP pre-18 filing notice overlaps with the present base rate application, then the Company is 19 requesting that the AMRP filing be held in abeyance and the filing date for the 20 application be extended to the earlier of: (a) April 21, 2008, or (b) after the final 21 order is issued in this base rate case. By allowing DE-Ohio to timely update its 22 Rider AMRP rate for the significant plant investment from April 1, 2007, through

224011

1		December 31, 2007, the Company will continue to earn its appropriate return and			
2		mitigate the regulatory lag this tracker was intended to remedy.			
		IX. <u>CONCLUSION</u>			
3	Q.	DOES THIS CONCLUDE YOUR SUPPLEMENTAL TESTIMONY?			

4 A. Yes.

STATE OF NEW YORK PUBLIC SERVICE COMMISSION

At a session of the Public Service Commission held in the City of New York on December 12, 2007

COMMISSIONERS PRESENT:

Patricia L. Acampora, Chairwoman Maureen F. Harris Robert E. Curry, Jr. Cheryl A. Buley

CASE 94-E-0952 - In the Matter of Competitive Opportunities Regarding Electric Service.

CASE 00-E-0165 - In the Matter of Competitive Metering.

CASE 02-M-0514 - Proceeding on Motion of the Commission to Investigate Competitive Metering for Gas Service.

ORDER REQUIRING FILING OF SUPPLEMENTAL PLAN

(Issued and Effective December 19, 2007)

BY THE COMMISSION:

INTRODUCTION

On March 28, 2007, Consolidated Edison Company of New York, Inc. and Orange and Rockland Utilities, Inc. (Con Edison, Orange and Rockland, or the companies) filed a plan for development and deployment of advanced electric and gas metering infrastructure (the Plan) in compliance with our advanced metering infrastructure (AMI) Order.¹ The Plan proposes that AMI be installed throughout the companies' service territories in New York on both electric and gas services.

¹ Cases 94-E-0952, et al., <u>Competitive Opportunities Regarding</u> <u>Electric Service</u>, Order Relating to <u>Electric</u> and <u>Gas Metering</u> Services (issued August 1, 2006) (AMI Order).

The Plan complies with the requirements set forth in our AMI Order. However, cost-effective system-wide implementation relies heavily on (1) the estimated value of the benefits of demand response, whose forecasted values, we believe, require more support, and (2) a rapidly developing technology, which has yet to be fully tested in a service territory with the unique and complex features of Con Edison's. Furthermore, we are not certain that the proposed pre-deployment demonstration projects will produce the information necessary to verify the reasonableness of the companies' estimates of benefits and costs.

We will direct the companies, therefore, to submit a supplemental plan for the pre-deployment projects for approval that includes the additional information and details as described in the body of this Order. The companies shall submit a report detailing the results gained from the pre-deployment projects and a re-evaluation of the cost-effectiveness of system-wide AMI deployment. Commission approval of the report and of the further plans of the companies will be required before the companies initiate system-wide deployment.

BACKGROUND

The AMI Order directed all electric utilities to file comprehensive plans, to the extent feasible and cost effective, for development and deployment of AMI for the benefit of all customers. Gas utilities were directed to assess the feasibility of developing, offering, and installing AMI for large volume gas customers.² On March 28, 2007, Con Edison and Orange and Rockland filed their plan for the development and system-wide deployment of advanced electric and gas metering

² AMI Order, p. 37.

-2-

CASES 94-E-0952, <u>et</u> <u>al</u>.

infrastructure. The companies propose to install AMI throughout their New York service territories that would encompass approximately 3.6 million electric meters and about 1.2 million gas meters. Advanced meter functionality would be available to all these meters by 2014.

The Plan

The companies engaged the consulting firm KEMA to assist them in research and analysis and in developing a feasible and cost-effective AMI plan for their electric and gas services. The plan describes the goals identified for AMI, the potential costs and benefits of an AMI system, the technology issues confronted in the design of AMI systems for the companies' service territories, and the companies' proposals for (1) testing the selected communications technologies in predeployment demonstration projects and (2) developing data reflective of customer response to new rate forms and the additional information available through an AMI system. The companies also propose a recovery mechanism for the associated capital investment and operations and maintenance (O&M) costs.

