FILE

BEFORE THE
OHIO POWER SITING BOARD

In the Matter of the Application of American Municipal Power-Ohio, Inc., for a Certificate of Environmental Compatibility and Public Need for an Electric Generation Station and Related Facilities in Meigs County, Ohio.	))))))	**Case No. 06-1358-EL-BGN**

DIRECT TESTIMONY OF SCOTT KIESEWETTER

1 Q. Please state your name and business address.

A. My name is Scott Kiesewetter. My business address is 2600 Airport Drive, Columbus, Ohio 43219.

2 Q. By whom are you employed, and what is your position?

A. I am employed by American Municipal Power-Ohio, Inc., also known as AMP-Ohio, as Manager of New Plant Engineering.

3 Q. Please describe your duties and responsibilities in that position.

A. As Manager of New Plant Engineering, I am responsible for management and coordination of all aspects of the conceptual planning, permitting, development and implementation of the American Municipal Power Generating Station ("AMPGS") that is the subject of this proceeding.

4 Q. Please describe your educational background and professional experience.

A. I have a Bachelor of Science degree in Electrical Engineering from The Ohio State University with a concentration in Power Engineering. Since my graduation in 1988, I

have held a wide variety of progressively more responsible positions first with Philadelphia Electric (1988-1992) and since 1992 with AMP-Ohio. I have experience in a wide range of electric utility matters including fossil-fuel and nuclear generation. My resume is attached as Exhibit SK-1.

5 Q. Are you familiar with AMP-Ohio's Application, as supplemented, for a Certificate of Environmental Compatibility and Public Need for an Electric Generation Station and Related Facilities in Meigs County, Ohio ("Application")?

A. Yes.

6 Q. What is the purpose of that Application?

A. The purpose of the Application is to receive a certificate of environmental compatibility and public need from the Ohio Power Siting Board for AMPGS. The AMPGS is necessary to satisfy the energy needs of AMP-Ohio's Members in a cost effective, environmentally compatible manner.

7 Q. How was that need determined?

A. Beginning in 2001, AMP-Ohio began a comprehensive and continuing review of its Member's power supply needs and has determined that the organization's Members require approximately 2000 MW of additional base load resources, as noted by Witness Clark.

8 Q. What is meant by base load resources?

A. Base load resources are those that are available 24 hours a day, 365 days a year to serve the minimum demands of AMP-Ohio's Members' customers.

9 Q. Please describe the current power supply situation for AMP-Ohio's Members.

A. Let me first refer you to Exhibit SK-2, a sample load duration curve. That Exhibit shows how electric load is typically served using base load, intermediate and peaking electric generation resources.

Exhibit SK-3 shows today's sources for AMP-Ohio's Members' Base Load Power. This Exhibit shows that AMP-Ohio's Members are significantly over-exposed to a dysfunctional wholesale market for over 60% of their Base Load needs. AMP-Ohio's RH Gorsuch Station ("RHGS"), a 1950's vintage 213 MW coal facility accounts for about 12%, and, for the most part, older, smaller, less efficient Member-owned municipal coal plants account for another 17%. Hydroelectric and landfill gas generation account for the remaining 9%.

10 Q. What is AMP-Ohio's Members' current total peak load?

A. Approximately 3,200 MW.

11 Q. What are AMP-Ohio's plans for RHGS?

A. The RHGS capacity is included in the AMPGS, and AMP-Ohio plans to retire or repower that facility with advanced technology, more or less contemporaneously with the in service date of AMPGS.

12 Q. What about the Member owned municipal coal plants?

A. As I indicated, most are older, less efficient plants and some of those can be expected to be retired in the not too distant future, although AMP-Ohio's Members control those decisions. AMP-Ohio Member City of St. Marys has recently announced the retirement of its primary coal fired unit rather than undertake expensive repairs, at least partially in reliance on the expectation of the availability of AMPGS.

13 Q. What about Intermediate and Peaking needs?

A. Intermediate power, sometimes referred to as "5 x 16", for the 5 weekdays, 16 hour peak times, is currently price-driven by the natural gas markets. AMP-Ohio Members are on the Market for 95% of that power as shown on Exhibit SK-4. AMP-Ohio is actively pursuing natural gas combined cycle generation for this intermediate generation need as well.

As shown on Exhibit SK-5, AMP-Ohio and its Members are relatively well off for natural gas and diesel fueled peaking generation, being only on the market for about 20% of our Members' needs.

