OCC EXHIBIT _____

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Ohio	)	
Edison Company, The Cleveland Electric	)	Case No. 07-551-EL-AIR
Illuminating Company, and The Toledo	)	Case No. 07-552-EL-ATA
Edison Company for Authority to Increase	)	Case No. 07-553-EL-AAM
Rates for Distribution Service, Modify	)	Case No. 07-554-EL-UNC
Certain Accounting Practices and for	)	
Tariff Approvals.	)	

DIRECT TESTIMONY
OF
WILSON GONZALEZ

On Behalf of
The Office of the Ohio Consumers' Counsel
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January 10, 2008

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Attachment WG-3: Proposed FirstEnergy DSM Funding Target

1   I.   **INTRODUCTION**

2   *Q1.   PLEASE STATE YOUR NAME, ADDRESS AND POSITION.*

3   *A1.*   My name is Wilson Gonzalez. My business address is 10 West Broad Street,

4   Suite 1800, Columbus, Ohio, 43215-3485. I am employed by the Office of the

5   Ohio Consumers' Counsel ("OCC") as a senior regulatory analyst.

6

7   *Q2.   PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND*

8   *PROFESSIONAL EXPERIENCE?*

9   *A2.*   I have a Bachelor of Arts degree in Economics from Yale University and a Master

10   of Arts degree in Economics from the University of Massachusetts at Amherst. I

11   have also completed coursework and passed my comprehensive exams towards a

12   Ph.D. in Economics at the University of Massachusetts at Amherst. I have been

13   employed in the energy industry since 1986, first with the Connecticut Energy

14   Office (Senior Economist, 1986-1992), then Columbia Gas Distribution Company

15   (Integrated Resource Planning Coordinator for "Columbia Gas", 1992-1996), and

16   American Electric Power (Marketing Profitability Coordinator and Market

17   Research Consultant for "AEP," 1996-2002). I have been spearheading the

18   Resource Planning activities within OCC since 2004.

1   *Q3.*   ***DESCRIBE YOUR EXPERIENCE DIRECTLY RELATED TO UTILITY***

2   ***DEMAND SIDE MANAGEMENT PROGRAM DESIGN, COST-BENEFIT***

3   ***ANALYSIS AND PROGRAM MONITORING AND EVALUATION.***

4   *A3.*   I have been involved with many aspects of Demand Side Management ("DSM")

5   programs since 1986. While at the Connecticut Energy Office, I represented the

6   office in one of the first DSM collaborative processes in the country (Connecticut

7   DPUC Docket #87-07-01). There I analyzed the performance and cost-

8   effectiveness of many efficiency programs for Connecticut's electric and gas

9   utilities that led to demonstration projects, policy recommendations, DSM

10   programs, and energy efficiency standards. At Columbia Gas, I was responsible

11   for coordinating that company's Integrated Resource Plan within the corporate

12   planning department and DSM program development activities in the marketing

13   department. I designed and managed residential DSM programs in Maryland and

14   Virginia. At AEP, I conducted numerous cost benefit analyses of programs being

15   sponsored by AEP's corporate marketing department, including their residential

16   load control water heater program.

17

18   *Q4.*   ***HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PUBLIC UTILITIES***

19   ***COMMISSION OF OHIO?***

20   *A4.*   Yes. I testified in Case No. 04-571-GA-AIR and Case No. 05-474-GA-ATA

21   before the Public Utilities Commission of Ohio ("Commission" or "PUCO"). I

22   have also provided testimony in Case No. 05-1444-GA-UNC and Case No. 06-

23   222-EL-SLF.

1   **II.   PURPOSE OF TESTIMONY**

2   *Q5.   WHAT IS THE PURPOSE OF YOUR TESTIMONY?*

3   *A5.*   I recommend the FirstEnergy companies increase their investment in cost-

4   effective energy efficiency programs for the residential class. The two current

5   residential DSM programs, Home Performance with Energy Star ("HPES") and

6   the Direct Load Control Program ("DLC"), are funded through 2008 as part of the

7   Supplemental Stipulation in the Rate Certainty Plan ("RCP") for the FirstEnergy

8   companies.[1] An increased investment in energy efficiency programs for areas

9   served by the FirstEnergy companies would provide Ohio ratepayers with many

10   benefits. I also recommend that the Commission require meetings, with PUCO

11   Staff involvement: at which stakeholders could collaboratively analyze the

12   potential for direct investment by the FirstEnergy companies in energy efficiency

13   resources; at which programs would be designed to harness that potential on a

14   comprehensive basis across all sectors; and at which the implementation of such

15   programs would be facilitated to the full extent that the programs are cost-

16   effective. To encourage such developments, I recommend the FirstEnergy

17   companies be allowed to continue to recover the energy efficiency investments

18   and the program-induced distribution lost revenues the programs entail in the

19   existing DSM Rider.

---

[1] Any funding not spent through 2008 rolls over for one year. See Supplemental Stipulation in Case No. 05-1125-EL-ATA, November 4, 2005, page 3.

