STATE OF ILLINOIS
ILLINOIS COMMERCE COMMISSION

COMMONWEALTH EDISON COMPANY	:	
	:	
	:	
Approval of Energy Efficiency and Demand	:	Docket No. 07-0540
Response Plan Pursuant to Section 12-103(f)	:	
Of the Public Utilities Act	:	

DIRECT TESTIMONY OF RALPH ZARUMBA

ON BEHALF OF

THE BUILDING OWNERS AND MANAGERS ASSOCIATION OF CHICAGO

DECEMBER 14, 2007

I. Introduction and Qualifications

Q. Please state your name and business address.

A. My name is Ralph Zarumba. My business address is 8301 Greensboro Drive, McLean, Virginia, 22102.

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

A. I am employed by Science Applications International Corporation ("SAIC") as Director – Economic Analysis.

Q. On whose behalf are you testifying in this proceeding?

A. I am testifying on behalf of The Building Owners and Managers Association of Chicago ("BOMA/Chicago"). BOMA/Chicago is comprised of 260 office building members as well as the 8,000 large and small businesses, governmental agencies, not-for-profit organizations, and other tenants employing over 240,000 people who work in those buildings. BOMA/Chicago's membership accounts for over 82% of all the office square footage in Chicago and approximately 5% of the total customer load of Commonwealth Edison Company ("ComEd").

Q. Would you please summarize your professional qualifications?

A. I have 22 years experience in the energy industry as an economist. My resume is provided in BOMA/Chicago Exhibit 1.1.

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

A. Yes, I have testifies before the ICC and the state regulatory commissions of Massachusetts, Rhode Island and Wisconsin. I have also testified

before the Federal Energy Regulatory Commission and appeared as an expert witness in other legal proceedings associated with energy matters.

II. Purpose of Testimony

Q. What is the purpose of your testimony?

A. I preface my direct testimony with the statement that the accelerated schedule in this proceeding is not allowing for an exhaustive investigation of the policies and processes being set forth or an examination of the details for the implementation of the energy efficiency programs proposed by the Company. Although BOMA/Chicago acknowledges that an accelerated scheduled has been specified by statute, we also suggest that the Commission allow for flexibility to change programs and policies in the future, especially given that the programs implemented will continue for at least three years.

My testimony addresses the document entitled 2008-10 Energy Efficiency and Demand Response Plan filed by Commonwealth Edison ("ComEd" or "the Company") in this proceeding and specifically addresses certain issues in the pre-filed testimonies of ComEd Witness Mr. Paul Crumrine. I also have included policy statements regarding electricity pricing and their impact on energy efficiency.

Q. How is the balance of your testimony organized?

A. My testimony is organized as follows:

Section III summarizes my Conclusions and Recommendations;

Section IV addresses my proposed changes to the surcharges that will support the energy efficiency programs addressed in this proceeding; Section V discusses potential problems when energy efficiency is implemented and the utility is not using marginal cost pricing.

III. Conclusions and Recommendations

Q. Please list your conclusions and recommendations.

A. First, BOMA/Chicago is offering an alternative approach to calculating the surcharge mandated by Section 12-103(d). The alternative approach I have sponsored to these calculations better reflects the spirit of the statute and is more equitable to specific customer groups.

Second, the Commission would best serve the needs of the customers if they recognized that providing real time information to customers regarding their electric usage is a cost-effective energy efficiency measure. BOMA/Chicago proposes that ComEd make this information available to customers free or at a minimal cost.

Third, BOMA/Chicago suggests that the Commission reconsider their abandonment of marginal cost analyses in allocating the utility revenue requirement and setting prices. Embracing pricing based upon allocated cost of service analysis while implementing utility administered energy efficiency programs can potentially be counter-productive.

IV. Energy Efficiency is Promoted if Energy Usage Information is Inexpensive and Easily Available

Q. Is information an important element in implementing electric energy efficiency programs?

A. Yes. Information on energy consumption is critical if the goal is the efficient consumption of electric power. First, electric power cannot be stored and therefore the price is extremely volatile. Even a relatively small shift in consumption from one time period to another can potentially trigger significant energy savings, a reduction in the amount of effluents emitted by electric generation and the efficient use of electric power infrastructure. Large commercial office space, such as the type operated by BOMA/Chicago, has the ability to control and shift load from high cost periods to low cost periods. However, real time information is required in order to implement these changes in behavior.

Q. Is this information currently available to customer?

A. Some information is available at a substantial cost. However, BOMA/Chicago suggests that if this information is being used as part of an energy efficiency program the cost of this information should be considered an energy efficiency program and therefore subsidized using funding collected under Section 12-103(d).

Q. Are you aware of any similar programs or studies that support this proposal?

A. Yes. First, the Public Utilities Commission of Ohio Staff (PUCO Staff) in Docket 05-1500-EL-COI investigated similar issues when investigating the feasibility of Advanced Metering Infrastructure. In the finding of the Staff Report the PUCO Staff found "... that staff should analyze the cost benefit of AMI deployment strategies ... the analysis should include system benefits that may accrue to the EDU, customer benefits, and societal benefits."[1] Although this order does not specifically address the issue of using customer information as an energy efficiency measure, it does acknowledge it's importance for implementing energy efficiency and demand response programs. Furthermore, this order finds that systems

[1] http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=764CDA674553D8F5852571D80068385F

benefits accrue to electric distribution companies from the implementation of this strategy.

Q. Are you aware of any studies which conclude that providing additional metering and information capabilities can reduce the emission of effluents?

A. Yes. A United Kingdom group, the Carbon Trust, has published a report that estimates a significant reduction in carbon emissions for small to medium-sized businesses. The executive summary of this report is provided as BOMA Exhibit 1.2.

Q. Is BOMA/Chicago proposing the implementation of AMI on a system-wide basis?

A. No. An investment of that magnitude is significant and requires careful investigation before such a commitment is placed upon the Company. The BOMA/Chicago proposal much more modest. BOMA/Chicago is proposing that electric consumption information on a basis that would enable the implementation of demand response be considered as an energy efficiency program and be provided subsidies like many of the other measures proposed in this proceeding.

