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DE-OHIO EXHIBIT \_\_\_\_\_

**PUCO** BEFORE

**THE PUBLIC UTILITIES COMMISSION OF OHIO**

In The Matter of the Application of Duke Energy Ohio for Approval of an Electric Security Plan	) ) )	Case No. 08-920-EL-SSO
In the Matter of the Application of Duke Energy Ohio for Approval to Amend Accounting Methods	) ) )	Case No. 08-921-EL-AAM
In the Matter of the Application of Duke Energy Ohio for Approval of a Certificate of Public Convenience and Necessity to Establish an Unavoidable Capacity Charge	) ) ) ) )	Case No. 08-922-EL-UNC
In the Matter of the Application of Duke Energy Ohio for Approval to Amend its Tariffs	) ) )	Case No. 08-923-EL-ATA

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**DIRECT TESTIMONY OF**

**THEODORE E. SCHULTZ**

**ON BEHALF OF**

**DUKE ENERGY OHIO**

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July 31, 2008

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Attachment:

TES-1          Portfolio of Programs

## **I. INTRODUCTION AND PURPOSE**

1    **Q.    PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2    A.    My name is Theodore E. Schultz, and my business address is 526 South Church  
3           Street, Charlotte, North Carolina.

4    **Q.    BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5    A.    I am Vice President – Energy Efficiency for Duke Energy Corporation (Duke  
6           Energy), the parent company of Duke Energy Ohio (DE-Ohio or Company). I am  
7           responsible for leading energy efficiency<sup>1</sup> initiatives across all retail markets  
8           served by Duke Energy, including DE-Ohio's service territory. I am also  
9           responsible for Duke Energy's consumer strategy and the development and  
10          implementation of new products and services for the retail market.

11   **Q.    PLEASE STATE BRIEFLY YOUR EDUCATION AND BUSINESS**  
12       **BACKGROUND AND EXPERIENCE.**

13   A.    I graduated from Syracuse University in 1987 with a Master's Degree in Business  
14          Administration. I also earned a Bachelor of Science Degree in Business  
15          Administration from Albany University in Albany, New York. Prior to joining  
16          Duke Energy, I worked for Energy East (formerly known as New York State  
17          Electric and Gas) from 1983 to 1997. While at Energy East, I was promoted to  
18          various positions of increasing responsibility in the areas of planning and  
19          information technology and was director of information technology when I left to  
20          join Duke Energy. I joined Duke Energy in 1997 as manager of strategic business

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<sup>1</sup> The term "energy efficiency," as used in this testimony, includes both energy efficiency/conservation and demand response measures.

1 development and became a director in our eBusiness area in 1999. In 2002, I took  
2 a position with Duke Energy Carolinas (formerly known as Duke Power  
3 Company) in consumer sales, service and marketing group. Thereafter, I became  
4 Vice President – Marketing in 2003 and Vice President – Large Business  
5 Consumers in 2004. Following the merger with Cinergy Corp. in 2006, I was  
6 named Vice President – Consumer Strategy and Planning before being named to  
7 my current position in October 2006.

8 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

9 A. The purpose of my testimony is to describe DE-Ohio's energy efficiency plan.  
10 Specifically, I will: (1) describe the compensation mechanism for energy  
11 efficiency achievements under DE-Ohio's distribution rider for energy efficiency  
12 (Rider DR-SAW); (2) provide a brief historical overview of DE-Ohio's demand  
13 side management (DSM), now termed energy efficiency programs; (3) review the  
14 challenges associated with achieving energy efficiency; (4) describe how the  
15 Company's energy efficiency plan described in the Application of Duke Energy  
16 Ohio for Approval of an Electric Security Plan (ESP) provides enhanced value to  
17 consumers over traditional energy efficiency programs; (5) provide a general  
18 description of the energy efficiency programs included in the Company's portfolio  
19 of energy efficiency programs; and (6) describe the program flexibility needed to  
20 allow the Company to maximize energy efficiency impacts under its energy  
21 efficiency plan.

22 I will also outline the Company's plans for developing future programs,  
23 including a discussion of how implementation of the SmartGrid will enhance DE-

1 Ohio's ability to achieve the Company's energy efficiency vision presented in the  
2 testimony of DE-Ohio witness Sandra P. Meyer. As part of this discussion, I will  
3 clarify that the costs and benefits of increased energy efficiency enabled by  
4 SmartGrid will flow through the Company's energy efficiency plan and are  
5 therefore excluded from the SmartGrid cost/benefit analysis. Finally, I will  
6 discuss why the Company's energy efficiency plan is in the public interest.

7 **Q. WHAT IS THE COMPANY SEEKING THE COMMISSION TO**  
8 **APPROVE?**

9 A. DE-Ohio requests that the Commission approve the replacement of Rider DSM  
10 with the energy efficiency rider, Rider DR-SAW, which will compensate the  
11 Company for delivering verified energy efficiency results. Rider DR-SAW is set  
12 forth in the Application at Part E. Under the Plan, the Commission will adjust  
13 Rider DR-SAW and true up billed versus earned revenues in the fourth year,  
14 based on the results achieved during the three-year plan as measured and verified  
15 by an independent third party. This process will ensure that consumers only pay  
16 for capacity and energy savings actually realized by consumers and the Company.  
17 The Company intends to continue its energy efficiency plan after the term of its  
18 proposed ESP.