1   **III.   INCREASE IN ENERGY EFFICIENCY INVESTMENTS**

2   *Q6.   WHY IS OCC RECOMMENDING AN INCREASE IN THE ENERGY*

3   *EFFICIENCY INVESTMENTS BY FIRSTENERGY AT THIS TIME?*

4   *A6.*   OCC has serious concerns about the specter of increasing residential electricity

5   bills due to future infrastructure upgrades of distribution systems and other

6   sources of cost increases in energy sectors, and is therefore very interested in

7   promoting programs and policies that mitigate those increases. To illustrate these

8   concerns, Duke Energy CEO William Rogers recently stated that his company's

9   analysis of the Lieberman-Warner Carbon Mitigation bill indicates that if signed

10   into law, the legislation "would raise rates from 20 to 50 percent in Duke's Ohio

11   service territory."[2] This is in addition to current cost increases to meet the

12   Mercury, NOx, and SO2 limits in the Clean Air Interstate Rules ("CAIR") and

13   Clean Air Mercury rules.[3] While new generation technologies will help meet

14   existing and new environmental regulations, their capital and operational cost are

15   not cheap, as indicated in Attachment WG-1. The Staff Reports are also correct

16   and very clear on this point when they state "given this environment, conservation

17   and energy efficiency have a positive role to play in controlling energy costs."[4]

---

[2] Comment in response to Representative Inquiry on December 12, 2007, before the House Public Utilities Subcommittee concerning substitute Senate Bill 221.

[3] See http://www.ncsl.org/programs/environ/air/EPAairrule.htm for a summary of the rules.

[4] See, e.g., Toledo Edison and Cleveland Electric Illuminating Staff Report at page 87, and Ohio Edison Staff Report at page 86.

1   *Q7.*   ***WHY IS OCC RECOMMENDING AN INCREASE IN ENERGY***

2   ***EFFICIENCY INVESTMENTS IN THE DISTRIBUTION RATE CASES***

3   ***FOR THE FIRSTENERGY COMPANIES?***

4   *A7.*   There are various reasons for choosing to fund DSM programs through the

5   FirstEnergy companies' distribution rates. First, geographically targeted DSM

6   programs can postpone the need to make capital improvements to distribution

7   lines (reconductoring), transformers and substations by moderating increased

8   customer demand and subsequent line congestion. DSM programs also reduce the

9   stress on distribution equipment such as transformers during peak periods,

10   avoiding premature equipment failures and extending the useful life of

11   distribution equipment.[5] From a distributional asset management perspective,

12   tying the monitoring capabilities of an advanced meter in the near future with the

13   capabilities for demand response can provide the utility and its customers savings

14   in avoided operational, reliability, distribution, transmission and generation

15   related costs.[6]

16

17   Second, if the Electric Security Plan ("ESP") language currently being debated in

18   substitute Senate Bill 221 becomes law, then an Integrated Resource Planning

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[5] DSM programs can reduce wear and tear on equipment by reducing peak loads (During heat storms this becomes apparent as transformers blow. But, higher loads work against equipment life at all times.) For distribution utilities: Deferral and possible avoidance of distribution feeder investments, substations and transformer upgrades. Note for example, Duke's DSM cost-effective model DSMore incorporates the avoided distribution costs attributable to its DSM programs.

[6] See "The Transition to the Modern Grid" Presented by Joe Miller, NETL Modern Grid Team, Ohio Public Utility Commission – Technical Workshop, November 1, 2007.

1   ("IRP") type process could resurface and the FirstEnergy companies should be

2   positioned to move rapidly ahead with DSM programs.

3

4 *Q8.* ***HOW DOES OCC'S RECOMMENDATION FIT WITH ITS***

5   ***ENCOURAGMENT OF ENERGY EFFICIENCY AS PART OF***

6   ***FIRSTENERGY'S PENDING CASE REGARDING THE PRICING OF ITS***

7   ***GENERATION STANDARD SERVICE OFFER BEGINNING IN 2009?***

8 *A8.* Energy efficiency programs provide a mix of benefits for the distribution portion

9   of the customer's service (as stated in my previous answer) as well as the

10   generation portion of the customer's service. OCC commented in FirstEnergy's

11   Generation Competitive Bidding Case, Case No. 07-796-ATA, stating that

12   FirstEnergy should bid out 50 megawatts in a DSM tranche. After I discussed

13   this DSM generation bidding model with various energy efficiency consultants,

14   FirstEnergy representatives, and energy service companies ("ESCOs"), it is

15   apparent that funding DSM programs through distribution rates makes the most

16   sense at this time. ESCOs appear more comfortable responding to, and delivering

17   programs through, a DSM Offer from a utility rather than as part of an auction.[7]

18   In a DSM Offer, FE would pay the ESCOs or third party provider of the energy

19   efficiency a fixed kWh charge.[8] These incentives can be paid to ESCOs on the

20   basis of deemed savings, which are standardized savings values or formulas for a

21   wide range of measures in representative building types. If deemed savings have

---

[7] Based on discussions with the ESCO industry trade group NAESCO and with consultants who have tried to incorporate DSM bidding into a generation auction.

[8] After the DSM Offer price is set, third party energy service companies could then round up projects and submit proposals in conformance with FE's criteria.