Q. What additional equipment is required by the customer that is currently not being provided by the Company?

A. First, in order to react to price signals from organizations such as PJM, interval meters and data feeds require much smaller intervals then have been provided in the past. For example, ComEd's tariffs have traditionally been based upon 30 minute integrated demand readings. However, in order to react to PJM price signals the interval must be shortened to 5 minutes.

Q. Is this equipment available from ComEd?

A. Potentially, but at a significant cost to the customer. For example, some residential customers have real time meters in order to participate in the residential real time program. For larger customers, this equipment is the missing lynchpin in establishing discerning efficiency investment opportunities and participation in robust demand response programs.

VI. Calculation of Section 12-103(d) Surcharges

Q. Have you reviewed ComEd Witness Crumrine's calculation of the Section 12-103(d) surcharges (ComEd Exhibits 5.1-5.3)?

A. Yes.

Q. Do you agree with Mr. Crumrine's approach to this calculation?

A. No. I disagree with Mr. Crumrine's approach to this calculation and have submitted an alternative calculation of the surcharge.

Q. Please describe you process for the review and the development of your alternative calculations of the surcharge.

A. The information for the basis of my alternative calculation of the surcharge was ComEd Exhibits 5.2 and 5.3. These schedules detail the estimated average cost of electric service by distribution delivery class.

Q. Have you performed an exhaustive review of these calculations and their inputs?

A. No. Given the accelerated schedule associated with this proceeding I was unable to perform a detailed review. Therefore, my testimony should not be interpreted as endorsing the assumptions or calculations in ComEd Exhibits 5.2 and 5.3. For example, Mr. Crumrine (Crumrine Direct page 14 line 320-332) states that the prices paid by customers receiving service were estimated using various inputs including the output of a market price forecast produced by the Northbridge Group. A reasonable review of such a model requires a significant effort reviewing the inputs such as projections of fuel prices, growth in peak load and sales, macroeconomic assumptions such as the overall level of inflation, assumptions about the installed cost, efficiency and non-fuel operations and maintenance of new generation technology (e.g. combined-cycle combustion turbines, simple-

cycle combustion turbines, coal plants, wind plants and other technologies) and other critical inputs. The next step of such a review would be to evaluate the internal algorithm used by the model to produce the results and determine if it is appropriate for the proposed study. Furthermore, market price models have different algorithms for producing price forecasts which are appropriate or inappropriate depending upon the use of the forecast and a review would require assurance that the specific algorithm used in that model was appropriate for the specific analysis in question. Last, a review of the output must be performed in ensure internal consistency with the input assumptions and overall reasonableness.

Q. Please describe you Exhibit BOMA 1.3

A. Column (a), (b) and (c) in BOMA Exhibit 1.3, page 1 correspond to June 1, 2006 through May 31, 2007 time period for ComEd Exhibit 5.1, Columns (A), (B) and (C). In other words, I have adopted the calculations and assumptions sponsored by Mr. Crumrine (but do not necessarily endorse the underlying calculations or assumptions). Pages 2 and 3 of BOMA Exhibit 1.3 is the same information for June 1, 2007 through May 31, 2008 and June 1, 2008 through May 31, 2009.

Q. Does your proposed calculation differ from the Company's proposal at this juncture?

A. Yes. BOMA Exhibit 1.3, page 4 details the alternative calculation by distribution delivery class. Please note, the total for ComEd as a whole match those proposed by the Company in ComEd Exhibit 5.3, Column G. The average factor for 2008 is 0.042¢/KWH, the average factor for 2009 is 0.086¢/KWH and the average factor for 2010 is 0.132¢/KWH.

Q. Does your alternative calculation of the Section 12-103(d) surcharge the total revenues received from retail customer or expose ComEd to any additional risk?

A. No. The alternative approach that is detailed below does not: (1) Reduce the level of revenues which the Company will collect from customers; (2) Expose the Company to an increased or decreased level of risk of over- or under-collection of revenues; and, (3) In no way will impede the Company from implementing any programs proposed in this proceeding when compared to their version of the calculation.

Q. How does your calculation differ from the one proposed by Mr. Crumrine?

A. The alternative calculation that I propose differentiates customers by Distribution Delivery Class and proposes a volumetric rate (cents per KWH) which is applied to each Distribution Delivery Class. In contrast, Mr. Crumrine's calculation creates a single factor applied to all retail customers of the Company.

Q. Does the alternative calculation provide for a more equitable collection of revenues?

A. Yes. The difference between the alternative approach and the method proposed by ComEd Witness Crumrine is the application of the Section 12-103(d) surcharge. Mr. Crumrine's proposal applies the surcharge to the total retail revenues of the company. In contrast, I apply the percentage to each retail rate class.

Q. Do you feel that the ComEd Proposal is consistent with the legislation?

A. First, I am not an attorney and cannot render a legal opinion. However, from a policy standpoint I cannot accept the proposed ComEd calculation after reviewing the legislation. I suggest that the alternative proposal which I propose is superior from a policy standpoint and is consistent with the legislation. In the alternative, I would find it reasonable to group customers of similar size/characteristics to together for the purposes of calculating the surcharge.

Q. Please summarize your conclusion.

A. I recommend that the Commission reject the Company's calculation of the Section 12-103(d) surcharge and adopt the approach I have proposed.

VII. Requiring Energy Efficiency While Setting Prices Based Upon Average Cost is Counter Productive

Q. What approach is currently used by ComEd for their cost of service analyses?

A. The Company currently uses Fully Allocated Cost of Service Studies to allocate costs and establish pricing.

Q. Do you feel that any inefficiencies are introduced when using pricing determined from an Allocated Cost of Service Study while simultaneously implementing energy efficiency?

A. Yes. A utility implementing energy efficiency is doing so because certain segments of electric usage is in excess of marginal cost. However, an Allocated Cost of Service Study is based upon average cost principles. A difference can exist between the marginal cost price signal associated with energy efficiency and the average cost price signal associated with the utility tariff. The difference between the two price signals could trigger customer confusion.

Q. Do you propose any specific action in this proceeding regarding ComEd's electric tariffs?

A. No. This matter should be addressed in a general rate case such as the one that the Company currently has filed before the Commission. However,

the design of a utility tariff can influence the effectiveness of energy efficiency programs such as the one that is being debated in this proceeding.