14 Q. What is AMP-Ohio's power supply strategy?

A. To greatly decrease reliance on the wholesale market; to diversify generation resources, including fuel mix, location and technologies; to control costs over the long term; to have a strong environmental commitment; to increase conservation programs to stabilize load growth; to be a regional leader in renewable energy development; and to provide economic, reliable, environmentally responsible power supply options to our Members for the benefit of their customers.

Exhibit SK-6 and SK-7 show, respectively, a timeline of AMP-Ohio's current plan to implement that strategy and our expected base load mix after completion of AMPGS.

15 Q. Please briefly describe AMP-Ohio's conservation and renewable efforts.

A. AMP-Ohio and its Members have pursued a number of conservation efforts over the years, including: providing interruptible arrangements and other peak shaving arrangements; energy audits for Members' customers; Member system improvements and voltage upgrades to reduce losses; direct load control programs, such as in Bowling

Green, Montpelier and Edgerton; and, distribution of thousands of subsidized or free compact fluorescent light bulbs, among other efforts.

AMP-Ohio is about to announce a significantly more comprehensive conservation program in conjunction with a leading national organization as well.

With regard to renewables, AMP-Ohio and its Members are aggressively pursuing additional wind, hydroelectric, landfill gas generation along with municipal solid waste, and certain co-generation opportunities.

16 Q. Can conservation measures and renewables or any combination of those satisfy the base load requirements of AMP-Ohio's Members that would be met by AMPGS?

A. No, and any reasonable analysis of AMP-Ohio and its Members current power supply and power supply options could not come to any other conclusion.

17 Q. Why?

A. AMP-Ohio has experience with wind generation, having built and operated Ohio's only commercial wind generation project. Further, AMP-Ohio and its Members are pursuing additional wind generation aggressively. With cost, reliability and capacity factor limitations (about 25% in Ohio), wind can only be a supplemental resource at least in the near future.

As for hydroelectric, AMP-Ohio and its Members are pursuing hydroelectric generation as aggressively as possible. AMP-Ohio and its Members are currently developing the Cannelton (82 MW), Smithland (74 MW) and Willow Island (35 MW) Hydroelectric Projects on the Ohio River at existing locks and dams. AMP-Ohio and its Members, Wadsworth and Hamilton, Ohio, are pursuing, respectively, licenses for the R.C. Byrd (48 MW) and Meldahl (105 MW) at the Federal Energy Regulatory Commission. Those projects are also located on the Ohio River at existing locks and dams, and AMP-Ohio is

cautiously optimistic those licenses will be granted. This totals over 340 MW of hydroelectric development and represents a significant investment by AMP-Ohio and its Members in that renewable resource.

AMP-Ohio and its Members are exploring additional regional hydroelectric generation as well, to add to our current hydroelectric portfolio. Given the limited regional potential for hydroelectric generation, AMP-Ohio's and its Members efforts in this regard really could not be greater.

AMP-Ohio and its Members are also pursuing additional landfill gas, municipal solid waste and other cogeneration options in our efforts to implement the power strategy mentioned earlier.

Despite all the above, AMPGS is still clearly required to fill AMP-Ohio's Members' needs.

18 Q. Are you familiar with the contents of the Application?

A. Yes.

19 Q. Did you participate in completion of the Application?

A. Yes, Witness Meyer and I are the AMP-Ohio personnel primarily responsible for its contents and it was prepared under our direction and supervision.

20 Q. To the best of your knowledge and belief, is the information in the Application true?

A. Yes.

21 Q. Please provide a brief history of how AMP-Ohio determined the location, size and technology for AMPGS.

A. In 2003, AMP-Ohio, with the assistance of the nationally recognized engineering firm of Sargent & Lundy, undertook a comprehensive, "self build" evaluation to meet AMP-Ohio's Members' demonstrated base load needs. That study included evaluation of a wide range of possible base load electric generation options, including, natural gas combined cycle ("NGCC"), circulating fluidized bed ("CFB"), pulverized coal ("PC") and integrated gasification combined cycle ("IGCC"). Over 30 locations in 6 states were studied as a part of this evaluation. With the assistance of another nationally recognized engineering firm, Black & Veatch, we compared self build options to other projects that may have been available from third parties. Also, as a part of its due diligence, AMP-Ohio and its project partners Michigan South Central Power Agency and Blue Ridge Power Agency respective staff, consultants and/or Board members visited FirstEnergy's Burger Plant to review the Powerspan demonstration, the Polk County IGCC facility and JEA's Northside CFB generation plant.