1   not been established for a particular qualifying energy efficiency measure, then

2   incentives may be paid on the basis of verified peak demand and/or energy

3   savings using the International Performance Measurement and Verification

4   Protocol. [9] Most deregulated states fund DSM programs through a distribution

5   rider or some sort of public benefits charge.[10] Funding DSM through a

6   distribution charge provides the following:

7   a.   Both ESCOs and retail generation suppliers can deliver programs

8   by responding to a distribution utility's DSM Offer;

9   b.   The Commission does not have to institute complex DSM

10   migration riders for customers receiving upfront utility

11   DSM incentives for energy improvements in their homes or

12   facilities in year one, and switching in year two and

13   thereafter choosing a CRES provider for electricity service.

14   c.   The PUCO avoids the complexity of trying to align the

15   revenue streams going to generation suppliers of a

16   relatively short-term generation auction (normally one to

17   three years) with the revenue streams going to ESCOs

18   providing DSM program savings lasting 15 to 20 years.

---

[9] The International Performance Measurement & Verification Protocol (IPMVP) provides standard measurement and verification (M&V) terminology and defines four M&V options to quantify energy and water savings. It is a savings-verification tool with principles that are applicable to commercial and industrial energy efficiency projects. The use of IPMVP has become standard in almost all energy efficiency projects where payments to the contractors are based on the energy savings that will result from the implementation of a variety of ECMs. IPMVP has been translated into ten languages. More than 300 professionals from 100 U.S. and international organizations have contributed thousands of hours on a completely voluntary basis to update and revise IPMVP. More information can be found at http://www.ipmvp.org.

[10] See M. Eldridge et al, "The State Energy Efficiency Scorecard for 2006", American Council for an Energy-Efficient Economy, June 2007.

1   d.   Stronger ESCOs participation since ESCOs are less likely to make

2   front-loaded DSM investments if they have to wait 15 to 20 years

3   (or 5 three year auction cycles) for recovery of those investments.

4   e.   Standard DSM Offers unleash the creativity in the market. By

5   setting a performance standard in the DSM Offer (i.e. the ESCOs

6   proposal will save a certain number of kW and kWhs over a certain

7   time period at a fixed price) the utility does not pre-determine a set

8   of measures nor limit the DSM technologies and program designs

9   that prospective vendors can use to meet the electric savings

10   targets contained in a DSM Offer in the most cost-effective

11   manner.

12   For these reasons, I believe that the FirstEnergy companies' existing DSM

13   distribution rider coupled with a utility DSM Offer designed to meet a portion of

14   the FirstEnergy companies' energy efficiency needs provides the most cost-

15   effective means to provide electric service to all customers. [11]

---

[11] One of the most vibrant markets for DSM programs is deregulated Texas, where the standard offer is the policy instrument of choice. See for example, AEP's Texas service territory website at http://www.aepefficiency.com/cisop/intro/index.htm.

1   *Q9.   IS THERE ANY SUPPORT FOR DSM IN OHIO AND REGIONALLY AT*

2   *THIS TIME?*

3   *A9.*   Yes. Given the alarm of rising electricity costs around the country, Ohio and

4   many states are promoting DSM as a low cost solution to increasing distribution,

5   transmission and generation requirements. In Ohio, the PUCO approved the

6   Duke settlement in Case No. 06-91-EL-UNC, and the FirstEnergy companies'

7   supplemental settlement in Case No. 05-1125-EL-ATA that together increased

8   electric DSM funding in the state to over $100 million. Governor Strickland's

9   Executive Order 2007 – 02S, Coordinating Ohio Energy Policy and State Energy

10   Utilization, also raised the bar for energy efficiency. [12] The Order sets forth a

11   number of actions that state agencies, commissions, and boards are required to

12   undertake to reduce and improve the energy consumption of the state. The Order

13   clearly states that "it is the responsibility of state government to lead by example

14   in reducing energy consumption in this era of steep energy prices, mounting

15   environmental concerns, and persistent energy security risk." [13] It further states

16   that "by improving energy efficiency and adopting advanced energy utilization

17   technologies, we can make the most of our existing energy resources and also

18   stimulate activity and investment in the energy efficiency services sector."[14]

19   More recently, Attachment WG-2 shows the energy efficiency and demand

---

[12] Issued on January 17, 2007.
[13] Id at 2.
[14] Id at 2.

1   response estimates contained in introduced Senate Bill 221 and House Bill 357

2   that include an Energy Efficiency Resource Standard. Finally, OCC's

3   recommendation of increased funding for DSM is consistent with the Energy

4   Security and Climate Stewardship Platform for the Midwest (MESCSP)[15] that

5   Governor Strickland just signed on November 15, 2007. The MESCSP

6   recommends 22% of Ohio's energy needs by 2025 be met with energy efficiency.