Goals

The companies state that AMI will provide a basis for cost-saving changes in areas of its customer operations as well as enabling benefits for customers, the environment, and society in general. Customer service benefits resulting from the implementation of AMI are expected by the companies to include: (i) reductions in the number of estimated bills issued and the associated customer contacts regarding those bills; (ii) reductions in disputes regarding service responsibility during times of occupant transitions; and (iii) more frequent and detailed consumption information, which they expect will have many uses. The companies state that they anticipate customers

-3-

and their representatives will have access to desired usage information from AMI in a convenient form and without distinction based on energy provider. With the enhanced usage information available to customers and customers' more informed response to demand response programs, the companies expect AMI to yield reductions of electric system load and market price peaks to the benefit of the market and all electric customers. The companies state they also believe AMI will provide enhanced distribution system information relating to power outages and restoration, power quality, and meter tampering, as well as facilitate participation in energy management programs through manual action by customers, preprogramming, or remote control.

Costs

The companies assert that estimating the costeffectiveness of an advanced electric and gas metering infrastructure has been a complex undertaking for several reasons. Cost estimates depend on the identification of the metering and, more importantly, the communications system or systems and the meter data management system (MDMS) to be employed. Choosing among the available systems requires the companies to understand how each possible system would be arrayed across the specific topography and meter locations in the utilities' service territories in order to provide the desired degree of timeliness and consistency in the communication of meter data. Due to the lack of certainty with respect to the physical configuration of the AMI systems, the companies concede that there is a corresponding uncertainty in projecting the costs of implementing such systems until these systems can be validated.

The cost analysis presented by the companies was prepared by projecting the system costs on an overall basis for the companies and forecasting other costs as they are expected

-4-

to apply specifically to each of the seven distinct areas within the companies' service territories.³ The cost analysis assumed a fifteen-year life for the metering equipment and communications infrastructure and a five-year life for the information technology hardware. It also assumed a seven-year system-wide deployment schedule commencing in 2007 for Con Edison and an eight-year implementation schedule commencing in 2007 for Orange and Rockland with annual inflation at the rate of 2.6% applied to O&M costs.

The companies identified the following key cost elements and estimated the cost for each element:

Cost Area	Present Value over 15 years (\$ Million)
Metering Equipment	\$379.5
Meter and Data Collector	\$ 88.5
Installation	
Meter Communications	\$ 41.2
Infrastructure	
Operations and Maintenance	\$ 92.8
Meter Data Management System	\$ 17.0
Labor Costs	\$ 86.1
Other Costs	\$ 7.7
Total Costs	\$712.8

Benefits

In the assessment of potential benefits that could be achieved through AMI, the companies examined, evaluated, and projected economic benefits in a number of categories. The savings were grouped into the categories of Companies' Realizable Operating Benefits, Companies' Future Operating Benefits, Societal Benefits, and Societal Future Benefits.

³ The seven areas are the County of Westchester and the five boroughs in the City of New York for Con Edison and the combined Counties of Orange, Rockland, and Sullivan for Orange and Rockland.

Benefit Area Breakdown - Present Value over 15 years (\$ Million)				
Benefit Area	Benefit Area Realizable		Societal	Societal
	Companies'	Future	Benefit	Future
	Operating	Operating		Benefit
	Benefit	Benefit		
Elimination of Manual Meter	\$266.4			
Reading				
Reduction of Off-cycle Reads	\$ 12.3			
Reduction of Estimated Bills	\$ 12.1			
Reduction of Field Service Orders	\$ 2.4			
Increased Revenue Due to	\$ 42.1			
Improvement in Meter Accuracy				
Deferral of Metering Capital Costs	\$140.3			
Reduction of Call Center Contacts	\$ 4.0			
for Bill-Related Calls				
Reduction of Compensation/Claims	\$ 6.0			
for Meter Reading				
Reduction of Load Research Costs	\$ 8.5			
Reduction of Revenue Losses from	\$ 8.7			
Unoccupied Premises				
Reduction of Handling Time for	<\$ 0.1			
Calls Regarding Power Quality				
Issues				
Reduction of Nested-Outage	\$ 0.5			
Restoration Time				
Reduction of False Outage	\$ 1.3			
Dispatches				
Increased Revenue Due to Reduced	\$ 1.2			
Outage Restoration Time				
Reduction of Long-Term Outage	\$ 1.7			
Response Time				
Reduction of Costs to Support	\$ 2.5			
Other Initiatives				
Increased Energy Efficiency and		\$10.1		
Demand Response Participation that				
would Defer T&D System Upgrades				
Increased Customer Utilization of		\$ 0.7		\$0.8
eCommerce Channels				
Avoided Capacity Costs Due to			\$122.8	
Increased Load Management				
Participation				
Avoided Capacity Costs by Managing			\$101.4	
Unforeseen Market Changes in End-				
Use Devises				
Decreased Customer Costs Due to			\$ 35.8	
Improved Outage Management				
Decreased Electric Demand and Load		1	\$ 0.8	
that would improve Environmental	1	i		
Conditions				
Total Benefits	\$510.1	\$10.8	\$260.8	\$0.8