Q. Does this conclude your testimony?

A. Yes.

BOMA Exhibit 1.1

Ralph Zarumba

Areas of Qualification:

Mr. Zarumba has over 22 years experiences in electric and natural gas regulatory matters, electric wholesale modeling, financial analysis for the merchant electric generation business.

Areas of Expertise:

Energy markets analysis, infrastructure needs assessments for effectively meeting demand needs.

Education:

M.A in Economics, DePaul University 1986
B.S. in Economics, Illinois State University, 1982

Employment History:

December 2004 to the present – Science Applications International Corporation, Director – Economic Analysis

December 2001 to December 2004 – Zarumba Consulting. Inc., President

May 2000 to December 2001 – Sargent and Lundy Consulting Group, Senior Principal Consultant

December 1996 to May 2000 – Analytical Support Network, Inc. – President

January 2006 to December 1996 – Synergic resources Corporation – Manager – Strategic Pricing

March 2004 to January 2006 – San Diego Gas and Electric Company – Pricing Specialist

May 1990 to March 2004 – Wisconsin Electric Power Company – Rate Specialist

May 1988 to May 1990 – Eastern Utilities Associates Service Company – Rate Analyst 4

March 1985 to May 1988 – Illinois Power Company – Rate Analyst

Relevant Experience

<u>International Experience</u>

- As a team member working for U.S. AID prepared a tariff review for the Republic of Macedonia.
- Mr. Zarumba constructed a tariff model for the Republic of Macedonia.
- On behalf of U.S. AID Mr. Zarumba worked with National Economic Research Associates designing the electric market for the Republic of Macedonia.
- Mr. Zarumba completed a tariff implementation plan proposal for the privatization of the distribution companies of the Bulgarian electric Utility.

- Mr. Zarumba headed a team implementing regulatory procedures and training three regulatory staffs for the electric power industry in Bosnia and Herzegovina.

- On behalf of an industrial firm Mr. Zarumba conducted a study of the electric power market in El Salvador including a quantification of the level of generation market power using the Lerner Index.

- Currently assisted electric regulator in Albania in various electric tariff and privatization matters.

Transmission Experience

- Mr. Zarumba prepared the pricing for the Open-Access Transmission Tariff for San Diego Gas and Electric and was the company's witness in their filing with the FERC.

- While working on a project team assisting the Long Island Power Authority purchase the distribution, transmission and regulatory assets of the Long Island Power Authority Mr. Zarumba prepared a non-jurisdictional open-access transmission tariff for the Long Island Power Authority.

Generation Market Forecasts

- Mr. Zarumba has prepared a number of electric market price forecasts for many regions of the United States and Central America.

- Mr. Zarumba supported the wholesale electric pricing and infrastructure analysis for a Least-Cost Resource Plan for San Diego County.

- Mr. Zarumba prepared an analysis of the saturation of coal-fired electric generation technology in the Western Electric Coordinating Council.

- For a confidential client Mr. Zarumba prepared a portfolio analysis for electric generation assets that measured the volatility of cash flows using scenario and Monte Carlo techniques. This project required the use of a commercial market price model (Market Power© and improving the database provided with the model with more accurate information regarding generating unit characteristics, market attributes and macroeconomic variables.

- Managed a team that prepared a long-term capacity and energy forecast for a medium-sized municipal utility.

- For Manitowoc Public Utilities prepared a resource plan evaluating various generation expansion options.

Domestic Pricing

- Mr. Zarumba prepared proposals for ancillary services pricing based upon market based mechanisms for San Diego Gas and Electric Company (1994-5).

- Completed the development of wholesale and retail rate designs for a southeastern G&T, an analysis of stranded cost exposure for a northeastern utility, and prepared a strategic plan for a large municipal utility.

- Prepared analysis of stranded costs using the innovative forward curve approach to electric pricing which was used by MMWEC in the transition to a competitive electric environment.

- Developed a proposal for electric generation transfer pricing that would be used as a transition mechanism between the existing vertically integrated utility and a deregulated environment.

- Developed a generation buy-back program that included the calculation of capacity and energy payments.

- Represented the Building Owners and Managers Association of Chicago (BOMA/Chicago) before the Illinois General Assembly on electric deregulation matters (1997).

- Testified before the Illinois Commerce Commission on behalf of BOMA/Chicago in various proceedings (1997-1999).

Miscellaneous

- Developed an innovative econometric benchmarking analysis of electric utility operations. This project required compiling a database from multiple commercial and governmental sources in order to run a polled timer series analysis to measure relative levels of efficiency for vertically integrated utilities.

- Coordinated a team that prepared a detailed study evaluating a major food processor's cogeneration potential and examined serving thermal requirements with non-cogeneration options.

- On behalf of a Midwestern Law Firm Mr. Zarumba has advised clients on retail energy procurement strategy after a supplier defaulted on power supply contracts.