7

8   *Q10.* *WHAT DOLLAR LEVELS OF ENERGY EFFICIENCY DO YOU*

9   *RECOMMEND?*

10   *A10.* I recommend the FirstEnergy companies obtain a verified energy usage reduction

11   of one and a half percent cumulative over 3 years [16] (or approximately $49 million

12   per year) starting in 2009 on non-low income energy efficiency programs. Of

13   course, programs available to all residential customers would also be available to

14   low income customers as well. As demonstrated in Attachment WG-3, this

15   spending level comes out to approximately a $24.25 cost per electricity customer

16   (a little more than two times the 2008 spending level) and places the FirstEnergy

17   companies' spending level on a par with Duke Energy of Ohio's average cost per

18   customer energy efficiency effort in Cincinnati. The FirstEnergy companies

19   should also increase the funding of the low income

---

[15] The energy efficiency commitment is as follows: "Meet at least 2 percent of regional annual retail sales of natural gas and electricity through energy efficiency improvements by 2015, and continue to achieve an additional 2 percent in efficiency improvements every year thereafter." See http://www.midwesterngovernors.org/resolutions/Platform.pdf.
[16] The sales volume benchmark should be the total end-use delivery column of PUCO Form FE4-D2 of the FirstEnergy 2007-Electric Long-Term Forecast Report to the Public Utilities Commission of Ohio in Case No. 07-504-EL-FOR on page 4-13.

1   Community Connections Program to a level of $5 million per year as that

2   program continues to provide benefits to low income customers and the increased

3   funding level should help reduce existing waiting lists. The current annual level

4   of funding for this program is $2.7 million so this would represent a significant

5   and warranted increase. The additional DSM and the Community Connections

6   Program costs should be recovered in the existing DSM Rider.

7

8   *Q11.   WHAT IS THE ECONOMICAL ELECTRIC ENERGY EFFICIENCY*

9   *POTENTIAL IN OHIO?*

10   *A11.*   According to a Market Assessment Study conducted by Quantec in 2005, about

11   16% of Midwest electric load is economically viable to be offset by energy

12   efficiency.[17] An American Council for an Energy Efficient Economy ("ACEEE")

13   Midwest study recommends the following percentage electricity savings as a

14   percentage of utility energy demand by sector targets for Ohio.[18]

---

[17] See "Midwest Residential Market Assessment and DSM Potential Study" by Quantec and commissioned by the Midwest Energy Efficiency Alliance, March 2006. Economically viable means the energy efficiency programs avoid kWhs at a lower cost than they could be supplied by traditional supply side sources.
[18]. See *Examining the Potential for Energy Efficiency to Help Address the Natural Gas Crisis in the Midwest,* Martin Kushler, Ph.D., Dan York, Ph.D., and Patti Witte, M.A. January 2005, URL: http://aceee.org/pubs/u051.htm.

1

Class/Year	2006	2010	2015	2020
Residential	2.0%	3.2%	4.7%	6.3%
Commercial	2.3%	4.7%	7.6%	10.5%
Industrial	1.7%	4.2%	7.4%	10.6%
Total	1.9%	4.0%	6.7%	9.4%

2

3   ACEEE's electric savings estimate for Ohio is based on realistic savings that

4   could be achieved through the implementation of aggressive energy efficiency

5   programs similar to those that have been deployed in recent years in response to

6   recent regional energy shortages. [19] ACEEE then applied those estimates to the

7   end-use estimates in Ohio to develop sector-specific estimates of energy savings.

8

9   *Q12.   WHAT ENERGY EFFICIENCY PROGRAMS DO YOU RECOMMEND THE*

10   *FIRSTENERGY COMPANIES SHOULD UNDERTAKE WITH THE*

11   *ADDITIONAL FUNDS?*

12   *A12.*   I recommend the FirstEnergy companies continue funding its existing DSM

13   programs, Home Performance with Energy Star and Direct Load Control, as long

14   as an evaluation shows that they continue to be cost-effective. For new programs,

15   I recommend the FirstEnergy companies participate in a stakeholder collaborative

16   review to consider the list of exemplary energy efficiency program profiles put

17   together and rated by the American Council for an Energy Efficient Economy that

---

[19] Id. at 13. Industry experts readily concede that the Midwest region as a whole has lagged far behind such leading regions as the Northeast, California, and the Northwest in terms of energy efficiency policies and programs.

1   are listed in Attachment WG-2 to my testimony.[20] This attachment contains four

2   examples of residential lighting programs and one commercial lighting program.

3   There are other excellent programs across the country, but these programs would

4   provide a good start for evaluation by the stakeholder collaborative. OCC is

5   interested in exploring the implementation of the following residential programs:

6   1.   A residential appliance program (including recycling of removed
7   units);

8   2.   A residential air-conditioning program; and

9   3.   A residential new construction program.

10

11   OCC would also encourage the FirstEnergy companies to implement programs for

12   business and state office buildings since these often have the highest cost-

13   effectiveness ratios.

14

15   *Q13.*   ***WHY SHOULD THE FIRSTENERGY COMPANIES INVEST IN ENERGY***

16   ***EFFICIENCY WHEN SOME CUSTOMERS CAN INVEST ON THEIR***

17   ***OWN?***

18   *A13.*   The Staff Reports correctly state that DSM "as a tool of utility Company strategy

19   and as a public policy direction has had a spotty history in Ohio over the last

20   twenty years."[21] Given that spotty history, the market for energy efficiency needs

21   a jump-start in Ohio. Significant opportunities exist to reduce energy utilization

22   by implementing technologies that are cost-effective under prevailing economic

---

[20] All you have to do is select the program link in document ACEEE_BestPractoc.pdf and it will take you to a brief write-up of the program.

[21] Toledo Edison and Cleveland Electric Illuminating Staff Report at page 82, and Ohio Edison Staff Report at page 81.

