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In the Matter of:

**AN INVESTIGATION OF THE ENERGY AND
REGULATORY ISSUES IN SECTION 50 OF
KENTUCKY'S 2007 ENERGY ACT**

**Administrative Case No.
2007-00477**

SUPPLEMENTAL TESTIMONY OF SIERRA CLUB

Please State Your Name and Organization.

My name is Susan Marie Zinga and I'm a Principal with Energy Analysis Associates of Basking Ridge, New Jersey. I'm presenting testimony as an expert witness on behalf of Sierra Club.

What Are Your Credentials to Act in This Capacity?

I hold two degrees from Purdue University: a Master of Science in Public Policy and Public Administration with a concentration in Economics and a Bachelor of Arts in Political Science.

I began my energy career in 1984 with the Indiana Utility Regulatory Commission as a member of a specialized team of experts formed by legislative mandate to produce independent energy forecasts and integrated resource plans for Indiana electric utilities. During the six years of my employment there I was also charged with examining the wholesale power marketplace within the state and authoring two reports to the Governor.

Later I was employed by PSI Energy, now known as Duke Energy Indiana, where I was responsible for the development of a data management system to track the impacts, lost revenues, and participation levels of corporate-sponsored energy efficiency programs.

During my career I was also a manager at Energy Management Associates, (later a division of EDS) where I led energy efficiency-related projects for both domestic and international clients. I then accepted a position with the Pricing team at MEAG Power, a wholesale electric generation and transmission corporation comprised of 48 municipalities across Georgia, to help develop and administer wholesale pricing strategies. Subsequently, I became Director of Energy Policy at Southface Energy Institute in Atlanta where I had the opportunity to participate as a technical expert for Governor Barnes' Energy Task Force; work closely with the Department of Energy on policy and projects important to the Southeast; and play a leadership role in developing a statewide techno-economic potential study for energy efficiency.

How Does Your Testimony Expand Upon That Of Other Expert Witnesses On Behalf Of Sierra Club?

My testimony expands on the energy policy strategy of a Public Benefit Fund as presented in the direct testimony of Andrew S. McDonald. This supplemental testimony will provide greater insight into the establishment, administration and advantages of Public Benefit Funds by presenting the diverse range of models and mechanisms currently in use by many states across the nation so that Kentucky policymakers will have a breadth of information with which to formulate a plan best-suited to meet the state's energy requirements while optimizing the quality of life for its citizens.

How Have States' Policies Changed With Respect To Demand-side Management?

For over twenty-five years, state public service commissions have recognized that demand-side management (DSM) programs, including energy efficiency and load management, are an important complement to supply-side options within every utility's integrated resource plan. With DSM, customers not only realize lower electricity bills, but they are implicit benefactors because demand-side management helps a utility: improve its system load factor; maximize use of its existing power supplies; reduce costs during periods of heavy system demand; slow the forecasted rate of energy consumption; and help defer or eliminate the need for future generating facilities.

States did not want to lose these benefits with the advent of deregulation when the process of acquiring demand-side resources needed to change in many jurisdictions.

Therefore, many states enacted legislation to provide for the funding of energy efficiency, low-income energy assistance and renewable energy resources as these activities offer significant benefits that were not explicitly captured in the cost of electricity generation. To this end, several states established Public Benefit Funds (PBF).

What is a Public Benefit Fund?

A Public Benefit Fund refers to a funding mechanism with a stream of revenue, usually collected through a small surcharge on consumer electricity bills, which is sometimes known as a System Benefits Charge (SBC). These funds are used to support energy efficiency, renewable energy, energy research and development, and low-income energy assistance projects.

How Have Public Benefit Funds Been Established?

States enacted legislation to establish these funds, with state Public Service Commissions promulgating rules regarding the mechanics of fund operations. In many cases, the legislation also specifies the oversight and administration of the monies in these funds as well the level and expiration of funding. Additionally, the decision-making process used for project prioritization and selection may also be specified within this legislation.

Do Only States With Deregulated Electricity Marketplaces Have Public Benefit Funds For Energy Efficiency?

No, Wisconsin and Vermont have Public Benefits Funds and do not have deregulated electricity markets. And although Montana, Oregon, California, and New Mexico have suspended electricity deregulation, their PBFs remain intact.

How Many States Currently Have Public Benefit Funds?

There are at least 18 states and the District of Columbia currently utilizing Public Benefits Funds. These include: California, Connecticut, Delaware, Illinois, Maine, Michigan, Minnesota, Montana, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oregon, Pennsylvania, Rhode Island, Vermont, and Wisconsin.

Do Only Investor-owned Utilities Contribute to Public Benefit Funds?