Numerous criteria including risks, size, cost, reliability, environmental considerations, operating considerations were evaluated in the size and technology determinations. Among other factors, proximity to transmission access, water, fuel delivery and site availability helped determine location.

Ultimately AMP-Ohio determined that a PC plant of approximately 1000 MW (consisting of 2-500 MW units) sited in Meigs County as further described in the Application was the best fit for AMP-Ohio's flagship generation facility to meet its participating Members' needs.

22 Q. The Application does not specify the use of "subcritical" or "supercritical" technology. What is proposed?

A. The Application did not use those terms. Our conceptual plans called for 1050°/1050° F and 2500 psig steam temperature and pressure. While these are slightly above the typical temperature and pressure normally considered "subcritical" of 1000°/1000° F and 2400 psig, therefore supporting higher efficiency, they are not in the range of "supercritical". At the time we began planning for AMPGS we were aware that at less than 500 MW per unit, getting multiple sources of "supercritical" bids might be problematic. Additionally, since AMP-Ohio may not ultimately have 1000 MW of Member commitments, some downsizing was a possibility. Accordingly, our plans at that point were for "subcritical" units.

We have now issued our request for proposals ("RFP") for EPC (Engineer, Procure and Construct) contractors and indications are at least two will propose supercritical. Another may propose subcritical but with the expectation of the possibility of supercritical.

Accordingly, we believe that we very well could be constructing "supercritical units" and ask the Board to allow us that latitude.

23 Q. Are there differences in subcritical versus supercritical?

A. Witness Clark will discuss that in further detail, but the design and functionality are basically the same, but with higher steam temperatures and pressures. While the capital costs of supercritical units are higher on a per MW basis, operating efficiencies are better and would lead to lower costs per MWh over time. Assuming it is cost effective, that option should be approved by the Board.

24 Q. Please discuss AMP-Ohio's decision to utilize "Powerspan" pollution control technology.

A. We are proud of our decision to utilize Powerspan. The Powerspan ammonia based system, while newer than traditional limestone scrubbing, is a technology we have confidence in. It also has been shown to provide improved mercury and particulate control, produces a fertilizer by-product, which will be sold rather than landfilled like the by-product of limestone scrubbing. Importantly, Powerspan also provides the potential for adding cost effective ($20 per ton) carbon capture/compression capability. Witnesses Couppis and Meyer will discuss this technology in greater detail.

25 Q. Will AMPGS be consistent with regional plans for the electric system and improve electric system economy and reliability.

A. Yes, clearly. The PJM interconnection study and process assures this from the transmissions side. From a generation perspective, as discussed by Witness Clark, the coal fleet in this region and in the U.S. is aging and, very little base load facilities have been added in the last 20 years. Our Members have loads to serve and replacing RHGS and smaller member owned base load capacity and market purchases with a state of the art, efficient, environmentally better controlled generation such as AMPGS will lower costs and reduce environmental impacts as well as increasing reliability.

26 Q. Based on your experience, education, and knowledge of the Application, and in your opinion, will the AMPGS serve the public interest, convenience, and necessity?

A. Yes.

27 Q. Based on your experience, education, and knowledge of the Application, and in your opinion, does the AMPGS represent the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations?

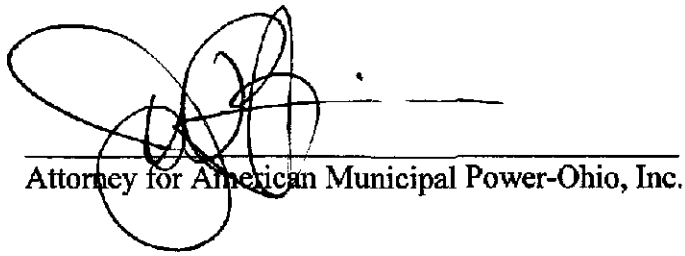
A. Yes.

28 Q. Does this conclude your direct testimony?

A. Yes.

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing American Municipal Power-Ohio, Inc.'s Direct Testimony of Scott Kiesewetter, for Case No. 06-1358-EL-BGN was served upon the following parties of record and proposed intervenors via electronic mail and/or via postage prepaid U.S. Mail on December 3, 2007:



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EDUCATION

The Ohio State University, 1988
Bachelor of Science Degree Electrical Engineering with concentration in Power Engineering

PROFESSIONAL EXPERIENCE

1996 - Present ***American Municipal Power-Ohio, Inc. – Corporate Office***

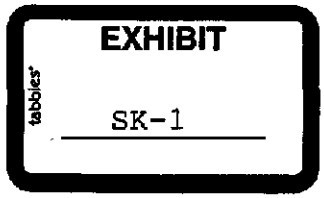
Manager of New Plant Engineering (12/05 to Present)
Responsible for project management and coordination of all aspects concerning the conceptual planning, permitting, development and implementation of the American Municipal Power Generating Station new base load generation project. Duties includes: project coordination, monitoring and reporting for AMP-Ohio Management and Board of Trustees; coordination internal departments; contract management for project consultants and subcontracted technical support firms.