1   conditions, but are not fully implemented by existing market institutions.[22]

2   Imperfect information and transaction costs cause biases for the purchase of

3   traditional devices that use more energy than those that would be selected by

4   perfectly informed individuals who must sometimes grapple with high transaction

5   costs. Some of the market barriers that thwart the optimum investment of cost-

6   effective energy efficiency are:

7   •   Limited availability of energy-efficient products and contractors;

8   •   Lack of consumer awareness of the products and their benefits;

9   •   Imperfect information;

10   •   Resistance to new products;

11   •   Over-emphasis on first cost versus operating costs over product life;

12   •   Split incentives (renter/landlord or tract builder/homebuyer);

13   •   Failure of market prices to reflect the full cost of energy to society.

14

15   Such "market barriers" suggest a role for regulatory intervention to improve

16   market performance at prevailing energy prices.[23]

17

18   *Q14.*   ***WHAT OHIO STATUTORY OR REGULATORY MANDATES DO THE***

19   ***ENERGY EFFICIENCY PROGRAMS SUPPORT?***

20   *A14.*   Based on my experience with energy efficiency programs, my review of the

21   related Ohio regulations, and discussions with OCC counsel, it is my

---

[22] See "Energy Efficiency, Market Failures, and Government Policy" by Mark Levine, Eric Hirst, Jonathan Koomey, James McMahon and Alan Sanstad, Oak Ridge National Laboratory, March 1994. Also, "Market Barriers to Energy Efficiency" by Richard Howarth, Energy Economics, 1993, Vol. 15, issue 4, pages 252-272.

[23] This argument is made in the Concurring Opinion of Commissioner Paul A. Centolella and Valerie A. Lemmie in the Supplemental Opinion and Order in Case No. 05-1444-GA-UNC, pages 3-5.

1   understanding that the energy efficiency programs I propose support the

2   following:

3   •   R.C. 4905.70: "The public utilities commission shall initiate
4   programs that will promote and encourage conservation of energy
5   and a reduction in the growth rate of energy consumption, promote
6   economic efficiencies, and take into account long-run incremental
7   costs."

8   •   R.C. 4928.55: Allows the Director of Development to "establish
9   an energy efficiency and weatherization program targeted, to the
10   extent practicable, to high-cost, high-volume use structures
11   occupied by customers eligible for the percentage of income
12   payment plan program, with the goal of reducing the energy bills
13   of the occupants.

14   •   R.C. 4928.61: Establishes the energy efficiency revolving loan
15   fund.

16   •   R.C. 4935.01(A)(1) and (A)(2): "In its forecasting duties, the
17   commission shall...reasonably balance requirements of state and
18   regional development, protection of public health and safety,
19   preservation of environmental quality, maintenance of a sound
20   economy, and conservation of energy and material resources."

21

22   *Q15.*   ***WHAT ECONOMIC GUIDELINES SHOULD BE USED TO EVALUATE***

23   ***THE ENERGY EFFICIENCY PROGRAMS?***

24   *A15.*   Programs should provide the least cost of energy services to customers as a

25   whole. OCC recommends, at a minimum, that the Total Resource Cost Test be

26   used to evaluate the cost-effectiveness of energy efficiency programs.[24] This test

27   measures the total cost of the energy efficiency program and is compared to the

28   avoided capacity and energy cost (or their market proxy) of traditional supply-

29   side resources. This test does not include utility incentives nor lost revenues that

---

[24] See 2002 "CALIFORNIA STANDARD PRACTICE MANUAL: ECONOMIC ANALYSIS OF DEMAND-SIDE PROGRAMS AND PROJECTS."

1   are typically viewed as being transfer payments between the utility and either the

2   participants or non-participants.

3   Given the imminent nature of Greenhouse Gas legislation, sensitivity analysis

4   should be conducted around a range of projected carbon allowance prices as these

5   costs will be internalized into the utility cost structure in the very near future.[25]

6   Other external factors beyond environmental benefits and costs such as changes in

7   indoor or outdoor air quality, improved customer comfort, program impact on

8   economic development, particularly new job creation and the multiplier effect of

9   retaining dollars in Ohio, should be included in the evaluation procedure. If it is

10   not possible to associate specific dollar impacts with these attributes, a written

11   description and/or proxy measurement should be provided for the decision

12   process. Finally, consideration should be given to the rate impacts of energy

13   efficiency investments by adjusting the cost-recovery timing and structure of

14   programs.

15
16
17   **IV.   COLLABORATIVE PROCESS**

18   *Q16.   WHAT IS THE BEST APPROACH FOR REACHING AGREEMENT*

19   *REGARDING THE OPTIMAL DESIGN AND IMPLEMENTATION OF*

20   *ENERGY EFFICIENCY PROGRAMS FOR FIRSTENERGY?*

21   *A16.* The most effective way for interested parties to have input in the Electric DSM

22   Plan would be to work cooperatively with the Company in the plan design. This

23   approach significantly limits the amount of contested matters, and leads to greater

---

[25] This analysis usually falls into the Societal Test since carbon costs have not yet been internalized.