The companies estimate that the total costs of systemwide AMI deployment equal \$712.8 million and the total benefits equal \$782.5 million, thus resulting in a net benefit of \$69.7

million. It is noteworthy that about \$224 million or about 30% of the total benefits are attributable to estimated changes in customer consumption.

Technology Issues

The companies state that selection of each AMI component (<u>i.e.</u>, meters, communications systems, and meter data management systems) depends on different factors. According to the companies, meter selection depends on the functionality desired and its ability to operate with the selected AMI communication capability. This combination, the companies claim, can be achieved either by adapting a meter with a communications module (the usual approach for gas meters) or by acquiring a meter that has an integrated communication capability as part of its design (the usual approach for electric meters).

Selection of the communications technology, which will constitute the backbone of a system that must transmit meter data without interruption or alteration, is more complicated, assert the companies. The companies identify two components to the communications system: local area network (LAN) communications and wide area network (WAN) communications. The companies explain that the LAN is used to transmit data from the local data collection point to a data repository, such as an MDMS. At the present time, the companies state, every provider of AMI systems has a unique communications method for the LAN portion of the solution. The WAN connections considered for the companies' proposal would employ standard network communication arrangements generally available from a variety of sources.

The companies assert that AMI system manufacturers have experience predominantly with electric radial distribution systems common in suburban and many urban areas. Many AMI systems, according to the companies, have not been adequately

-7-

tested in network distribution systems like Con Edison's, which have characteristics that can adversely affect the performance and functionality of offerings that use the electrical network as a communications medium. The underground network distribution system that is found in the majority of Con Edison's service territory, the companies explain, also presents technical challenges to radio frequency (RF) communications technologies used for AMI, particularly where meter density is high or meters are located multiple stories below grade or where building construction may impede transmissions. Because of the lack of homogeneity across their service territories, the communications methodologies that address the particular characteristics of each type of area.

Given Con Edison's substantial progress in implementing a Mobile AMR system in Westchester, the Companies considered how best to upgrade the functionality of that system if an AMI system were to be implemented elsewhere in the Companies' service territories. The companies claim that mobile AMR of the type installed by Con Edison can theoretically migrate to a fixed network architecture, providing a system that offers many of the functions that would be available from AMI systems having full two-way connectivity. This "virtual AMI" system solution is available from the same technology vendor selected for the original Mobile AMR system. Con Edison proposes to establish a fixed network by installing pole-top data collectors to receive meter data frequently and return the retrieved data to the utility. This approach, according to the companies, preserves the investment already made in the meter sets while further reducing operating costs for meter reading by avoiding the need to drive by the meters. The meters in this fixed network, the companies state, can be read more frequently than once per monthly billing cycle, the current access

- 8 -

frequency, thus providing much of the same type and timeliness of meter data as AMI systems that have a bi-directional communications link to each meter. While interaction with each meter in an AMI system does offer more flexibility and greater functionality, the companies claim that many of the benefits of the AMI system can also be realized with this fixed network configuration.

Pre-deployment Demonstration Projects

The companies propose to undertake four pre-deployment demonstration projects at locations in Westchester, in Queens, in the Bronx and a portion of upper Manhattan, and in the Orange and Rockland service territory, that would have both common and unique objectives. The companies state that included among common objectives are both customer-focused goals and technology-focused goals. The unique goals, the companies explain, would explore the performance of particular AMI technologies in specific topographies and in the context of specific distribution system characteristics.