19 Additionally, the Company is requesting that the Commission approve for  
20 implementation under Rider DR-SAW the energy efficiency programs described  
21 in my testimony and attachments, which were previously approved by the  
22 Commission on July 11, 2007, in the Company's 2006 Application for Recovery  
23 of Costs, Lost Margin, and Performance Incentive Associated with the

1 Implementation of Electric Residential Demand Side Management Programs in  
2 Case No. 06-91-EL-UNC. DE-Ohio also seeks approval to include its existing  
3 load management program, PowerShare, in its portfolio of energy efficiency  
4 programs and Rider DR-SAW. DE-Ohio is currently working to obtain long-term  
5 capacity through a Request for Proposals (RFP) process. These long-term capacity  
6 bids will also be used to determine avoided costs for the cost-effectiveness  
7 analyses on the Company's energy efficiency portfolio. After DE-Ohio completes  
8 its cost-effectiveness analysis, it will make a filing showing the revenue  
9 requirement calculations for the energy efficiency program portfolio described in  
10 my testimony, as such portfolio may be revised and/or expanded as a result of the  
11 new cost-effectiveness analyses, and will seek approval of the Rider DR-SAW  
12 charge for residential and non-residential consumers.

13 **II. THE SAVE-A-WATT APPROACH**

14 **Q. PLEASE DESCRIBE DE-OHIO'S ENERGY EFFICIENCY PLAN.**

15 A. DE-Ohio's energy efficiency plan consists of several components: (1) a new  
16 regulatory approach to energy efficiency programs; (2) an energy efficiency rider  
17 to implement the approach for Company-sponsored energy efficiency programs;  
18 and (3) a portfolio of energy efficiency programs as described later in my  
19 testimony.

1 Duke Energy recognizes energy efficiency as a reliable, valuable resource that is a  
2 “fifth fuel” and should be part of the portfolio available to meet consumers’  
3 growing need for electricity along with coal, natural gas, and renewable energy.  
4 Energy efficiency programs can meet consumers’ needs by *saving* watts instead of  
5 *making* watts. This emissions-free resource helps consumers meet their energy  
6 needs with less electricity, less cost, and less environmental impact.

7 The Company’s proposed new approach to energy efficiency  
8 fundamentally changes both the way energy efficiency is perceived and the role of  
9 the Company in achieving such energy efficiency. DE-Ohio has the expertise and  
10 consumer relationships to produce cost-effective energy efficiency and to make it  
11 a significant part of its resource mix. Now, DE-Ohio also has the mandate from  
12 the State to make energy efficiency an integral part of its mission. Effective July  
13 31, 2008, DE-Ohio must meet: (1) the cumulative annual energy savings  
14 benchmarks set forth in R.C. 4928.66(A)(1)(a) of 22% of the total annual average  
15 and normalized kilowatt-hour sales of the electric distribution company by 2025;  
16 and (2) the peak demand reductions set forth in R.C. 4928.66(A)(1)(b) of 1% in  
17 2009 and an additional 0.75% reduction each year thereafter through 2018  
18 (collectively these requirements are referred to as the “EE Mandate”).

19 Initially, the Company proposes to focus on offering consumers programs  
20 that will help them address rising energy prices now. These offers are being  
21 developed with direct input from our consumers through the Collaborative process  
22 I describe later, as well as direct market research. The offers will use new  
23 channels that are more convenient for our consumers and combine individual

1 programs into solutions that provide value from our consumer's perspective. The  
2 aggressive benchmarks established by the General Assembly, however, will also  
3 necessitate significant research and development by the Company to develop  
4 innovative, new energy efficiency programs, especially as market potential shrinks  
5 over time. To meet the EE Mandate, DE-Ohio will pursue all cost-effective  
6 energy efficiency programs and will encourage the participation of all consumers,  
7 including those consumers served by competitive retail electric service (CRES)  
8 providers. The Company intends to accelerate building energy efficiency into its  
9 service offerings to make it part of everyday life without having consumers  
10 sacrifice the comfort and convenience they enjoy from their use of electricity.

11 **Q. HOW DOES THE COMPANY PROPOSE TO BE COMPENSATED FOR**  
12 **ENERGY EFFICIENCY RESULTS UNDER SAVE-A-WATT?**

13 A. Under the save-a-watt approach, DE-Ohio, not consumers, will bear the risk of  
14 achieving the cumulative annual energy savings mandate set forth in the EE  
15 Mandate. Unlike the current cost recovery model under Rider DSM, the  
16 Company will not be compensated under Rider DR-SAW for expenses associated  
17 with programs that do not generate verified energy and capacity savings. Rider  
18 DR-SAW does not provide for explicit recovery of the Company's program costs.  
19 Further, the Rider DR-SAW charge cannot be avoided by those choosing a CRES  
20 provider for generation service.