1   understanding of the complex issues by all parties involved. It also requires

2   significantly less regulatory intervention and litigation, as the parties work out

3   most, if not all, of their differences outside of the regulatory proceeding. My

4   experience in Connecticut with the Northeast Utilities and United Illuminating

5   Company collaboratives and in Maryland with the Columbia Gas or Maryland

6   collaborative,[26] and with Duke Energy of Ohio has demonstrated that a

7   collaborative DSM process can be very effective in developing successful, cost-

8   effective programs and avoiding contentious, drawn-out litigation over DSM

9   issues. I therefore recommend that a small group of major stakeholders agree to

10   enter into a collaborative process starting in 2008 whose purpose is to analyze the

11   potential for direct investment by the FirstEnergy companies in energy efficiency

12   resources; to design programs to harness that potential on a comprehensive basis,

13   across all sectors; and to facilitate the implementation of such programs by the

14   Company to the full extent that they are cost-effective.

15

16   **Q17.** **HOW WOULD THE COLLABORATIVE PROCESS WORK AND HOW**

17   **LONG WOULD THE PROCESS TAKE?**

18   *A17.*   The details of the process should be worked out among the key stakeholders that

19   participate. The first task of the collaborative would be to establish the overall

20   goals and objectives of the process. I recommend the Company be given five

21   months after the Commission Order in this case to develop and refine

---

[26] In compliance with the Public Service Commission of Maryland's Secretarial Orders issued on September 17, 1991 and August 20, 1992, Columbia Gas of Maryland (CMD) submitted its Energy Efficiency and Conservation Plan on November 12, 1993. The Plan was developed in consultation with the CMD collaborative.

1   collaboratively with interested stakeholders the program designs proffered by

2   OCC. This allows sufficient time for meaningful input from the stakeholders, and

3   would allow the Company to begin implementing the new programs at the start of

4   2009. At the end of the five months, the Company would file a new DSM plan

5   for Commission review and approval. Issues that have not been agreed to by all

6   parties of the collaborative can be brought before the Commission at that time.

7

8   **V.   OCC RECOMMENDATIONS**

9   *Q18. IN SUMMARY, WHAT ARE OCC'S ENERGY EFFICIENCY*

10   *RECOMMENDATIONS IN THIS PROCEEDING?*

11   *A18.* OCC's specific energy efficiency objective is to work with the FirstEnergy

12   companies and other stakeholders to design and implement programs that:

13   •   Minimize short and long-term total societal costs associated with
14   electricity consumption;

15   •   Provide customers a demand-side choice to control their electricity use;

16   •   Provide responsive customer service;

17   •   Minimize consumers' total energy bills;

18   •   Increase overall end-use efficiency;

19   •   Improve overall system efficiency and utilization;

20   •   Reduce environmental degradation; and

21   •   Promote economic development.

1   *Q19. DO YOU SUPPORT "NET OF BENEFIT RIDERS" FOR THE FUTURE*

2   *IMPLEMENTATION OF ADVANCED METERING INFRASTRUCTURE*

3   *("AMI") IN AREAS SERVED BY THE FIRSTENERGY COMPANIES?*

4   *A19.* Yes, I support the concept of a "net of benefits" rider and the cost-effective

5   deployment of AMI for residential customers in areas served by the FirstEnergy

6   companies as it complements the DSM programs highlighted earlier in my

7   testimony. With such a rider and at a later date, the FirstEnergy companies

8   should then make an AMI filing consisting of a business case that includes a cost-

9   benefit analysis and implementation schedule. The cost-benefit analysis would

10   identify the AMI deployment costs (meters, communications infrastructure and

11   data management) and the operational and demand response savings that could

12   offset the corresponding costs of the implementation. After appropriate review,

13   the Commission could then issue a finding as to whether the use of the "Net of

14   Benefit" rider for cost recovery is appropriate. OCC has filed comments,

15   testimony, and made a presentation at a PUCO "Smart Metering" technical

16   conference supporting the residential deployment of cost-effective AMI in Case

17   05-1500-EL-COI, Case No. 06-222-EL-SLF, and 07-0646-EL-UNC.[27]

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[27] *In the Matter of the Commission's Response to Provisions of the Federal Energy Policy Act of 2005 Regarding Net Metering, Smart Metering and Demand Response, Cogeneration and Power Production Purchase and Sale Requirements, and Interconnection.* Case No. 05-1500-EL-COI. ("05-1500"). OCC provided 3 sets of comments in said case.

1   *Q20.*   ***DO YOU HAVE ANY CONCERNS WITH THE FIRSTENERGY***

2   ***COMPANIES' INTERCONNECTION TARIFFS?***

3   *A20.*   Yes. Their fee structure appears high relative to other Ohio investor-owned

4   utilities. For example, their $250 application fee for interconnection is two and a

5   half times greater than AEP's proposed rate and five times greater than DP&L's

6   rate for the same service. Duke Energy Ohio has proposed no application fees.

7   The FirstEnergy companies are also requiring a $5 per kW deposit for systems

8   over 50 kW whereas Duke Energy Ohio is only charging $1 or $2 per kW

9   depending on whether the customer generator is interconnecting as a Level 2 or

10   Level 3 respectively.[28] I recommend that the FirstEnergy companies' fees be

11   brought in line with the other Ohio investor owned utilities.