Common customer-focused goals include programs that would test a continuum of pricing alternatives that require different levels of customer understanding of the market and various levels of responsibility and risk for customer energy decisions. Pricing alternatives would include incentives for load reductions, critical peak pricing to allow customers to respond to several price signals, and hourly pricing. Some would include an in-home technology to control end-use appliances and others would offer pricing only and may offer variations of capacity and energy market pricing and perhaps bill presentation alternatives.

Common technology-focused goals, explain the companies, are to verify the performance of key characteristics of AMI. These include aspects such as: equipment configuration

-9-

and design, communications throughput, program process and logistics, AMI data collection and information integration, back-office systems integration, and cost/performance trade-off evaluation.

In the plan, the companies identified the following four area-specific demonstration projects:

<u>Westchester</u> - This project would include approximately 300,000 electric and gas end-points, which will have been deployed by the end of 2007 as part of the existing AMR program in the areas of Peekskill and Rye, and would use a fixed RF network "virtual" AMI arrangement.

Key performance measurement objectives would include verification of migration of the Mobile AMR configuration to stationary fixed network "pole-top" data collectors, validation of the method used to calculate the number of collectors required to adequately serve the meters selected for test, and identification of parameters that define the WAN connections and the suitability of wireless data services from existing cellular providers. This area is being populated with AMR modules that are expected to have the capacity to report interval data. The companies, therefore, expect to evaluate various business and technology processes associated with managing a large number of interval meter reads in a fixed network and the use of interval data information for billing and customer service.

<u>Queens</u> - Customers would be selected in the Long Island City network. This project would include installation or retrofit of approximately 100,000 electric and gas end-points, which would be deployed after a detailed project planning phase. The companies propose that this area would use an RF-mesh network configuration. This technology would allow the meters to have the ability to relay data both from their own registers and from other meters. The arrangement creates a network among end-points through meter-to-meter communications. This

-10-

interconnected network is used to extend the range of the AMI modules, optimize the communication paths, and reduce the number of pole-top data collectors required.

Key performance measurement objectives would include the verification of the communication capability of RF-mesh in medium-density indoor meter locations in a network distribution system. Of particular interest would be the determination of the system response to a large number of units reporting simultaneously to simulate a large-scale power outage notification event. Another aspect of the demonstration would be the exploration and evaluation of a large number of potential WAN providers. The proposed metropolitan WiFi system may be available for use during this project.⁴

<u>Southern Bronx/Upper Manhattan</u> - This project would include installation or retrofit of approximately 100,000 electric and gas end-points, which would be deployed following a detailed project planning phase. This area would use an RF point-to point (P2P) system. AMI systems in a P2P architecture use RF modules to communicate with data collectors. Systems with this configuration can enable a full two-way network and can communicate directly with many more meters.

The companies state that this area was chosen specifically to test the range and in-building penetration capability of this system without incurring the cost of siting a radio tower structure in Manhattan. Key performance measurement objectives would include the verification of the communication capability of this technology in indoor meter locations of high density, where challenges include subterranean and high-rise

⁴ New York City's Economic Development Corporation recently announced plans for a study that will examine the feasibility of building a city-wide broadband network.

meter locations. Customers would be selected in the Southern Bronx and the upper Manhattan distribution network.

Eastern Division of Orange and Rockland - This project would include installation or retrofit of approximately 5,000 electric and gas end-points, which would be deployed after a detailed project-planning phase. This area would also use an RF P2P system.

This area was chosen specifically to complement the plan to build the new Snake Hill substation and to support Orange and Rockland's plans to implement a "smart grid" for a complete radial distribution loop. Existing Orange and Rockland-owned towers in Pomona and Spring Valley would be used to locate the data collection equipment. Key measurement objectives would include verifying the radio performance in lowlying areas bounded by the Hudson River, where gaps exist with traditional radio technologies. The meter population is a moderately suburban area where meters are predominately located outdoors. Customers would be selected in the communities of Valley Cottage and Nyack.

Western Division of Orange and Rockland - This project would include installation or retrofit of approximately 5,000 electric and gas end-points, which would be deployed after a detailed project-planning phase. This area would use a RF P2P system.