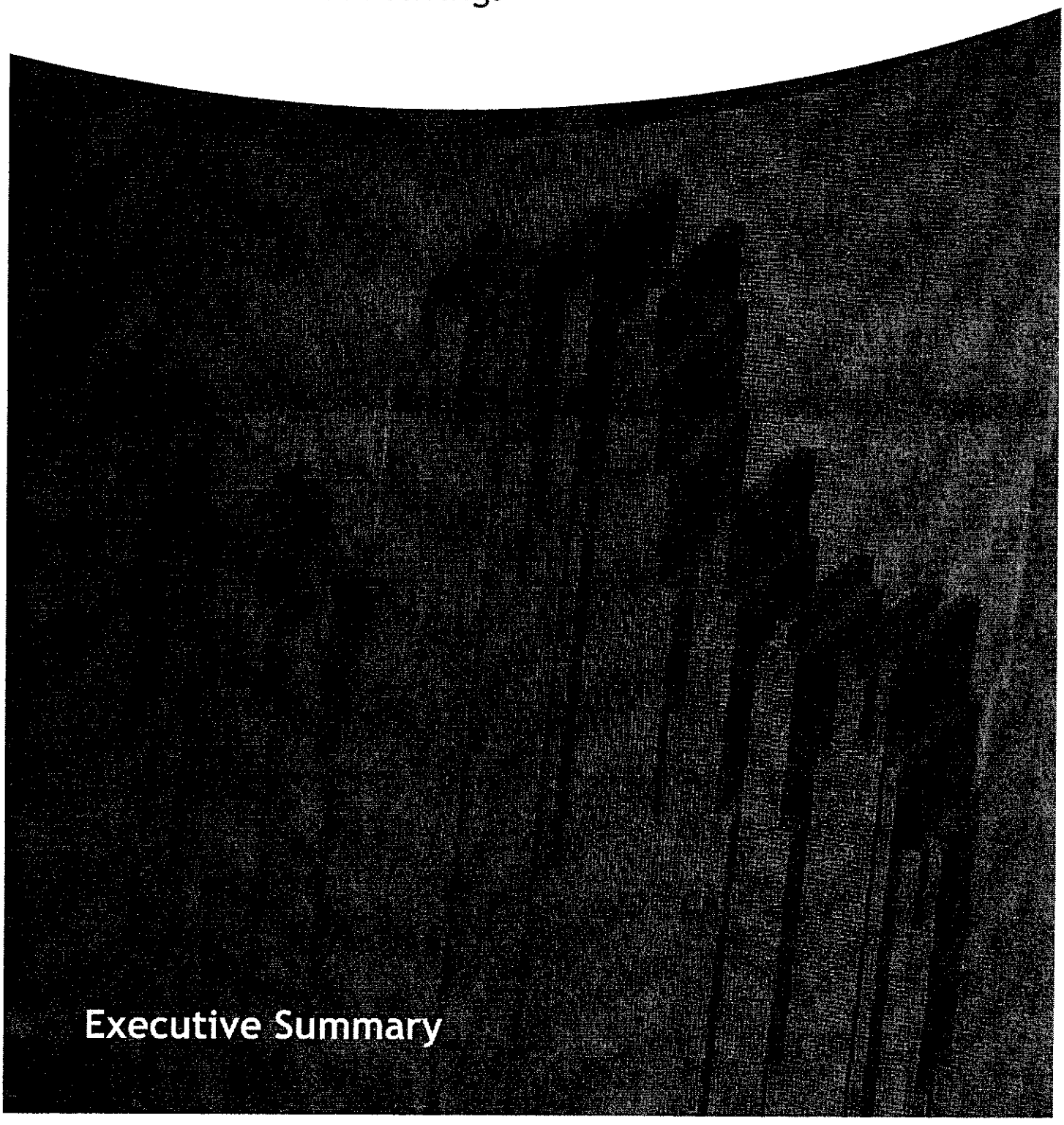
BOMA Exhibit 1.2

CARBON TRUST

Making business sense of climate change

Advanced metering for SMEs

Carbon and cost savings



Executive Summary

The Carbon Trust would like to thank everyone who has contributed to this report, either through direct involvement in the trial, general discussions or review of findings and implications.

Executive summary

Widespread use of advanced metering by SMEs can provide cost-effective carbon savings for the UK and significant energy savings for customers. The Carbon Trust's field trial has demonstrated the potential benefits, identified key barriers and clarified the action required by the SME community, Government and energy suppliers to accelerate the market.

Advanced metering can enable businesses to identify energy, cost and carbon savings by providing detailed information about the way in which they use their energy. Although this technology is fairly well established in companies with significant energy demands, it is not widely used by small to medium-sized enterprises (SMEs).

There are over 2.7 million manually-read energy meters in UK SMEs, all of which could be replaced by advanced meters. The energy consumption through these meters is estimated to cost £6.5 billion per year and lead to emissions of over 50 $MtCO_2$ per year.

From 2004 to 2006 the Carbon Trust carried out the first UK field trial of advanced metering for SME users. The trial aimed to demonstrate the potential benefits of the technology and to understand the case for encouraging widespread adoption of advanced metering by SMEs. A total of 582 advanced meters were installed in SMEs across the UK and metering services were provided to these sites by seven different consortia.

> SMEs using advanced metering can identify an average of 12% carbon savings and implement an average of 5% carbon savings.

The study has demonstrated that SMEs using advanced metering can identify an average of 12% carbon savings and implement an average of 5% carbon savings through reduced utility consumption, as shown in Figure 1. The SMEs involved in the trial achieved average annual savings of over £1,000 and 8.5 tCO_2 per site.

Figure 1 *Average % carbon savings in SMEs using advanced metering*

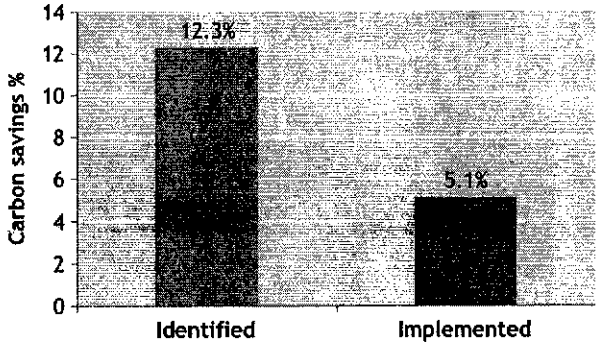
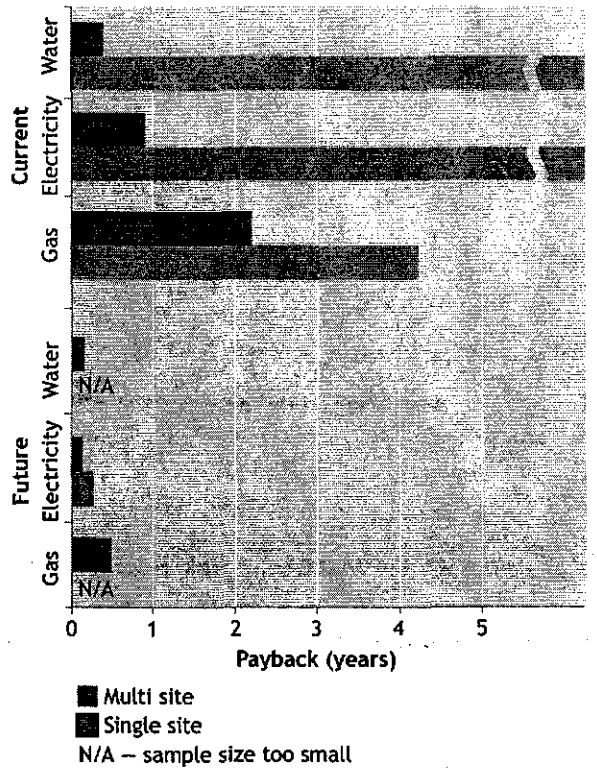