12   I also recommend the FirstEnergy companies specifically reference IEEE

13   standard 1547 in the technical requirements for interconnection and parallel

14   operation of facilities in their interconnection tariffs rather than generically

15   referencing adopted IEEE standards.

16

17   *Q21.*   ***DO YOU HAVE ANY CONCERNS WITH THE FIRSTENERGY***

18   ***COMPANIES' NET ENERGY METERING RIDERS?***

19   *A21.*   Yes. The generation related language in the FirstEnergy companies' net energy

20   metering riders are worded in too restrictive a manner when discussing the

21   remuneration of a customer-generator who may occasionally be a net exporter of

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[28] See Toledo Edison Tariff PUCO No. 8, Ohio Edison Tariff PUCO No. 11 and Cleveland Electric Illuminating Company Tariff PUCO No.13, Duke Energy Ohio Rate IS, Dayton Power and Light PUCO No. 17 and Columbus Southern Power Tariff PUCO No. 6.

1   electricity. Instead of the existing language in the billing section which states that

2   a customer generator is entitled to the "unbundled generation component of the

3   appropriate rate schedule," OCC recommends the following language: "the

4   generation-related energy charges of the appropriate rate schedules, including all

5   applicable generation-related riders."[29]

6

7 *Q22.* ***DO YOU HAVE ANY CONCERNS WITH THE FIRSTENERGY***

8   ***COMPANIES' GENERAL SERVICE PARTIAL SERVICE RIDERS?***

9 *A22.* Yes, in particular with the proposed Market Based Pricing Option in those riders.

10   As constituted, not only do the riders require the customer generator to pay the

11   MISO locational marginal price (plus lines losses, taxes and administration

12   charge) for energy standby service, but on top of that, pile on a significant rate

13   stabilization charge ("RSC"). [30] The RSC is not warranted in the riders since the

14   customer generator is using the utility as a conduit to procure a market based

15   generation service real time so that no Provider of Last Resort ("POLR")

16   service is necessary for the few hours in the year when standby service is needed.

17   In this case, the additional rate stabilization charge serves as a deterrent to

18   distributed generation in the FirstEnergy companies' service territory.

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[29] This is the language contained in AEP's proposed Schedule NEMS applicable for net energy metering service, Case No. 07-1301-EL-COI.
[30] See Toledo Edison Tariff PUCO No. 8, Ohio Edison Tariff PUCO No. 11 and Cleveland Electric Illuminating Company Tariff PUCO No.13.

1   *Q23.   DOES THIS CONCLUDE YOUR TESTIMONY?*

2   *A23.*   Yes, however, I reserve the right to supplement my testimony to incorporate new

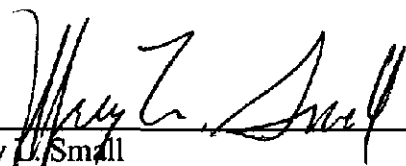3   information that may subsequently become available.

Comparative Cost of New Generation

Technology	IGCC AVG (1)		Latest IGCC Project estimate AEP & Duke (2)	Pulverized Coal (1)				Latest PC Plant Estimate (3)	Natural Gas Combined Cycle (1)		Nuclear (4)	Latest Nuclear Project Quote (5)	Wind Actual Cost (6)	Energy Efficiency (7)	Solar Electricity (8)	Biomass (9)
Metric				Subcritical		Supercritical			2 x 7FB							
Case #	w/o CC	with CC		w/o CC	with CC	w/o CC	with CC	w/o CC	w/o CC	with CC						
$/kW	$1,841	$2,496	$4,000	$1,474	$2,626	$1,508	$2,635	$2,600	$554	$1,172	$2,000	$4,000	$1,480	$400	$4,840	$1,510
LCOE, Cents/kWh*	7.79	10.63		6.40	11.88	6.33	11.48		6.84	9.74	6.70		4.90	1.3 - 3.2	15.3 - 21.4	7.3
% Increase in COE with Capture		36.4			85.6		81.4			42.4						

Notes:

* 20 year LEVELIZED COST OF ELECTRICITY (LCOE). Includes estimate of capital cost, fixed operating cost, variable and operating cost and fuel cost.

1. Average of 3 IGCC designs (GE, CoP E-Gas, Shell), "Cost and Performance Baseline for Fossil Energy Plants", Exhibit ES-2, DOE, May 2007. CO2 transport, storage and monitoring adds <0.5 ¢/kWh, increase in COE ~ 3 cents/kWh (36%).

2. Based on latest IGCC estimates, see 9/10/07 Power Dailypage 5, for Duke $2.0 billion estimate and 6/18/07 $2.23 billion filing of AEP's 629 MW W. Virginia plant.

3. Based on expected cost of Longview supercritical, pulverized coal-fired generating facility in West Virginia at $1.8 billion for 695 MW, or about $2,600/kW http://www.altassets.com/news/arc/2006/nz9491.php.

4. "The Future of Nuclear Power", Table 5.3, MIT, 2003. These figures are in 2002 dollars and do not include an estimated decommissioning cost of $350 million per plant.

5. "Realistic" costs of nuclear power as expressed by AEP CEO Mike Morris, "AEP not interested in nuclear plants", Bloomberg, AP and Staff Reports, 8/29/2007.