Manager of Operations Engineering (9/02 to 12/05)
Manager of Energy Accounting & Operations Engineering (10/01 to 9/02)
Responsibilities included: project management responsibilities for the New Base Load Generation Development Study; project management of engineering projects supporting the Energy Control Center; supervision of Transmission Affairs staff responsible for monitoring developments in NERC, ECAR, RTOs & FERC, and ensuring that AMP-Ohio is represented in meetings in areas such as NERC, ECAR, and RTOs; provide technical consultation support on major projects including support of AMP-Ohio's procurement of three simple cycle natural gas turbine generating facilities and prepared initial construction and operations budgets for the AMP-Ohio wind turbine project; assist the Vice President of Energy Operations with department budget development and management; and supervision of the operations department Energy Accounting staff.

Manager of Electric Systems Operations (5/00 to 10/01)
Responsibilities included: first line supervisory responsibilities for the 24/7 Energy Control Center Operations staff consisting of real-time Power Dispatchers and short term load forecasting, marketing, and scheduling. Additional responsibilities included: supervision of SCADA systems technical support staff; coordination and oversight of operations for the AMP-Ohio Load Management System including maintenance and budgeting; and assist the Vice President of Energy Operations with department budget development and management.

Manager of Distributed Generation (6/99 to 5/00)
Responsibilities included: management of all aspects associated with the JV1, JV2, and JV5 diesel generation units including planning and coordination of maintenance, troubleshooting and maintenance of auxiliary systems equipment, and budget development and management; primary U.S.EPA "designated representative" for all JV1, JV2, JV5 and AMP-Ohio diesel engine and combustion turbine generation equipment.

Transmission & Distribution Designer (2/97 to 6/99)
Responsibilities included: perform engineering design of overhead and underground electrical distribution systems in support of AMP-Ohio member communities; management of all aspects associated with the JV1, JV3, and JV5 diesel generation units including planning and coordination of maintenance, troubleshooting and maintenance of auxiliary systems equipment, and budget development and management; project management and construction management responsibility for the installation of 25 diesel distributed generation units as part of the initial phase of JV2 generation project.



1992 - 1996 *American Municipal Power-Ohio, Inc. — R.H. Gorsuch Generating Station*

Performance Superintendent (10/94 to 8/96)
Station Engineer (6/93 to 10/94)
Responsibilities included: direct management of technical engineering staff, department budget development and control, operational responsibility for the Water Treatment facility and personnel, providing technical support for operations and maintenance departments, monitoring plant heat rate and efficiency and recommending improvements, coordination of plant improvement projects, and assuring compliance with environmental regulations. Major project accomplishments included: successful replacement and upgrade of the station 138kV interconnect substation, installation of a plant fire alarm and evacuation system, installation and operation of the Continuous Emissions Monitoring (CEM) system required by EPA Clean Air Act regulations.

Electrical Facilities Engineer (1/92 to 6/93)
Responsibilities included: assisting the Station Engineer on all aspects of plant engineering, providing technical support for the operations and maintenance departments, assisting in the development of preventative maintenance programs, preparing minor plant engineering designs, and acting as Project Manager and technical reviewer for engineering projects. Major project accomplishments included installation of additional generator protective relaying equipment to increase the level of generator and turbine protection, and installation of a replacement chimney beacon obstruction lighting system.

1988 - 1992 *Philadelphia Electric Company*

System Engineer — Peach Bottom Atomic Power Station (6/91 to 1/92)
Responsibilities involved coordinating system maintenance activities, troubleshooting system problems, ensuring proper operation of equipment, and evaluating the impact of proposed modifications to the 480 volt, 120 volt, and 125 volt D.C. electrical distribution systems with in the nuclear generating station. Involved coordination with various internal departments including operations, maintenance, engineering, and outage planning groups.

Electrical Engineer — Corporate Office, Power Engineering Branch (7/89 to 6/91)
Responsibilities involved planning modifications to existing in plant electrical distribution systems, and providing technical support in problem solving operational and maintenance concerns for the four nuclear generating stations. Modification work consisted of estimating project requirements, developing equipment and installation specifications, and selecting electrical equipment. Technical support services included evaluating short circuit and over-current protection of A.C. and D.C. electrical systems.