21 To compensate and encourage the Company to become a leader in  
22 producing capacity and energy by "saving" watts, DE-Ohio requests that it be  
23 compensated on a percentage of the Company's avoided costs. For energy



1 conservation programs, DE-Ohio proposes to be paid X% of the net present value  
2 (NPV) of the avoided costs of energy and capacity over the life of the measure.  
3 For demand response programs, DE-Ohio proposes to be paid Y% of the avoided  
4 cost of capacity for that year. Further, the Company proposes that it be made  
5 whole for lost revenues associated with energy conservation programs for a period  
6 of three years following program implementation in each vintage year. The X and  
7 Y percentages will be provided in supplemental testimony after the cost-  
8 effectiveness analyses have been completed.

9 In addition to the potential for forfeiture under R.C. 4928.66(C), the  
10 Company also faces the additional penalty, or risk, of not recovering its program  
11 costs if it fails to achieve the targeted energy efficiency impacts set forth in the EE  
12 Mandate. In other words, under the save-a-watt approach consumers will not pay  
13 for energy savings that the Company does not achieve. From this revenue stream,  
14 the Company will pay for all marketing, administration, program incentives, and  
15 measurement and verification costs.

16 **Q. DOES THE COMPANY PROPOSE TO CAP ITS EARNINGS ON**  
17 **EFFICIENCY PROGRAMS?**

18 **A.** Yes. The earnings cap is determined by comparing the actual three-year total  
19 avoided cost savings associated with the actual kW and kWh savings with the  
20 targeted three-year total avoided cost savings to calculate the percentage of  
21 targeted savings achieved. The percentage of savings achieved is determined by  
22 dividing the actual avoided energy and capacity costs at the end of the three-year  
23 period by the total forecasted avoided energy and capacity costs over the same

1 time period. This ratio determines the after-tax return on investment (ROI) cap  
2 the Company will be allowed. If the ratio is greater than 105%, the Company will  
3 be allowed to earn up to an 18% ROI. Between 105% and 80%, the Company can  
4 earn up to a 15% ROI. Below 80%, the Company can earn up to a 9% ROI.

5 The next step is to calculate the earnings cap by multiplying the program  
6 costs (which include all incentives, administrative costs, measurement and  
7 verification (M&V) expenses, marketing and advertising, capital costs, and other  
8 program-related expenses) by the allowed ROI, as determined above. The  
9 earnings cap is then compared to the net income derived from the energy  
10 efficiency programs over the three year term after including any impacts from the  
11 true-up process following the final year of the program. If the related net income  
12 exceeds the earnings cap, consumers will receive a full refund of the amount by  
13 calculating the net difference grossed up for taxes to a revenue requirement. If the  
14 net income is less than the earnings cap, no adjustment is necessary.

15 **Q. HOW WILL THE COMPANY TRUE-UP LOST MARGINS?**

16 A. At the end of the three-year period, the Company will calculate the difference  
17 between the amount of lost margins collected during the three year period, and the  
18 amount of lost margins that should have been collected. This difference will be  
19 credited or charged back to consumers in the fourth year.

20 **Q. WILL THE COMPANY CALCULATE CARRYING COSTS ON LOST**  
21 **MARGINS OR PROGRAM REVENUES THAT WERE UNDER- OR**  
22 **OVER-COLLECTED DURING THE TIME PERIOD?**

1 A. No. Any differences that were over- or under-collected will be  
2 determined without including carrying costs on the balances.

3 **Q. IS THERE A MINIMUM LEVEL OF REVENUE FROM ENERGY**  
4 **EFFICIENCY PROGRAMS THAT THE COMPANY IS GUARANTEED**  
5 **TO EARN?**

6 A. No, the Company is not guaranteed to earn a minimum level of revenue from  
7 efficiency programs. Earned revenue is a function of the level of energy  
8 efficiency achieved and the allowed ROI.

9 **Q. HOW WILL THE COSTS OF THE COMPANY'S ENERGY EFFICIENCY**  
10 **PROGRAMS BE ALLOCATED BETWEEN CONSUMER CLASSES?**

11 A. The Company has proposed that residential consumers pay for programs available  
12 to residential consumers and non-residential consumers pay for programs  
13 available to non-residential consumers. Eligible consumers described later in my  
14 testimony will be permitted to opt out of the Company's energy efficiency  
15 program portfolio.

16 **Q. WHAT ARE THE DIFFERENCES BETWEEN SAVE-A-WATT AND**  
17 **OTHER REGULATORY MODELS FOR ENERGY EFFICIENCY?**

18 A. The single biggest difference between save-a-watt and other regulatory models for  
19 energy efficiency is that the utility only gets paid for the energy efficiency results  
20 it delivers, *i.e.*, the energy efficiency impacts (kWh and kW) realized by  
21 consumers as verified by an independent party. Consumers only pay for energy  
22 efficiency resources that are delivered.

1           Most approaches to energy efficiency pay utilities, or other administrators,  
2           for their marketing, administration, program incentives, and measurement and  
3           verification expenses regardless of the energy efficiency impacts they achieve. As  
4           a result, the risk of not achieving the energy efficiency impacts and the risk of  
5           achieving them at a higher unit cost than planned are assumed by consumers. In  
6           contrast, the save-a-watt regulatory model shifts this burden to the utility.