This area was chosen specifically to test the range of the system in a very rural, sparsely populated area. Existing Orange and Rockland-owned towers in Greenville and Middletown would be used to locate the data collection equipment. Key measurement objectives would include verifying the radio performance in rolling hills where gaps also exist with traditional radio technologies. Customers would be selected in the communities of Unionville and Westtown.

-12-

Proposed Recovery Mechanism

The companies propose to begin recovery of all AMI and AMI-related costs contemporaneously with the initiation and implementation of the demonstration projects. The costs would include carrying charges on all capital investments associated with the AMI equipment described in the proposal, other than the level of investments contemplated in and reconciled under the Con Edison Electric Rate Plan, including the pre-deployment demonstration projects, to the extent not addressed in utility rate case orders for Con Edison and Orange and Rockland, and all incremental O&M expenses incurred directly and indirectly in the implementation and operation of the AMI system, net of operational savings not yet accounted for in base rates. These costs would be recovered from all electric and gas customers. Until such time as these costs can be placed in base rates, the costs would be recovered through surcharges reset annually.

Con Edison and Orange and Rockland propose that each company make an annual filing for carrying charges and expenses not already recovered through base rates and reconciling the prior year's over or under collection. Because rates may be developed based on load information from the pre-deployment demonstration projects and other load research, the companies argue that they should be permitted to recover lost electric and gas delivery revenues associated with customer participation in pilot rate programs that encourage reduction in customer usage. In addition, the companies assert that they should be made whole for lost revenues during any transitional rate period.

COMMENTS

Pursuant to State Administrative Procedure Act (SAPA) §202(1), notice of the Plan was published in the <u>State Register</u> on May 2, 2007. Comments were received only from Multiple Intervenors (MI).

-13-

MI states that given the implementation of AMI does not satisfy the Commission's criteria for demonstrated costeffectiveness, the Commission should refrain from requiring the implementation of the electric and/or gas advanced metering upgrades at this time. If the Commission mandates AMI implementation, MI argues, then the costs of implementing advanced metering services should be borne solely by those customers seeking the potential benefit of installing such equipment.

DISCUSSION

In directing the filing of AMI plans, one of our goals has been to provide customers with more information about peak prices to enhance their ability to control their energy costs by responding to such prices. In addition, AMI can help support our energy efficiency and load management initiatives, particularly in the area of program evaluation. Advanced metering offers the opportunity to better measure and verify the impacts of efficiency and load reduction measures, which is important in documenting the benefits from these programs.

The AMI Order removed regulatory barriers to utility investments in advanced metering, directed electric utilities to file plans and proposals for integrating advanced metering into their systems, and directed gas utilities to assess the advantages of and need for advanced metering and submit plans, if necessary, for installation of the new advanced metering technologies. We conclude that the AMI Plan filed by Con Edison/Orange and Rockland substantially complies with the requirements set forth in the AMI Order.

We are, nevertheless, concerned that cost-effective system-wide implementation relies heavily on the value of the benefits associated with demand response and energy efficiency, whose forecasted values require more support and also reliant on

-14-

(1) changes in customer consumption patterns that may not materialize on a wide-scale basis and (2) a rapidly developing technology, which has yet to be proven feasible in service territories as unique and highly variegated as Con Edison's. With some experience, more information will be available to the companies regarding benefits of the energy efficiency and demand response initiatives that are enabled by AMI technology.

Estimates of Benefits and Costs

The companies presented estimates of the costs and benefits of their proposed advanced meter deployment, but even they concede that there is much uncertainty in projecting the costs of implementing such systems until these systems can be validated. As previously noted, there is also much uncertainty surrounding the projections of many categories of benefits, particularly the societal benefits, since they depend on the expected response of customers to time-sensitive rate offerings to produce energy efficiency and demand reductions.