Figure 2 shows the paybacks modelled for single and multi-site companies. Based on current meter and service costs, there is already a very strong business case for using advanced metering at multi-site SMEs, such as retail and wholesale chains, and for energy-intensive SME sectors, such as manufacturing. For single-site SMEs with lower energy consumption, the business case is less attractive with paybacks over five years in most cases. However, modelling has also been carried out using predicted costs and this has indicated that in future a clear business case will also exist for single-site SMEs with lower consumption levels, as the costs of metering services will be driven down by increased innovation, automation and economies of scale.

Figure 2 Advanced meter payback periods for SME sites based on current and future costs



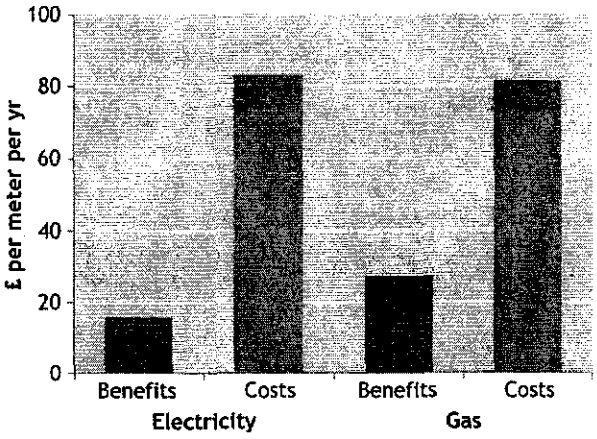
There is already a very strong business case for using advanced metering at multi-site SMEs and for energy-intensive SME sectors.

A variety of different metering services were included in the trial, ranging from basic data provision to detailed advice via phone calls and site visits. The highest energy savings were achieved by providing consumption profiles and energy saving recommendations via email. This is a significant finding which suggests that low-cost metering services could be provided using automated systems in future.

Although some SMEs were initially sceptical about the potential benefits of advanced metering, there was a widespread recognition of these once the services had been used. Of the many customers that were offered the chance to continue their metering service on a full commercial basis, over 80% opted to continue at the end of the trial.

From the perspective of energy suppliers, there is likely to be a good business case for providing metering services to certain sections of the SME community which have large consumption or concentrated sites. However, as Figure 3 illustrates, the current costs of providing advanced metering services to all SME users significantly outweigh the potential benefits. Furthermore, even as costs of technology continue to come down in future the business case for energy suppliers appears to remain marginal overall.

Figure 3 Supplier costs and benefits for widespread roll-out of advanced gas and electricity metering to the SME community, using current costs

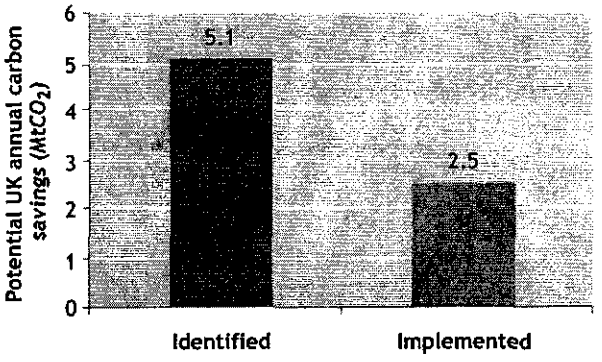


The trial findings highlight a significant barrier to the wider uptake of advanced metering due to the insufficient financial incentives for energy suppliers.

Energy suppliers can benefit by altering their business models to realise new opportunities, such as sales of higher-margin metering services. They may also benefit from enhanced customer acquisition and retention. However, the trial findings clearly highlight a significant barrier to the wider uptake of advanced metering due to the insufficient financial incentives for energy suppliers to provide these services on a widespread basis. Given this context, if the SME advanced metering market is left to grow organically it is likely to develop in a fragmented way, with slow growth and limited economies of scale being achieved.

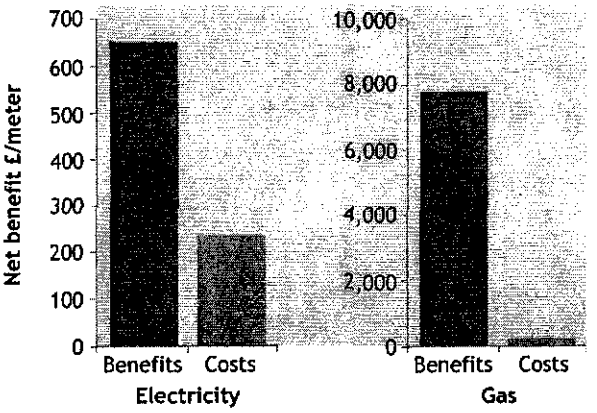
From the overall UK perspective, widespread adoption of advanced metering in the SME community represents a significant opportunity for achieving cost-effective carbon savings. Figure 4, which shows the results of the field trial scaled up to the UK level, illustrates that a total of 5.1 $MtCO_2$ savings could be identified and 2.5 $MtCO_2$ savings could be implemented per year. This level of identified savings is equivalent to over 2% of all carbon emissions from UK businesses. Scaling up the results in financial terms indicates that total cost savings of £650 million could be identified and £300 million implemented per year across the SME community.

Figure 4 Field trial carbon savings scaled up to UK level



Furthermore, a very significant proportion of these carbon savings can be achieved with a net financial benefit to the UK. Figure 5 shows that at current costs, there would be a net UK financial benefit from rolling out advanced metering to all but the lowest use groups of SME users[1]. Under expected future costs there would be a net UK benefit for rolling out advanced metering to all business users.