7   **Q.   ARE THERE ANY OTHER DIFFERENCES BETWEEN SAVE-A-WATT**  
8   **AND OTHER ENERGY EFFICIENCY APPROACHES?**

9   A.   There is one other significant difference. Past experience has shown traditional  
10       energy efficiency approaches do not provide the needed flexibility to quickly  
11       adjust product and service offerings, incentives, and marketing focus as consumer  
12       needs, markets, and technologies change. Programs should not be so prescriptive  
13       that they inhibit the Company's ability to customize and personalize offers in a  
14       manner that consumers value if we truly are focused on delivering all cost-  
15       effective energy efficiency to consumers.

16   **Q.   CAN YOU ELABORATE ON THE FLEXIBILITY YOU JUST**  
17   **DESCRIBED?**

18   A.   Yes. Under the save-a-watt approach, DE-Ohio proposes to be able to make  
19       program changes and reallocate resources among programs over the lives of the  
20       programs to optimize results for both consumers and the Company. All programs  
21       will continue to be filed and approved by the Commission; however, participation  
22       and spending levels by program will not be unduly restricted by pre-established  
23       limits. This flexibility is crucial to the success of the Company's energy efficiency

1 efforts, particularly given the innovative nature of the effort and the need to make  
2 timely and responsive changes as the Company gains experience working with  
3 consumers in emerging energy efficiency markets. The Company believes  
4 flexibility to modify programs' costs, consumers targeted, incentives, and impacts  
5 will promote the achievement of the highest level of energy efficiency at the  
6 lowest possible cost. Such flexibility will allow the Company to maximize  
7 consumer benefits; will let consumer demand and markets dictate the ebb and  
8 flow of program funding; and will help the Company pursue impacts at the lowest  
9 possible cost.

10 DE-Ohio will file for approval of the maximum incentives that may be  
11 offered to consumers under each of its proposed programs. Should the Company  
12 seek to change these maximums, it agrees that Commission approval is needed;  
13 however, any variations below the maximum level should not require approval.  
14 Instead, the Company believes that such variances might be in consumers' best  
15 interests and should not require further regulatory review. For example, if  
16 consumer demand suddenly increased for T5 light fixtures because a large  
17 national retail chain makes a global commitment to the technology, DE-Ohio  
18 believes it should be permitted to reduce its consumer incentive and shift much of  
19 the money it had earmarked for such a promotion to another program that does not  
20 enjoy similar support. Such flexibility allows the Company to shift funding  
21 among programs as the market dictates in order to derive the highest benefit while  
22 reducing unnecessary costs.

23 **Q. WHAT RECOMMENDATIONS DOES DE-OHIO PROPOSE**

1           **REGARDING PROGRAM FLEXIBILITY UNDER SAVE-A-WATT?**

2    A.    The Company proposes the following limitations it believes are in the best interest  
3           of consumers, allowing the Company to maximize cost-effective energy efficiency  
4           impacts at the lowest possible cost:

- 5           1. Program changes that result in the reassignment of costs and benefits from  
6                 one consumer class to another;
- 7           2. Changes to the maximum participant incentives that may be offered;
- 8           3. Adding any new or removing any existing programs from the proposed  
9                 portfolio of products and services; and
- 10          4. Any combination of the changes in this list.

11           Additionally, DE-Ohio recommends that the Commission approve a total  
12           avoided cost savings level for the portfolio of energy efficiency and demand  
13           response programs proposed by the Company. Achieving avoided cost savings  
14           20% above this level would require additional Commission approval.



1 consumers value enough to take action and drive higher participation in programs  
2 that do produce such verified results.

3 **IV. DEVELOPMENT OF DE-OHIO'S ENERGY EFFICIENCY PORTFOLIO**

4 **Q. PLEASE DESCRIBE THE PROCESS BY WHICH THE COMPANY**  
5 **DEVELOPED ITS EXISTING ENERGY EFFICIENCY PROGRAMS.**

6 A. The Company developed the current portfolio of energy efficiency programs,  
7 which were approved July 11, 2007, by the Commission, with the consensus of  
8 the interested stakeholders in the Duke Energy Community Partnership (DECP),  
9 the Collaborative formed in January 1997. The DECP established a purpose to  
10 DE-Ohio:

11 [G]uidance and make recommendations on cost-effective programs  
12 that will benefit all residential consumers, especially low income,  
13 and help the community become more energy efficient.  
14

15 The DECP Board is comprised of up to 10 directors. The DECP is chaired by a  
16 representative from DE-Ohio. The other members are a comprised of individuals  
17 from community service organizations that focus on energy issues, other  
18 community service agencies, and individuals representing consumers as a whole.  
19 In addition to DE-Ohio, the following organizations participate in the DECP  
20 collaborative: Working in Neighborhoods, People Working Cooperatively, Home  
21 Ownership Center of Greater Cincinnati, Adams/Brown Counties Economic  
22 Opportunities, Communities United for Action, Cincinnati/Hamilton County  
23 Community Action Agency, Clermont County Community Services, Cincinnati  
24 Public Schools, and The Kroger Company. Ex officio members include  
25 representatives with the Public Utilities Commission of Ohio, the Office of the