In addition, we are concerned that the companies' analysis of costs and benefits was insufficiently rigorous to produce reliable estimates of net benefits. Economic analyses of energy efficiency programs regularly involve separate estimations of costs and benefits from a variety of perspectives, including program participants, non-participants (the Ratepayer Impact Measure), utilities (or program administrators) and society at large (the Total Resource Cost test). It does not appear that the companies' analysis of net benefits has adhered to these procedures. In its analysis of net societal benefits, for example, the companies estimate a benefit of \$42.1 million resulting from increased revenue due to improvement in meter accuracy. Such a benefit is properly considered from the utility perspective, but represents a transfer payment (from customers to the utility) from a societal

-15-

perspective. The companies must recalculate its estimations of net benefits using the established principles of economic analysis developed for energy efficiency programs.

In sum, in order to approve the Plan, we must have greater certainty about its actual costs and benefits. The operational savings estimates provided by the companies should be verifiable with a higher degree of certainty after evaluating the 24-month report of the pilot program. While a pilot will not allow enough time to realize all long term operational benefits it should provide a reasonable verification of estimates and yet to be revealed costs in implementing advanced metering.

Pre-Deployment Pilot Projects

In the AMI Order, we stated that plans can include recommendations for pilot programs of sufficient scale to test the feasibility, operation, costs, and benefits of advanced metering proposals to a specific group of customers or within a geographical area.⁵ It is not clear to us, however, that the companies' pre-deployment projects will fulfill this objective. The AMI Plan contains very little detail regarding the predeployment projects' schedules, milestones, checkpoints and criteria for decision-making at each stage. With respect to rate offerings, it similarly contains little detail on what rate structures will be offered, the customer segments that will be targeted, the kinds of marketing and promotion that the company will undertake, what kind of outreach and education of customers will be pursued, or the methods that will be used to measure the energy efficiency, demand response and other benefits produced.

⁵ AMI Order, p. 16.

-16-

Case No. 97-589-GA-AIR Supp. Attach. PGS-1 Page 17 of 24

CASES 94-E-0952, et al.

The societal benefits of AMI listed by the companies will be driven by customers' adoption of time sensitive rates, automated load control devices, and incentives for responding to price signals. Time sensitive rates for residential customers have been studied in other jurisdictions such as California and Ontario. Those studies have shown varying degrees of success; however, it may be that in a service territory with the unique and complex geographic, climatic, economic, and cultural features of Con Edison's, the results of those experiments are not directly applicable. The pilots must include experiments to test the companies' assumptions about social benefits. The experiments must test a variety of voluntary time sensitive rates, peak reduction rebates, and demand response programs.

The ability to communicate immediately to the company the existence of a service outage as soon as it occurs is clearly a very important feature of AMI. The companies, in describing the pilots, should make clear that this capability will be tested, and should describe the methods that will be used to do the testing.

The companies estimate that the capital expenditures involved in implementing the pilot projects are about \$59 million (net of Westchester AMR meter costs) and annual O&M costs are about \$2 million. One of our concerns relates to the uncertainty of the cost estimates. In addition, the pilot costs seem large for projects that may not lead to full deployment. The companies propose pre-deployment projects totaling half a million meters. While the pilots should be large enough to produce statistically significant results that are representative of the companies' diverse customer base, the companies must consider whether the reduction in knowledge learned from smaller pilots would be acceptable as a consequence of putting a smaller amount of money at risk.

-17-

Case No. 07-589-GA-AIR Supp. Attach. PGS-1 Page 18 of 24

CASES 94-E-0952, et al.

The Westchester pilot raises some issues that do not arise in the other pilots. Since the Westchester area in which the pilot is to be located already has been provisioned with AMR equipment, the costs to upgrade it to include AMI capabilities are less than for the other parts of the companies' service territories. Similarly, because the capability of the upgraded AMR system falls short of a full AMI with two-way communications, the demand response benefits will likely be less than would be achieved from a full AMI. In addition, the savings in operating costs associated with automated meter reading are achievable through the existing AMR system, and therefore, are not part of the benefits of upgrading to an AMIlike system. Given the important factual differences between Westchester and other areas, the companies should perform a separate benefit-cost analysis for the area of Westchester that already has AMR equipment.

In addition, the companies propose a Westchester pilot consisting of 300,000 meters, which is triple the number of meter points included in the Queens and Bronx/Manhattan proposals, and constitutes a majority of the electric and gas meters located in Westchester. It is unclear to us that a project of this scale is required to demonstrate the efficacy of a particular technological approach or to confirm estimates of costs and benefits. The companies' submission lacks an explanation of why this number of meter points is required to meet the Westchester pilot's goals.