Figure 5 Net UK costs and benefits for advanced metering roll-out to all but the lowest consuming SMEs[1]



In the future annual savings of 5.1 $MtCO_2$ could be identified and 2.5 $MtCO_2$ implemented at no net cost to the UK.

[1] Lowest consuming groups refers to electricity customers in profile classes 3 and 4 and gas customers with annual demand of less than 732 MWh.

In light of the significant cost savings available to SMEs and carbon savings achievable at net financial benefit to the UK, it is essential that the market for advanced metering in SMEs grows as rapidly as possible. Given the lack of incentive for energy suppliers to provide advanced metering services across the entire commercial sector, there is a very strong case for a mandated roll-out of advanced meters for SMEs.

There are various policy options which could be used to achieve a mandated roll-out. The most basic policy measure would be to ensure that advanced meters are installed for all new and replacement meters.

Beyond this the Government could mandate an accelerated roll-out to increase the rate at which existing meter stock is replaced. An accelerated roll-out is likely to be most effective if targeted initially at all high-consumption SME users, where the business case is currently most attractive, and then extended to the wider SME community. Using a 20% accelerated roll-out rate, targeted initially at the highest consumption users, could lead to savings of 1.5 $MtCO_2$ per year by 2012 and 2.5 $MtCO_2$ per year by 2016.

Without a mandated roll-out, widespread uptake of advanced metering by SMEs is highly unlikely and a significant cost-effective carbon saving opportunity will be missed.

Further supporting measures will also be required to ensure that the market grows in a coordinated manner. For example, it is vital that industry-wide standards regarding meter functionality and interoperability are adopted. This work is underway, led by OFGEM, but must be prioritised to ensure that agreement is reached at the earliest possible opportunity. Further measures are also required to ensure that the data from advanced meters is made freely available to the relevant parties and that standards are agreed relating to the frequency and format of data transfer.

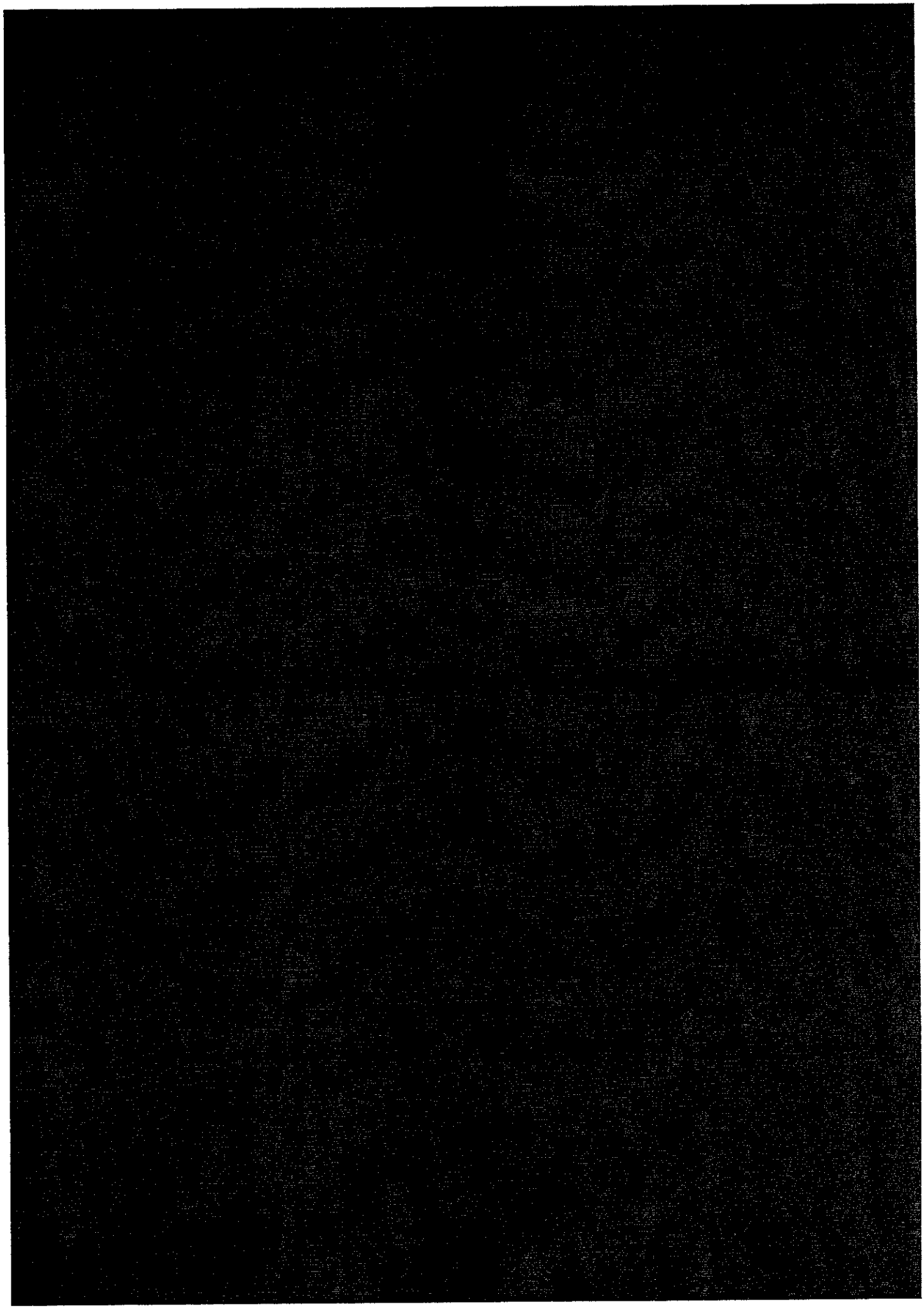
Without a mandated roll-out, widespread uptake of advanced metering is highly unlikely and a significant cost-effective carbon saving opportunity will be missed.

For energy suppliers, roll-out will stimulate the market for innovative new metering services and generate increased customer awareness of the benefits of using such services. Widespread uptake of advanced metering would also help catalyse an associated energy services market, particularly for smaller service providers. It would also put in place an infrastructure of meters capable of supporting further policies to reduce carbon emissions in future.