6. "Annual report on U.S. Wind Power Installation, Cost and Performance Trends: 2006, DOE. Figures are capacity weighted averages and include a federal production tax credit of 2 cents/kWh.

7. Levelized cost of saving electricity, Martin Kushler, "The Midwest Energy Crisis and Why Energy Efficiency Should Be a Top Policy Priority", ACEEE 2005. The capacity costs are modeled after a residential direct load control program.

8. These prices are for the modules and assume a volume purchase such as an industrial customer would make. Adding installation labor and the inverter ($700 per installed kW) raises the total cost. However, there is a 30% federal tax credit and also an additional 8% can be subtracted because most of the solar will be distributed generation and will not experience line loses. Adjusting for the latter yields a cost of 15.3 cents for the solar module and the inverter. See http://www.solarbuzz.com/.

9. Direct fired biomass, LCOE value interpolated for 2005 from Table on page 9, "Power Technologies Data Book", NREL/DOE 2005.

Comparison of Senate Bill 221 and McGregor Bill Energy Efficiency Requirements

Year	Energy Efficiency							Peak Demand Reduction			
	SB 221	SB 221 Cumulative	HB 357	HB 357 Cumulative	Illinois Law	Illinois Law Cumulative	MESCSP* Cumulative	SB 221	SB 221 Cumulative	HB 357	HB 357 Cumulative
2008			0.002	0.002	0.002	0.002				0.001	0.001
2009	0.003	0.003	0.002	0.004	0.004	0.006		0.006	0.006	0.001	0.002
2010	0.003	0.006	0.002	0.006	0.008	0.012		0.006	0.012	0.001	0.003
2011	0.003	0.009	0.002	0.008	0.008	0.02		0.006	0.018	0.001	0.004
2012	0.003	0.012	0.002	0.01	0.01	0.03		0.006	0.024	0.001	0.005
2013	0.003	0.015	0.004	0.014	0.014	0.044		0.006	0.029	0.001	0.006
2014	0.003	0.018	0.004	0.018	0.018	0.062		0.006	0.035	0.001	0.007
2015									0.041	0.001	0.008
2016	0.003	0.024	0	0.02	0.02	0.102	0.04	0.006	0.047	0.001	0.009
2017	0.003	0.027	0	0.02	0.02	0.122	0.06	0.006	0.053	0.001	0.01
2018	0.003	0.03	0	0.02	0.02	0.142	0.08	0.006	0.059		
2019	0.003	0.033	0	0.02	0.02	0.162	0.1	0.006	0.065		
2020	0.003	0.036	0	0.02	0.02	0.182	0.12	0.006	0.071		
2021	0.003	0.039	0	0.02	0.02	0.202	0.14	0.006	0.076		
2022	0.003	0.042	0	0.02	0.02	0.222	0.16	0.006	0.082		
2023	0.003	0.045	0	0.02	0.02	0.242	0.18	0.006	0.088		
2024	0.003	0.048	0	0.02	0.02	0.262	0.2	0.006	0.094		
2025								0.006	0.100		

Notes: SB 221 annual energy efficiency savings are estimated based on 20 year PUCO projected Ohio electricity growth of 1.2% per year.
See http://www.puco.ohio.gov/emplibrary/files/util/UtilitiesDeptReports/OhioLTFEnergyReq2003-2023final.pdf.
Based on actual data however, from 1990-Present, there would have been 7 years with no energy efficiency requirement under SB 221 due to lack of load growth.
HB 357 has a rate cap of half a cent per year per kilowatt hour.
Some have interpreted the HB 357 energy efficiency requirements as equivalent to the Illinois legislation. For that to be true, the language needs to be amended for clarification.
* Stands for Midwest Energy Security and Climate Stewardship Platform signed on to by Governor Strickland. Values between 2016 and 2024 are interpolated.

Proposed First Energy DSM Funding Target

	2008	2009	2010	Average	Total Customers	$ per Customer	Proposed Budget
First Energy DSM Funding							
Residential*	$ 9,333,333				2,016,199	4.63	
Commercial							
Total **	$ 20,000,000				2,016,199	9.92	$ 48,895,038
Duke DSM Funding (OH)* **							
Residential	$ 10,970,117	$ 13,300,020	$ 14,707,949				
Commercial	$ 2,644,903	$ 3,060,701	$ 3,537,119				
Total	$ 13,615,020	$ 16,360,721	$ 18,245,068	$ 16,073,603			
		3 Year Avg.					
Duke DSM Savings (kWh)							
Residential		55,343,300	60,015,800				
Commercial		37,815,502	44,232,843				
Total		93,158,802	104,248,643	279,636,000			
		Budget Factor	3.0				
		Adjusted Savings	850,637,710				
First Energy Delivery Forecast#	61,501,000,000	62,127,000,000	62,706,000,000	62,111,333,333			
		Percent of Load	0.014				

* Approximate DSM funds to spend annually as per original RCP settlement.

** Estimate of DSM funds available to spend in 2008.

*** From information contained in the appendix of Duke's Amended filing in Case No. 06-91-EL-UNC.

CERTIFICATE OF SERVICE

I certified that a true copy of the foregoing *Direct Testimony of Wilson Gonzalez* was served by Regular U.S. Mail Service, postage prepaid, to all parties this 10th day of January, 2008.

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