AMI Minimum Functionalities

We are likewise uncertain that the specific technologies selected by the companies would be capable of all of the uses we expect. In our AMI Order, we adopted a broad definition of "advanced metering" that intentionally avoided detailed specifications, because we did not want to include

-18-

feature requirements that might favor one manufacturer's product over another, or to limit innovative solutions that had not been considered. Nevertheless, it is difficult to evaluate the companies' proposal in the absence of a set of minimum functionalities against which to measure it.

Staff has, therefore, developed draft minimum functionalities that have been issued for comment in this proceeding.⁶ Comments received in response to the Notice may be reflected in subsequent orders by the Commission, including the adoption of minimum AMI functionalities. It is expected that a set of minimum AMI functionalities can both provide greater consistency and ensure a minimum set of parameters to determine whether AMI funding is well spent. Our approval will be contingent on the companies certifying that their AMI equipment provides the minimum functionalities, once established.

Accounting, Ratemaking and Rate Impacts

Consideration of the companies' proposed AMI Plan comes at a time of strong upward pressure on utility rates. For example, both Con Edison and Orange and Rockland have pending electric rate case filings seeking total delivery rate increases approaching \$1.3 billion. The \$713 million AMI program cost is a significant additional future cost whose potential offsetting benefits are far from clear or certain at this point.

While the companies' proposal does not directly address these considerations, it is imperative that we carefully monitor the results of any AMI pilot program to determine if actual results mirror initial expectations. This is best accomplished through the establishment of accounting rules and procedures designed to identify and isolate all the costs and

⁶ Cases 94-E-0952, <u>et al.</u>, <u>supra</u>, Notice Seeking Comment (issued October 10, 2007).

benefits associated with the AMI pilot program and to track such costs and benefits over the life of the program.

An important initial step in this approach is for the companies to identify with specificity all accounts in which they expect to incur costs and/or realize savings from the AMI pilot and to fully explain how the costs and benefits will be allocated between electric and gas operations. This information will enhance our ability to assess the economics of AMI in order to assist us in reaching a fully informed decision regarding whether AMI should be deployed on a wide-scale basis and will also enable us to ensure that the rates we set to cover the pilot programs properly reflect the costs and benefits derived from the AMI pilot.

Con Edison and Orange and Rockland also expressed the concern that lost revenues may occur as the result of the AMI program. While such losses are possible, the methodology for their measurement is unclear and their very existence uncertain due to the revenue reconciliation provisions in the gas and electric revenue decoupling mechanisms that will likely be in place for both Con Edison and Orange and Rockland in the future.

The companies have proposed that a surcharge mechanism be employed to collect the costs associated with the AMI pilot until such time that base rates are reset to include such costs. While such an approach is generally reasonable, we are not adopting it at this point because we are concerned about short and long term effects of AMI on customer rates and bills. More specifically, it is not our intention to significantly increase utility rates in the short run to cover AMI costs when the likely cost-offsetting benefits of the program are longer term in nature. A ratemaking approach that reasonably matches the

-20-

expected costs and benefits of AMI is appropriate under these circumstances to mitigate customer rate and bill impacts.⁷

Accordingly, we will allow the companies to proceed only with the proposed pre-deployment demonstration projects, and only upon our approval of, a supplemental filing, to be made within 60 days of our adoption of set of minimum AMI functionalities, that addresses the deficiencies outlined here. Specifically, the supplemental filing shall include:

- (a) Detailed descriptions of the pre-deployment pilot projects, including detailed schedules, milestones, checkpoints and criteria for decision-making at each stage, and a proposed deadline for reporting on the results of the pilots.
- (b) A revised benefit-cost analysis, using updated estimates of benefits and costs, and performed according to the practices and procedures customarily utilized in the economic analysis of energy efficiency programs. The revised benefitcost analysis should include a separate set of results for the portion of the company's Westchester service area for which AMR meters have already been deployed.
- (c) A consideration of the number of meter points required to meet the pilot's goals and a description of any changes to the size and associated costs of the pilot that result from this analysis. It must also include a discussion of how the companies will cope with cost overruns and an exit strategy if costs cannot reasonably be contained. The portion of the estimated total cost of the pilot that is associated with the Westchester area that already has AMR meters should be separately shown.