The following is a summary of the key recommendations coming from the trial:

- Trade bodies, the Carbon Trust and others should continue to promote the benefits of proactive use of advanced meters to the SME community
- Based on the new evidence from this study the Government should take action to ensure a widespread roll-out of advanced metering technology to SME users
- Government should work to ensure that appropriate standards are put in place regarding advanced meter functionality, data availability and data transfer procedures
- Energy suppliers and metering service providers should investigate new business models to provide innovative metering services to their SME clients.

The benefits of advanced metering are clear in terms of cost savings for SMEs and carbon savings for the UK. Action is now required to stimulate the market and ensure a widespread roll-out of this important technology.



www.carbontrust.co.uk
0800 085 2005

The Carbon Trust is a UK-wide company, with headquarters in London, and bases in Northern Ireland, Scotland, Wales, and the English regions.

The Carbon Trust is a private company set up by government in response to the threat of climate change, to accelerate the move to a low carbon economy.

The Carbon Trust works with UK business and the public sector to create practical business-focused solutions through its external work in five complementary areas: Insights, Solutions, Innovations, Enterprises and Investments. Together these help to explain, deliver, develop, create and finance low carbon enterprise.

The Carbon Trust is funded by the Department for Environment, Food and Rural Affairs (Defra), the Department of Trade and Industry (DTI), the Scottish Executive, the Welsh Assembly Government and Invest Northern Ireland.

CARBON TRUST

Making business sense of climate change

The Carbon Trust is a company limited by guarantee and registered in England and Wales under Company number 4190230 with its Registered Office at: 8th Floor, 3 Clement's Inn, London WC2A 2AZ.

Printed on paper containing a minimum of 75% de-inked post-consumer waste.

Published in the UK: May 2007.

CTC714

BOMA Exhibit 1.3

Page 1

Alternative Calculation of Section 12-103(d) Surcharge

June 1, 2006 through May 31, 2007

Distribution Delivery Class	Estimated Retail Revenues (a)	Estimated Energy Delivered (MWH) (b)	Average Revenue Per KWH (c)	Rate Screen (d)	Alternative Calculation (e)	ComEd Proposal (f)
Single Family w/o Space Heat	$ 2,379,989,804	21,810,757	$ 0.10912	0.50%	$ 0.05456	0.04215
Multi Family w/o Space Heat	$ 451,321,514	4,411,745	$ 0.10230	0.50%	$ 0.05115	0.04215
Single Family w/ Space Heat	$ 57,411,812	843,795	$ 0.06804	0.50%	$ 0.03402	0.04215
Multi Family w/ Space Heat	$ 132,874,534	1,807,325	$ 0.07352	0.50%	$ 0.03676	0.04215
Watt-Hour	$ 119,691,182	1,148,227	$ 0.10424	0.50%	$ 0.05212	0.04215
Small Load - 0-100KW	$ 1,017,911,852	11,325,232	$ 0.08988	0.50%	$ 0.04494	0.04215
Medium Load - 100-400KW	$ 828,716,018	10,523,378	$ 0.07875	0.50%	$ 0.03938	0.04215
Large Load - 400-1000KW	$ 772,249,460	9,979,962	$ 0.07738	0.50%	$ 0.03869	0.04215
Very Large Load - 1-10MW	$ 1,373,635,689	19,705,002	$ 0.06971	0.50%	$ 0.03485	0.04215
Extra Large Load - >10MW	$ 409,808,176	7,053,497	$ 0.05810	0.50%	$ 0.02905	0.04215
Railroad	$ 31,967,628	518,955	$ 0.06160	0.50%	$ 0.03080	0.04215
High Voltage	$ 88,767,936	1,731,044	$ 0.05128	0.50%	$ 0.02564	0.04215
Fixture-Included Lighting	$ 28,481,159	143,453	$ 0.19854	0.50%	$ 0.09927	0.04215
Dusk to Dawn Lighting	$ 24,965,523	541,082	$ 0.04614	0.50%	$ 0.02307	0.04215
General Lighting	$ 2,926,919	39,569	$ 0.07397	0.50%	$ 0.03699	0.04215
Total	**$ 7,720,719,206**	**91,583,023**	**$ 0.08430**	**0.50%**	**$ 0.04215**	**0.04215**

BOMA Exhibit 1.3

Page 2

Alternative Calculation of Section 12-103(d) Surcharge

June 1, 2007 through May 31, 2008

Distribution Delivery Class		Estimated Retail Revenues (a)	Estimated Energy Delivered (MWH) (b)		Average Revenue Per KWH (c)	Rate Screen (d)		Alternative Calculation (e)	ComEd Proposal (f)
Single Family w/o Space Heat	$	2,444,392,787	22,246,021	$	0.10988	0.50%	$	0.05494	0.04369
Multi Family w/o Space Heat	$	535,464,610	4,486,507	$	0.11935	0.50%	$	0.05967	0.04369
Single Family w/ Space Heat	$	62,375,803	819,979	$	0.07607	0.50%	$	0.03804	0.04369
Multi Family w/ Space Heat	$	133,509,515	1,669,495	$	0.07997	0.50%	$	0.03998	0.04369
Watt-Hour	$	65,997,929	515,770	$	0.12796	0.50%	$	0.06398	0.04369
Small Load - 0-100KW	$	1,101,067,539	11,802,632	$	0.09329	0.50%	$	0.04664	0.04369
Medium Load - 100-400KW	$	920,382,524	11,146,694	$	0.08257	0.50%	$	0.04129	0.04369
Large Load - 400-1000KW	$	762,308,523	10,354,639	$	0.07362	0.50%	$	0.03681	0.04369
Very Large Load - 1-10MW	$	1,442,904,564	19,695,667	$	0.07326	0.50%	$	0.03663	0.04369
Extra Large Load - >10MW	$	290,150,692	4,356,617	$	0.06660	0.50%	$	0.03330	0.04369
Railroad	$	35,975,404	522,291	$	0.06888	0.50%	$	0.03444	0.04369
High Voltage	$	281,392,022	4,820,833	$	0.05837	0.50%	$	0.02918	0.04369
Fixture-Included Lighting	$	28,931,124	136,732	$	0.21159	0.50%	$	0.10580	0.04369
Dusk to Dawn Lighting	$	26,342,824	438,025	$	0.06014	0.50%	$	0.03007	0.04369
General Lighting	$	10,160,366	151,602	$	0.06702	0.50%	$	0.03351	0.04369
Total	**$**	**8,141,356,226**	**93,163,504**	**$**	**0.08739**	**0.50%**	**$**	**0.04369**	**0.04369**