1 Consumers' Counsel, and the Ohio Energy Department.

2 **V. PROPOSED ENERGY EFFICIENCY PROGRAMS**

3 **Q. PLEASE GENERALLY DESCRIBE THE PORTFOLIO OF EXISTING**  
4 **DE-OHIO ENERGY EFFICIENCY PROGRAMS.**

5 **A.** The Company's existing portfolio includes a variety of cost-effective energy  
6 efficiency programs that assist consumers in saving energy and managing their  
7 bills. The programs, as set forth in Attachment TES-1, also provide consumers  
8 with the opportunity to lower their environmental footprint through direct  
9 participation in energy efficiency. The DE-Ohio program portfolio includes the  
10 following mix of energy conservation and demand-response programs:

11 **RESIDENTIAL ENERGY EFFICIENCY PROGRAMS**

- 12 • **Home Energy House Call Program** offers an onsite energy assessment to  
13 qualified residential consumers. The program provides a customized  
14 report of energy saving opportunities and a free Energy Efficiency Starter  
15 Kit that contains easy to install measures that save energy.
- 16 • **Residential Smart Saver® Program** provides incentives to residential  
17 consumers that install energy efficient heating and cooling systems in their  
18 homes.
- 19 • **Energy Star Products Program** provides discounts and coupons for  
20 purchasing qualified Energy Star products like Compact Fluorescent  
21 Lights (CFLs). Special offerings may also be available for selected Energy  
22 Star appliances.

- 1       •     **Ohio Energy Project Energy Efficiency Education for Schools**  
2             **Program** provides energy education curriculum and activities through the  
3             National Energy Education Development (NEED) program. Energy  
4             Efficiency Starter Kits are also distributed to participating K-12 students.
- 5       •     **Energy Efficiency Website** provides a variety of energy efficiency  
6             information for residential consumers. The site offers program  
7             information, energy saving tips, informative videos and the Home Energy  
8             Calculator. The Home Energy Calculator allows a consumer to develop a  
9             customized online energy assessment of their home and receive a free  
10            energy efficiency starter kit.
- 11      •     **Power Manager Program** provides incentives to residential consumers  
12            that allow Duke Energy Ohio to cycle their outdoor air conditioning unit  
13            during peak energy periods between May and September.

#### 14     **RESIDENTIAL PILOT AND RESEARCH PROGRAMS**

- 15      •     **Pre-paid Energy Program** allows participating consumers to purchase  
16            their energy prior to consumption. The program allows consumers to  
17            better control their energy bills and promotes energy conservation.  
18            Participants have a monitor inside their home that provides information  
19            about their energy usage and provides a visual indicator as the prepaid  
20            energy is used.
- 21      •     **AC Check Program** provides a central air conditioning tune up for  
22            residential home owners. The technician will complete an onsite  
23            assessment of system operation including appropriate air flow and

refrigerant charge.

- **Room AC Turn-in Program** encourages residential consumer to turn in the old, but functioning, window air conditioning units and to purchase a new Energy Star unit. The old units are properly recycled.
- **Home Energy House Call Plus Program** provides a more comprehensive onsite assessment of the residence by using diagnostic tools like a blower door, infrared camera and duct leakage tests. The consumer receives a report of the findings and is provided access to a one stop solution for implementing the opportunities identified in the assessment.
- **Personalized Energy Report Program** provides a mail in alternative for completing an assessment of the home. The consumer completes a simple questionnaire about the home and mails it back to Duke Energy. After completing the analysis, a customized report is mailed back to the consumer with energy saving opportunities and tips. Participating consumers also receive an Energy Efficiency Starter Kit.

#### **NON-RESIDENTIAL ENERGY EFFICIENCY PROGRAMS**

- **Non-residential Smart Saver Incentive Program** provides prescriptive incentives for businesses to install high efficiency equipment. There are over 65 measures that qualify for incentives. Major categories include lighting, HVAC, motors, pumps, variable frequency drives, food service equipment and process equipment.
- **Smart Saver Incentives for Schools Program** provides prescriptive and customized incentives for K through 12 schools. The program includes an

1 assessment for qualified schools that can identify opportunities and  
2 provide incentives for measures not addressed through the prescriptive  
3 incentive program. Energy education is included in the program.

- 4 • **PowerShare Program (not part of the most recent program approval**  
5 **in July 2007)** provides incentives for qualified business consumers that  
6 can reduce load during peak energy periods. The program offers  
7 customized incentives depending on the amount of energy reduced and the  
8 firmness of the consumer's commitment to reduce electrical load.

#### 9 **NON-RESIDENTIAL PILOT OR RESEARCH PROGRAMS**

- 10 • **Photovoltaic Program for Schools** increases awareness of technical  
11 achievements, environmental considerations, and public policy issues that  
12 have matured to make photovoltaic an option for meeting today's energy  
13 needs. The program also focuses on educating faculty and students in the  
14 Ohio public school system about the benefits of photovoltaic as a source of  
15 renewable energy through the installation of PV systems in selected Duke  
16 Energy served schools.