No, investor-owned utilities are not the only entities supporting energy efficiency and renewable energy through PBFs. Even in cases where state legislation has exempted rural membership cooperatives and municipalities from participating in PBFs, they have established their own funds. In Delaware, for example, nine municipalities and towns adopted the state mandated SBC for investor-owned utilities of \$.000178 on each retail kWh consumed. In this arrangement, each utility has sole access to the fund revenues contributed by its customers. The Delaware Electric Cooperative, which was also allowed to opt-out of the state's Green Energy Fund, established its own energy efficiency and renewable energy fund with the same bill surcharge as the municipals.

In Connecticut, G.S. 7-233y requires municipal electric utilities to provide a fund for renewable energy and energy efficiency. In addition, it specifies that these utilities must also adopt a plan that is consistent with the comprehensive plan of the state's Energy Conservation Board.

In another example, the citizens of Boulder, Colorado voted to levy and collect a surcharge from all electric utility customers to fund energy efficiency and renewable energy. Beginning in April 2007 and expiring in 2013, this legislation sets a cap on the maximum per unit charge that can be levied on customer bills to assure moderation in future administrations. Currently, residential customers pay a surcharge of \$0.0022 cents per kWh while commercial customers pay \$0.0004 cents per kWh and industrial customers see a \$0.0002 per kWh charge added to their bills.

How Is The Level Of Funding Determined?

There are essentially 4 models used by states to support demand-side management and obtain the benefits of this public good.

1. Legislated Volumetric Charge

In some states, including Connecticut, Delaware, Massachusetts, Rhode Island, and the District of Columbia, the amount to be collected for each kilowatt-hour of electricity sold is specified in the legislation itself.

The funding of New Hampshire's PBF for energy efficiency is straightforward with a non-by-passable charge of \$0.0018 per kWh.

In Delaware, the initial funding rate of \$0.000178 was established by legislation in March 1999, and doubled by new legislation in 2007 to \$0.000356.

In the District of Columbia, legislation established the minimum and maximum allowable surcharge which ranges from \$0.0001 to \$0.002 per kWh, and authorized the Public Service Commission to set the surcharge within these boundaries.

Massachusetts legislation, on the other hand, uses a declining gradation for funding which began with \$0.0033 per kWh in 1998 and has declined to \$0.0025 for years 2002-2012.

2. Percentage of Utility Revenues

Some states, including Montana, New York, Oregon and Wisconsin require demand-side management funding as a percentage of utility revenues.

As part of their restructuring legislation SB1149, Oregon requires Pacific Power and Portland General Electric to collect a 3% charge from their customers to fund renewable energy and energy efficiency projects.

Montana keeps their PBF revenues consistent over time by requiring that all utilities, including cooperatives, contribute 2.4% of their 1995 revenues to a Universal System Benefits Program each year. This provides \$14.9 million to their fund annually. The surcharge amount on customer bills is determined by the Public Service Commission and the individual electric cooperatives.

In New York, annually from 2006-2011, each utility must contribute an amount equal to 1.42% of their 2004 annual revenue to the New York State Energy Research and Development Authority (NYSERDA) to fund renewable energy, energy efficiency projects, and low-income energy assistance.

Wisconsin requires utilities to contribute to the PBF 1.2% of their gross operating revenues for the average of the most recent three years. The Wisconsin Public Service Commission, however, has the authority to specify a higher funding level. Wisconsin also revamped its funding mechanism in March 2006 with SB 459 to prohibit transfer of these funds for other purposes.

3. Budget Allocation

Some states fund demand-side management through annual budgets determined by the Public Service Commission with customer surcharge calculations based on established target funding levels. Illinois, Ohio, New Jersey, and Vermont are examples of this mechanism.

Vermont's legislation in 1999 authorized the Vermont Public Service Board to establish an annual budget, and derive volumetric charges based on factors unique to each utility service territory. Subsequent legislation removed the annual cap, which was set at \$17.5 million, resulting in a funding target of \$30.75 million for 2008.

Ohio's fund for renewable energy and energy efficiency has an aggregate annual funding cap of \$5 million. Customer surcharges are determined by the Ohio Department of Development which allocates them based on the number of customers in each utility service area during the previous year.

In New Jersey, the Board of Public Utilities (BPU) imposes a non-bypassable surcharge on all of the states' seven investor-owned utilities for renewable energy and energy efficiency projects by determining multi-year funding targets needed to support budgetary requirements with the ability to carryover unused funds from previous years.