BOMA Exhibit 1.3

Page 3

Alternative Calculation of Section 12-103(d) Surcharge

June 1, 2008 through May 31, 2009

Distribution Delivery Class	Estimated Retail Revenues (a)	Estimated Energy Delivered (MWH) (b)	Average Revenue Per KWH (c)	Rate Screen (d)	Alternative Calculation (e)	ComEd Proposal (f)
Single Family w/o Space Heat	$ 2,467,124,420	22,294,636	$ 0.11066	0.50%	$ 0.05533	0.04611
Multi Family w/o Space Heat	$ 532,495,052	4,458,264	$ 0.11944	0.50%	$ 0.05972	0.04611
Single Family w/ Space Heat	$ 67,615,112	827,805	$ 0.08168	0.50%	$ 0.04084	0.04611
Multi Family w/ Space Heat	$ 147,597,097	1,719,244	$ 0.08585	0.50%	$ 0.04292	0.04611
Watt-Hour	$ 70,568,043	554,693	$ 0.12722	0.50%	$ 0.06361	0.04611
Small Load - 0-100KW	$ 1,120,606,533	11,755,025	$ 0.09533	0.50%	$ 0.04766	0.04611
Medium Load - 100-400KW	$ 991,199,424	11,267,471	$ 0.08797	0.50%	$ 0.04399	0.04611
Large Load - 400-1000KW	$ 876,681,268	10,595,616	$ 0.08274	0.50%	$ 0.04137	0.04611
Very Large Load - 1-10MW	$ 1,626,139,443	19,933,065	$ 0.08158	0.50%	$ 0.04079	0.04611
Extra Large Load - >10MW	$ 327,243,818	4,380,774	$ 0.07470	0.50%	$ 0.03735	0.04611
Railroad	$ 41,116,754	530,060	$ 0.07757	0.50%	$ 0.03878	0.04611
High Voltage	$ 306,690,499	4,673,023	$ 0.06563	0.50%	$ 0.03281	0.04611
Fixture-Included Lighting	$ 29,392,698	137,394	$ 0.21393	0.50%	$ 0.10696	0.04611
Dusk to Dawn Lighting	$ 33,688,859	539,108	$ 0.06249	0.50%	$ 0.03125	0.04611
General Lighting	$ 5,503,527	71,428	$ 0.07705	0.50%	$ 0.03852	0.04611
Total	**$ 8,643,662,547**	**93,737,606**	**$ 0.09221**	**0.50%**	**$ 0.04611**	**0.04611**

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Alternative Calculation of Section 12-103(d) Surcharge

	Cents per KWH					
Distribution Delivery Class	**Page 1, Col. (e)** (a)	**Page 2, Col. (e)** (b)	**Page 3, Col. (e)** (c)	**Rate Screen - 2008** (d)	**Rate Screen - 2009** (e)	**Rate Screen - 2010** (f)
Single Family w/o Space Heat	0.055	0.055	0.055	0.055	0.109	0.165
Multi Family w/o Space Heat	0.051	0.060	0.060	0.051	0.111	0.171
Single Family w/ Space Heat	0.034	0.038	0.041	0.034	0.072	0.113
Multi Family w/ Space Heat	0.037	0.040	0.043	0.037	0.077	0.120
Watt-Hour	0.052	0.064	0.064	0.052	0.116	0.180
Small Load - 0-100KW	0.045	0.047	0.048	0.045	0.092	0.139
Medium Load - 100-400KW	0.039	0.041	0.044	0.039	0.081	0.125
Large Load - 400-1000KW	0.039	0.037	0.041	0.039	0.076	0.117
Very Large Load - 1-10MW	0.035	0.037	0.041	0.035	0.071	0.112
Extra Large Load - >10MW	0.029	0.033	0.037	0.029	0.062	0.100
Railroad	0.031	0.034	0.039	0.031	0.065	0.104
High Voltage	0.026	0.029	0.033	0.026	0.055	0.088
Fixture-Included Lighting	0.099	0.106	0.107	0.099	0.205	0.312
Dusk to Dawn Lighting	0.023	0.030	0.031	0.023	0.053	0.084
General Lighting	0.037	0.034	0.039	0.037	0.070	0.109
Total	**0.042**	**0.044**	**0.046**	**0.042**	**0.086**	**0.132**

STATE OF ILLINOIS
ILLINOIS COMMERCE COMMISSION

COMMONWEALTH EDISON COMPANY	:	
	:	
	:	
Approval of Energy Efficiency and Demand Response Plan Pursuant to Section 12-103(f) Of the Public Utilities Act	:	**Docket No. 07-0540**

AFFIDAVIT OF RALPH ZARUMBA

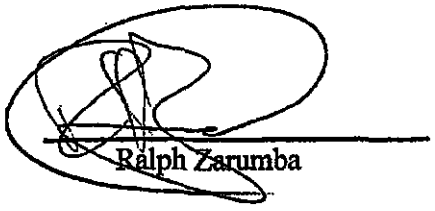
RALPH ZARUMBA, being duly sworn, states as follows:

1. All facts stated in the Direct Testimony of Ralph Zarumba on behalf of the Building Owners and Managers Association of Chicago are based solely upon my personal knowledge and experiences.

2. If I was called upon to testify and asked the came questions contained in the Direct Testimony of Ralph Zarumba, I would give the same answers contained therein.

3. If called to testify, I would state that the information contained in the Direct Testimony of Ralph Zarumba is true and correct to the best of my knowledge, information and belief.

4. Further affiant sayeth not.



Ralph Zarumba

Subscribed and sworn to before me
this 14th day of December 2007

Notary Public