17 **Q. DOES THE COMPANY PROPOSE TO CHANGE THE INCENTIVE**  
18 **COMPENSATION MECHANISM FOR THESE PROGRAMS?**

19 A. Yes. At this time, the Company proposes to include the existing portfolio of  
20 energy efficiency programs in its energy efficiency plan pending further  
21 evaluation of these and other programs after obtaining new market-based capacity  
22 costs from the RFP described earlier in my testimony. For the policy reasons set  
23 forth earlier in my testimony, DE-Ohio is seeking to be compensated for energy

1 and capacity savings generated by the existing portfolio of programs using Rider  
2 DR-SAW. Revenue requirements to support the Rider DR-SAW charge will be  
3 filed after (1) completion of the RFP process, and (2) program cost-effectiveness  
4 analysis using this avoided capacity cost has been done.

5 **Q. IS DE-OHIO PROPOSING TO INCLUDE ANY PROGRAMS NOT**  
6 **CURRENTLY INCLUDED IN RIDER DSM IN RIDER DR-SAW AS PART**  
7 **OF THIS FILING?**

8 A. Yes, DE-Ohio is proposing to include its non-residential load management  
9 program, PowerShare, in its energy efficiency plan and Rider DR-SAW. The  
10 program description for the PowerShare program is attached to my testimony as  
11 TES-2.

12 **Q. WHAT IS THE RATIONALE FOR INCLUDING POWERSHARE IN**  
13 **SAVE-A-WATT?**

14 A. The Company believes that because load management (also referred to as demand  
15 response) programs provide capacity value to the utility similar to peaking plant  
16 resources, compensation for these programs is more appropriately based on  
17 avoided capacity, not expense recovery.

18 As technologies for monitoring and control continue to evolve, the  
19 convergence of conservation and demand response resources is becoming more  
20 evident. Large energy users are now able to invest in control technologies that not  
21 only manage overall energy use, but can also respond to dynamic price signals to  
22 participate in demand response programs, such as PowerShare. Because a single  
23 technology investment by the consumer can create both conservation and demand

1 response impacts, treating these two benefits in a substantially different manner  
2 could prove to be a disincentive to such investments in the future. In contrast,  
3 under its save-a-watt plan DE-Ohio seeks to treat both conservation and demand  
4 response impacts in a manner that achieves the highest synergistic value.

5 **Q. CAN DE-OHIO MEET THE EE MANDATE WITH ITS EXISTING**  
6 **PORTFOLIO OF CONSERVATION PROGRAMS?**

7 A. The existing portfolio described above and in Attachment TES-1 is projected to  
8 deliver energy savings sufficient to meet the EE Mandate through 2010.  
9 However, because significant new and improved program offerings will be needed  
10 if the Company is to achieve the EE Mandate in subsequent years, DE-Ohio will  
11 use the financial incentives, program flexibility, and access to capital created by  
12 the save-a-watt model to vigorously research, develop, and pursue new program  
13 initiatives and SmartGrid-enabled programming opportunities described later in  
14 my testimony.

15 **VI. DEVELOPMENT OF FUTURE PROGRAMS AND**  
16 **THE IMPACT OF SMARTGRID**  
17

18 **Q. WHAT IS THE COMPANY'S APPROACH TO DEVELOPING**  
19 **INNOVATIVE ENERGY EFFICIENCY PROGRAMS?**

20 A. As a service business, the Company must invest to develop a deeper  
21 understanding of consumers and their perception of value from energy efficiency.  
22 DE-Ohio proposes a three-phased approach to the development of innovative  
23 programs with much broader scale and reach than exists today.

24 The first phase is to expand the existing programs with new energy  
25 efficiency equipment incentives and channel partners to maintain the programs'

1 initial success. The existing SmartSaver programs provide an umbrella for  
2 equipment incentives that are cost-effective and must be actively managed to  
3 remain successful. For example, incandescent light bulbs have effectively been  
4 banned after 2012 as a result of new efficiency standards passed in the Energy  
5 Independence and Security Act of 2007. As a result, CFLs will soon be excluded  
6 from our SmartSaver program. Thus, in order just to maintain DE-Ohio's current  
7 savings level, new equipment must be introduced to replace the CFL measure.  
8 Our development team is already working with manufacturers and retailers on  
9 ways to introduce cost-effective LED lighting options.

10 The second phase is focused on comprehensive consumer solutions  
11 targeted to specific consumer segments. A list of programs currently being  
12 considered or in the preliminary stages of development are:

- 13 • **Energy Star Home Performance Program.** This is a comprehensive  
14 approach to efficiency in existing homes (building envelope insulation and  
15 sealing, equipment and window upgrades, and improvements in HVAC).  
16
- 17 • **Custom SmartSaver Offers for Vertical Markets.** The intent of this  
18 program is to redefine our non-residential SmartSaver program to enable  
19 incentives for custom solutions that are particular to certain type of  
20 business. These custom incentives would be combined with prescriptive  
21 measures to create a pre-defined solution targeted at vertical markets (data  
22 centers, national chains, healthcare, universities and government buildings  
23 Partnerships with consumers and industry groups like the EPA, DOE, Real  
24 Estate Roundtable and US Green Building Council will be key to the  
25 success of these programs.  
26
- 27 • **New Construction.** DE-Ohio plans to work with local residential  
28 builders to develop Energy Star option packages and promotions and take  
29 full advantage of federal and state tax incentives. In the commercial area,  
30 the Company is looking to partner to co-develop new programs that  
31 include renewables like zero energy buildings. Asset ownership and  
32 financing are key components of this offer.  
33