Although Illinois requires all electric utilities and retail electric suppliers to contribute on a pro rata basis \$3 million annually to the state's Energy Efficiency Trust Fund, it obtains a substantial portion of its funding for energy

efficiency and renewable energy projects from the \$250 million settlement resulting from the state's approval of the ComEd and PECO merger in 1999.

4. Performance Standard

A few states fund demand-side management programs by identifying non-monetary performance standards that must be attained by the utilities with budgetary review and approval of customer charges by the state regulatory agency.

Nevada established a renewable portfolio standard in 1997 requiring utilities to provide a pre-determined level of their retail sales from renewable energy resources. Subsequent legislation (Assembly Bill 3) passed in 2005, mandates that utilities may now meet these annual requirements through energy efficiency as well as renewable energy.

Texas is another state with an energy efficiency performance standard. The Public Utility Regulatory Act of 1999 and its subsequent amendments set out the details of a System Benefits Fund. In addition to supporting renewable energy goals, this legislation requires utilities to acquire energy efficiency equivalent to at least 10 percent of their annual growth in demand (Section 39.905)

What Types of Mechanisms Have Been Established to Oversee and Administer These Funds?

The following table presents an overview of the different ways that states administer Public Benefits Funds. In some cases, funding is allocated through the state Public Service Commission, while in others these activities are handled by another state agency. Another method is to establish a non-profit organization for this purpose, as evidenced in Illinois and Oregon.

State	Administered by
California	California Public Utilities Commission (CPUC) oversees allocation of funds and approves plans with programs implemented by investor-owned utilities.
Connecticut	Investor-owned utilities, municipals and electric cooperatives

	administer their own funds and implement programs in accordance with a comprehensive state plan coordinated by the state's Energy Conservation Management Board.
Delaware	Delaware Dept. of Health & Social Services administers funds for low-income weather assistance and weatherization programs. There are separate funds for each municipal/town participating, the Delaware Electric Cooperative, and the state's sole investor-owned utility. Utilities only have access to their own funds.
District of Columbia	DC Energy Office
Illinois	The Illinois Department of Commerce and Economic Opportunity (DCEO) and Clean Energy Community Foundation
Maine	Maine Public Utilities Commission (PUC)
Massachusetts	Utilities administer energy efficiency programs with oversight from the MA Division of Energy Resources (DOER). The MA Dept. of Telecommunications and Energy reviews and approves the programs for cost-effectiveness.
Michigan	The Michigan Public Service Commission
Minnesota	Renewable energy projects are reviewed and approved by the Renewable Development Board consisting of 2 utility representatives, 2 representatives from the environmental community & 1 representative from the Native American community.
Montana	The Montana Dept. of Environmental Quality and the Montana Dept. of Public Health & Human Services.
New Hampshire	All energy efficiency programs are administered by the state's utilities with oversight from the New Hampshire Public Utility Commission.
New Jersey	Energy efficiency programs are delivered by third-party program managers with administration and oversight by the Board of Public Utilities.
New Mexico	Investor-owned utilities must obtain program approval from the New Mexico Public Service Commission. For cooperatives, approval for energy efficiency programs resides with the governing body of each cooperative utility.
New York	New York State Energy Research and Development Authority (NYSERDA)
Ohio	Ohio Department of Development administers the fund with oversight by a multi-stakeholder panel. They collaborate with the Ohio Public Utilities Commission to design and develop programs.
Oregon	Energy Trust of Oregon, an independent non-profit organization
Pennsylvania	There are four Sustainable Energy Funds (SEF) in Pennsylvania; each created through settlements with the major distribution utilities in the state and each administered by a different organization. The Pennsylvania Sustainable Energy Board was established to enhance communications among the four funds

	and the state agencies. The Metropolitan Edison Region SEF is administered by the Community Foundation for the Alleghenies. The Sustainable Development Fund is administered by the Reinvestment Fund. The West Penn Power SEF is administered by The Energy Institute of Penn State University in partnership with Energetics, Inc. and the Sustainable Energy Fund of Central Eastern Pennsylvania is administered by a nonprofit organization.
Rhode Island	In July 2007, program administration was transferred to the utilities with oversight from the Rhode Island Office of Energy Resources. Programs are subject to review by the Rhode Island Public Utilities Commission.
Vermont	Energy efficiency programs are administered by the Vermont Energy Investment Corporation (VEIC), an independent nonprofit organization.
Wisconsin	Had been administered by the Wisconsin Dept. of Administration, but in 2007 the utilities created individual funds and provide programs through private program administrators.

What Is The Median Per Capita DSM Expenditure in States with Public Benefit Funds?