⁷ MI's concerns regarding who should pay implementation costs are premature. We are not requiring full scale implementation of electric and/or gas advanced metering upgrades at this time, nor are we making any determinations with regard to cost recovery for any prospective future implementation of AMI.

Case No. 07-589-GA-AIR Supp. Attach. PGS-1 Page 22 of 24

CASES 94-E-0952, et al.

- (d) Proposals for a range of time-sensitive rate offerings, describing rate structures that will be offered, the customer segments that will be targeted, the kinds of marketing and promotion that the company will undertake, what kind of outreach and education of customers will be pursued, and the methods that will be used to measure the energy efficiency, demand response and other benefits produced. A detailed description of the method(s) that will be used to test how well the AMI systems detect and communicate information about outages.
- (e) A certification that the selected AMI equipment satisfies the set of minimum AMI functionalities, once adopted by the Commission. In any area where the companies' AMI technologies will not meet the standard, they shall provide a justification for why the standard should be waived.⁸
- (f) A detailed accounting proposal designed to identify and isolate all the costs and benefits of the AMI pilot program, identify lost revenues not otherwise accounted for through operation of revenue decoupling mechanisms, and proposes cost recovery that matches costs with future benefits and addresses our concerns regarding short run rate impacts.

While we will await the companies supplemental filing before passing judgment on the Plan as a whole, a few matters are ripe for determination now. Only Commission-approved devices shall be deployed in the pre-deployment demonstration projects. If the devices selected by the companies have not been submitted for Commission review and approval, then the

⁸ For example, the companies' proposal for Westchester would not include two-way communications capability. Given Con Edison's substantial investment in AMR in Westchester, the companies must demonstrate that their proposal to migrate to a fixed network offers, at a lower cost, many of the functions that would be available from AMI systems having full two-way connectivity.

companies are directed to do so before moving forward with implementation.

The New York market has a unique variety of market participants. In the AMI Order, utilities were "directed to offer to customers of competitive providers access to the same advanced metering infrastructure, upon identical rates, terms and conditions on a non-discriminatory basis, as provided to the electric utility's retail customers."⁹ Because we expect some of the benefits and innovations in rate structures and demand response to be driven by the actions of parties other than the companies, the companies are directed to exert efforts to include unaffiliated ESCOs and unaffiliated demand response providers in the pre-deployment projects.

Finally, we remind the companies that termination of service for nonpayment is subject to Home Energy Fair Practices Act (HEFPA) regardless of whether that disconnection is performed by physical (on site) or electronic (remote) service shut off. No utility may utilize AMI for remote disconnection of service for nonpayment unless it has taken all of the prerequisite steps required by HEFPA, including the requirement of 16 NYCRR §11.4(a)(7) that customers must be afforded the opportunity to make payment to utility personnel at the time of termination. This process requires a site visit, even where a remote device is utilized.

CONCLUSION

While the companies' Plan complies with the requirements set forth in our AMI Order, we do not authorize its implementation at this time. Cost-effective system-wide implementation relies heavily on the value of potential societal

-23-

⁹ AMI Order, p. 13.

benefits, whose forecasted values are highly uncertain, and on a rapidly developing technology, which has yet to be proven feasible in a unique service territory such as Con Edison's. Consequently, we will only allow the companies to proceed with the proposed pre-deployment demonstration projects, and only upon Commission approval of a supplemental filing that addresses the deficiencies discussed above.

Upon completion of those projects, or at a reasonable time during their operation, the companies shall submit a report to us detailing the results gained from the pre-deployment projects and a re-evaluation of the cost-effectiveness of system-wide AMI deployment. Only upon subsequent approval, and subject to any further terms and conditions we may impose, the companies could then complete system-wide deployment of AMI.

The Commission orders:

1. Consolidated Edison Company of New York, Inc. and Orange and Rockland Utilities, Inc., are directed to file, within 60 days of our adoption of set of minimum AMI functionalities, supplemental plans for their proposed AMI pilots for our approval before going forward with implementation, consistent with the discussion in the body of this Order.

2. These proceedings are continued.

By the Commission,

(SIGNED)

JACLYN A. BRILLING Secretary

-24-