1           The third phase will focus on capabilities enabled by SmartGrid  
2           technology. A SmartGrid, as proposed by the Company in this proceeding, with  
3           interval meter reading and two-way consumer communication capabilities,  
4           enables the development of new products and services to achieve additional  
5           energy efficiency savings. The ability to leverage these capabilities and install  
6           equipment on the consumer's side of the meter to monitor and control individual  
7           devices provides an additional opportunity for innovation. Today, most of these  
8           products and services are in the concept stage and could take several years to fully  
9           develop. A few of these concepts include:

- 10           ➤ **Home & Away.** One idea is to enable enhanced energy management of  
11           a home or facility automatically based on occupancy. A simple concept  
12           called "home and away" that be applied to every  
13           temperature controlled zone in a facility with software routines  
14           (algorithms) to optimize efficiency within the boundaries of comfort,  
15           convenience and productivity set by the consumer.  
16
- 17           ➤ **Prices to Devices.** Another concept is to enable intelligent  
18           devices to respond directly to the price signals. A simple example would  
19           an intelligent refrigerator that figures out the best time to defrost to  
20           minimize a consumer's cost and help optimize the utility system based on  
21           price signals.  
22
- 23           ➤ **Integrated Energy Management Systems.** The two examples above will  
24           be part of a home energy management system that is operated in a  
25           partnership between consumers and DE-Ohio. In addition,  
26           exploring Smart Grid applications like mesh networks for multiple  
27           metered campus-like settings to enable facility managers more finite  
28           monitoring and control of major energy uses will serve non-residential  
29           consumers.  
30

31           It is with programs enabled by new and emerging technologies that the  
32           Company believes the increased incentive potential and payment on results model  
33           under save-a-watt will prove itself to be a superior compensation model for energy  
34           efficiency and thereby better position DE-Ohio to meet the state's aggressive EE



1       Mandate. With greater upside earnings opportunity under save-a-watt comes  
2       greater incentive for DE-Ohio to assume risks associated with researching,  
3       developing, and deploying new program offerings. There is clearly risk under the  
4       save-a-watt model - the Company must cover the program cost and deliver  
5       programs that consumers value in order to achieve results and get compensated.  
6       Consumers will only participate in energy efficiency programs if there is apparent  
7       value from their perspective. DE-Ohio's energy efficiency plan creates a win/win  
8       if the Company can deliver results.

9       **Q. YOU HAVE STATED THAT ENERGY EFFICIENCY PROGRAMMING**  
10       **OPPORTUNITIES ENABLED BY SMARTGRID TECHNOLOGIES ARE**  
11       **PART OF DE-OHIO'S THIRD PHASE OF PROGRAM DEVELOPMENT.**  
12       **WHAT IS DUKE ENERGY'S SMARTGRID VISION?**

13      A. DE-Ohio is proposing, as part of the ESP filing, SmartGrid infrastructure  
14       investments for its power delivery system. As described earlier and in the  
15       testimony of DE-Ohio witnesses Todd W. Arnold and Christopher D. Kiergan, a  
16       SmartGrid with interval meter reading and two-way consumer communication  
17       capabilities enables the development of new products and services to achieve  
18       additional energy efficiency savings. Duke Energy's vision is to leverage the  
19       capabilities of the SmartGrid combined with research to develop a deep  
20       understanding of consumers' needs to make energy efficiency an automatic  
21       service that is "back of mind" for our consumers. In other words, energy  
22       efficiency becomes a standard part of DE-Ohio's services. A consumer would  
23       choose their desired level of comfort, convenience and productivity for a given

1 cost each month. The Company would then help manage a consumer's energy  
2 usage and corresponding bill based on the consumer's choices. A combination of  
3 time-differentiated prices with extended monitoring and control of major energy  
4 uses within a building premise provide the opportunity to offer the "back of mind"  
5 services that will make energy efficiency standard for every consumer.

6 **Q. ARE THE COSTS AND BENEFITS OF THE INCREASED CONSUMER**  
7 **ENERGY EFFICIENCY ENABLED BY SMARTGRID INCLUDED IN**  
8 **RIDER DR-IM?**

9 A. No. The SmartGrid initiative includes the infrastructure costs up to and including  
10 the meter. The cost of any devices beyond the meter that enable energy efficiency,  
11 such as smart thermostats and smart appliance chips will be considered a cost of  
12 energy efficiency. Other costs that would be associated with energy efficiency  
13 programs include the increase in data transfer costs that would be required for new  
14 programs on the consumer side of the meter. These costs will be considered by  
15 the Company in program development and cost-effectiveness evaluation under its  
16 energy efficiency plan. Implementing SmartGrid alone will not achieve DE-  
17 Ohio's energy efficiency vision. New energy efficiency programs as described  
18 above, additional equipment on the consumer side of the meter, consumer  
19 education, as well as consumer enrollment and participation will be needed to  
20 achieve additional energy efficiency savings.