A 2007 report by the American Council for an Energy-Efficient Economy (ACEEE) examined DSM expenditures by state. The data compiled in this report demonstrates that the median per capita DSM expenditure in 2004 for states with PBFs or energy efficiency performance standards was \$9.76 with a minimum expenditure of \$0.28 in Pennsylvania and a maximum of \$22.54 in Vermont. This report also identified that Kentucky utilities spent \$1.00 per capita in 2004 on demand-side management.

What Would the Median per Capita Spending Level Total For Kentucky?

The U.S. Census Bureau estimates that there were 4,206,074 residents in Kentucky during 2006. A fund sufficient to support the median expenditure level of \$9.76 per resident for demand-side management programs would total \$41,051,282. Additional funding would be required to sufficiently support renewable energy projects.

What Bill Surcharge Level Would Be Necessary To Achieve A Fund Of This Size?

Using the volumetric model as previously described, and the 2006 total retail sales for Kentucky reported by the U.S. Energy Information Administration, a surcharge of \$0.00046 would be placed upon each retail kWh sold in Kentucky to support a \$41 million funding level.

What Bill Impacts Could Residents Expect at This Level of Funding?

Based on data filed annually with the Kentucky Public Service by the four investor-owned electric utilities in the state, residential customers in their service territories could expect an increase of less than 1% on their monthly bills.

How Much Could Each Residential Customer Expect to Contribute to the PBF Annually at this Funding Level?

Although residential customer bills vary due to household characteristics such as size and appliance mix, PBF contributions would likely range from \$5.33 to \$7.69 per year for each residential customer.

In Addition to Realizing Savings on their Electric Bills from Demand-side Management, How Will a PBF help Kentuckians?

States recognize demand-side management as a public good because it confers many benefits on the residents and businesses of that state aside from energy bill savings. It stimulates the state's economy by freeing up capital previously needed for energy expenditures, and making it available for other economic opportunities. It also enhances the state's energy security by reducing dependency upon fossil fuels required for electricity generation and industrial production processes. But perhaps, most importantly, it can improve air quality by deferring or eliminating the need for new generating facilities required to meet the demands of a growing economy.

Can These Benefits Be Quantified?

Yes, many states have undertaken rigorous studies to quantify the net benefits of their statewide investments in demand-side management. Wisconsin, for example, has prepared several reports on the cost-effectiveness of their expenditures on renewable energy generation and energy efficiency. To focus merely on benefits of emissions reductions alone, Wisconsin avoided approximately 11 million pounds of sulfur dioxide (SO₂), over 5.5 million pounds of nitrogen oxides (NO_x), and more than 2.5 billion pounds of carbon dioxide (CO₂) from its energy efficiency programs over a 5-year period.

Would It Be Reasonable to Expect Similar Benefits in Kentucky?

In 2006, Wisconsin generated 65% of its electricity from coal and the U.S. Energy Information Administration reports that its carbon dioxide emissions were 1,726 lbs/MWh. In the same year, Kentucky relied on coal to produce over 92% of its electricity generation and had a carbon dioxide emission rate of 2,079 lbs/MWh. Therefore, it would be reasonable to expect that emission reductions could clearly surpass those of Wisconsin, making the benefits of demand-side management even more attractive.

Why Should State Lawmakers Be Concerned with the Comparative Emissions Rates for Kentucky Power Plants?

Aside from the adverse health effects on Kentucky citizens from the emissions of coal-fired power plants, which translates into lags in economic productivity and unnecessary spending diverted to health care costs, there is an increasing financial risk associated with coal as a fuel for electricity generation. As the public's concern about global warming intensifies, the pressure on the federal government to enact legislation regulating carbon dioxide emissions increases, and this in turn jeopardizes Kentucky's position as a low-cost energy provider. Industry studies abound demonstrating a dynamic change in the cost-effectiveness of resource options if charges on carbon emissions ranged from \$10 to \$50 a metric ton.

What Does Sierra Club Recommend as a Prudent Path for Kentucky?

Sierra Club recommends that the Kentucky legislature enact legislation to initiate a public benefits fund and support it with a non-by-passable volumetric charge on each retail kilowatt-hour sold within the state in order to provide for demand-side management, including load management and energy efficiency for the benefit the residents and businesses of the state. Alternatively, the legislature could establish the minimum and maximum volumetric funding levels within which the Public Service Commission would determine a surcharge rate. The Sierra Club also recommends that this fund be administered by a third-party board comprised of stakeholders to prioritize and allocate funding among various program options and oversee subsequent evaluations to assure program effectiveness. Sierra Club also recommends that programs be

delivered to households and business through the efforts of all utilities, including investor-owned and cooperatives, in order to leverage the relationships and resources already established to serve their customers.

Does This Conclude Your Testimony?

Yes, it does.