21 **VII. OPT OUT**

22 **Q. WHO WILL BE ELIGIBLE TO OPT-OUT OF THE COMPANY'S**  
23 **ENERGY EFFICIENCY PLAN?**

1 A. DE-Ohio proposes similar criteria for consumer opt-out as currently in place for  
2 Rider DSM. The rules proposed by DE-Ohio for approval in this proceeding are  
3 as follows:

- 4 • All transmission service (Rate TS) consumers and non-metered accounts  
5 have the option to opt-out of Rider DR-SAW. Currently, the opt-out is  
6 automatic and DE-Ohio proposes to change this to a consumer-initiated  
7 opt-out because there are significant energy efficiency savings  
8 opportunities in large businesses. Consumers should initiate the opt-out as  
9 a direct way for them to indicate that they have already realized the  
10 opportunities for efficiency savings within their business.
- 11 • Consumers have the option of opting out if:
  - 12 ○ The consumer's single site load in DE-Ohio's certified service  
13 territory is equal to or greater than 1,000 kW; or
  - 14 ○ The consumer's total aggregate load in DE-Ohio's certified service  
15 territory is equal to or greater than 1,500 kW.
- 16 • Consumers that opt-out:
  - 17 ○ Must specify the accounts that should opt-out;
  - 18 ○ May choose to opt-out a single or multiple accounts;
  - 19 ○ For example, if a consumer has three 500 kW accounts then the  
20 consumer meets the opt-out threshold and may choose to opt-out  
21 one or all three accounts.

22 **Q. HOW DOES DE-OHIO PROPOSE TO HANDLE CONSUMERS THAT**  
23 **ELECT TO OPT-OUT OF ITS ENERGY EFFICIENCY PROGRAMS?**

1     A.     If a consumer qualifies to opt-out of the Company's energy efficiency programs,  
2           the consumer may choose to opt-out for all or select qualifying industrial and  
3           large commercial accounts it has with DE-Ohio. However, the consumer cannot  
4           opt-out of individual programs. The choice to opt-out applies to the Company's  
5           entire portfolio of energy conservation and demand response programs.

6     **Q.     DOES THE COMPANY'S PLAN ENCOURAGE ITS LARGER**  
7           **COMMERCIAL AND INDUSTRIAL CONSUMERS TO PARTICIPATE**  
8           **IN ITS ENERGY EFFICIENCY OFFERINGS DESPITE THE**  
9           **OPPORTUNITY TO OPT OUT?**

10    A.     Yes. Although we believe all consumers benefit from all energy efficiency  
11           programs, we also recognize that some of our largest commercial and industrial  
12           consumers have undertaken significant energy conservation initiatives on their  
13           own in an effort to reduce their cost of energy. Yet, our experience suggests that  
14           most of these consumers have a running list of energy efficiency projects that  
15           would be enhanced through participation in the Company's programs providing a  
16           net benefit to the participating consumer. DE-Ohio's efficiency programs can  
17           address some of the historical barriers to participation such as longer than  
18           acceptable pay-back periods and the lack of understanding regarding the size and  
19           number of energy savings opportunities that are available. We realize these  
20           opportunities must be evaluated on an individual consumer account basis.  
21           Finally, energy efficiency results, whether from conservation programs or demand  
22           response initiatives, benefit all consumers. Under our energy eEfficiency plan,  
23           measurable and verifiable energy and demand savings will be included as an

1 increasing component of our IRP, delaying the need to build or buy more  
2 generation, capacity, and power. This benefits all consumers.

3 **Q. IN YOUR OPINION, IS DE-OHIO'S PROPOSED ENERGY EFFICIENCY**  
4 **PLAN IN THE PUBLIC INTEREST?**

5 A. Yes. As a result of the enactment of Senate Bill 221, DE-Ohio is now required to  
6 meet aggressive energy efficiency benchmarks and faces potential penalties for  
7 failing to achieve these targets. The Company believes that its save-a-watt  
8 approach to utility-sponsored energy efficiency is needed to stimulate investment  
9 and innovation in energy efficiency products and services, on the one hand, and  
10 widespread consumer participation, on the other. The current regulatory model of  
11 program cost and "lost revenue" recovery with a small incentive is simply not  
12 sufficient to encourage and fund significant investments in energy efficiency  
13 research technology, products, and services. These investments will be crucial to  
14 the Company's ability to achieve the EE Mandate. DE-Ohio believes its save-a-  
15 watt approach can attract the necessary investment and ingenuity to place us on a  
16 path toward a more sustainable and secure energy future, which is clearly in the  
17 public interest. Simply put, the Company's energy efficiency plan benefits  
18 consumers, the environment, and the Company.

19 **VIII. SCHEDULE SPONSORED BY WITNESS**

20 **Q. WAS ATTACHMENT TES-1 PREPARED BY YOU OR UNDER YOUR**  
21 **SUPERVISION?**

22 A. Yes.  
23

## IX. CONCLUSION

2 Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY IN  
3 THIS PROCEEDING?

4 A. Yes.