Electrical Engineer — Corporate Office, Instrumentation and Controls Branch (5/88 to 7/89)
Responsibilities involved planning modifications to instrumentation and control systems for four nuclear generating stations. Work consisted of reviewing modification proposals, estimating project requirements, developing equipment and installation specifications, and selecting instrumentation and control equipment.

Sample Load Duration Curve

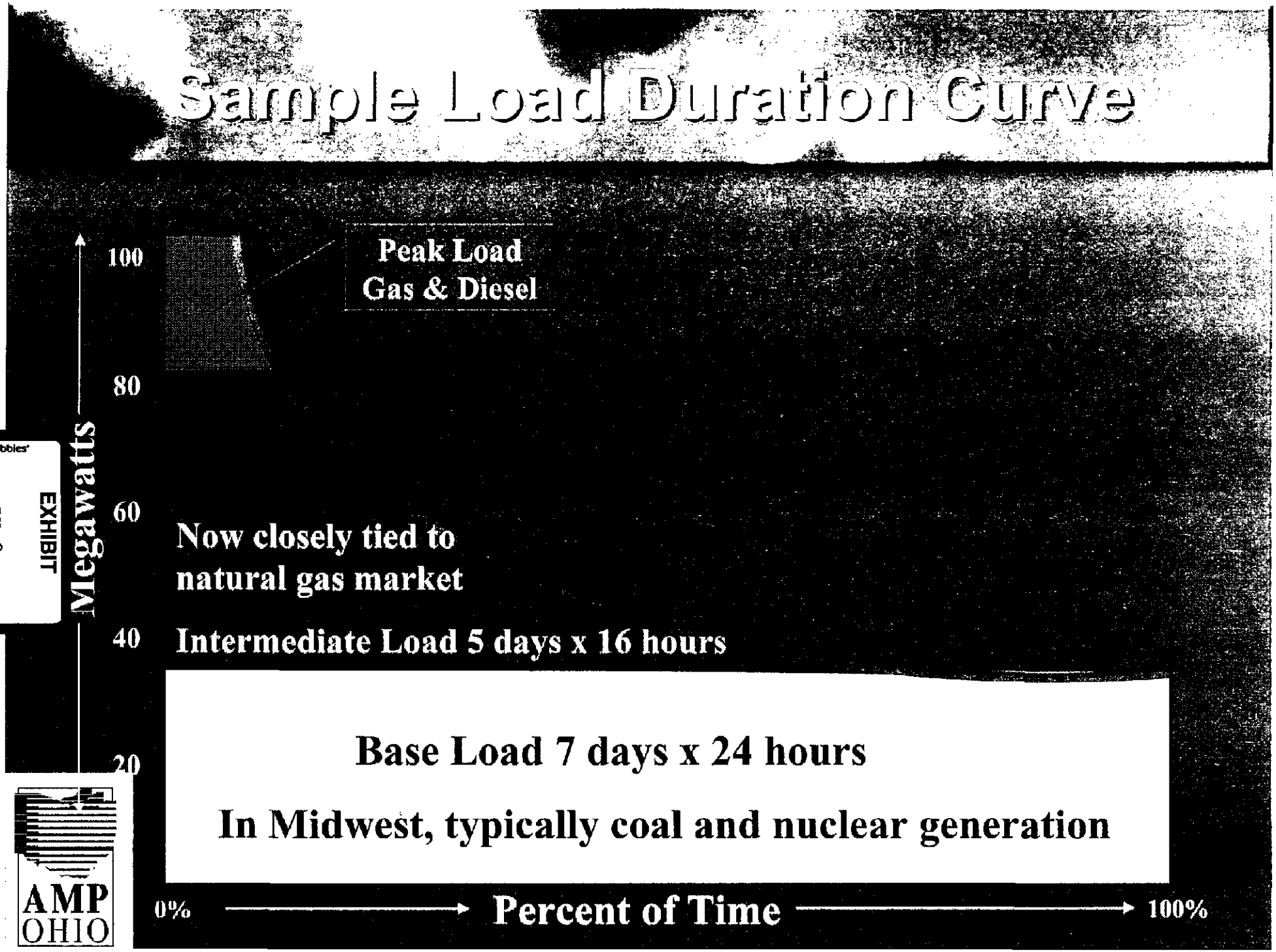


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EXHIBIT

SK-2

AMP OHIO

Where We Are Today – Base Load

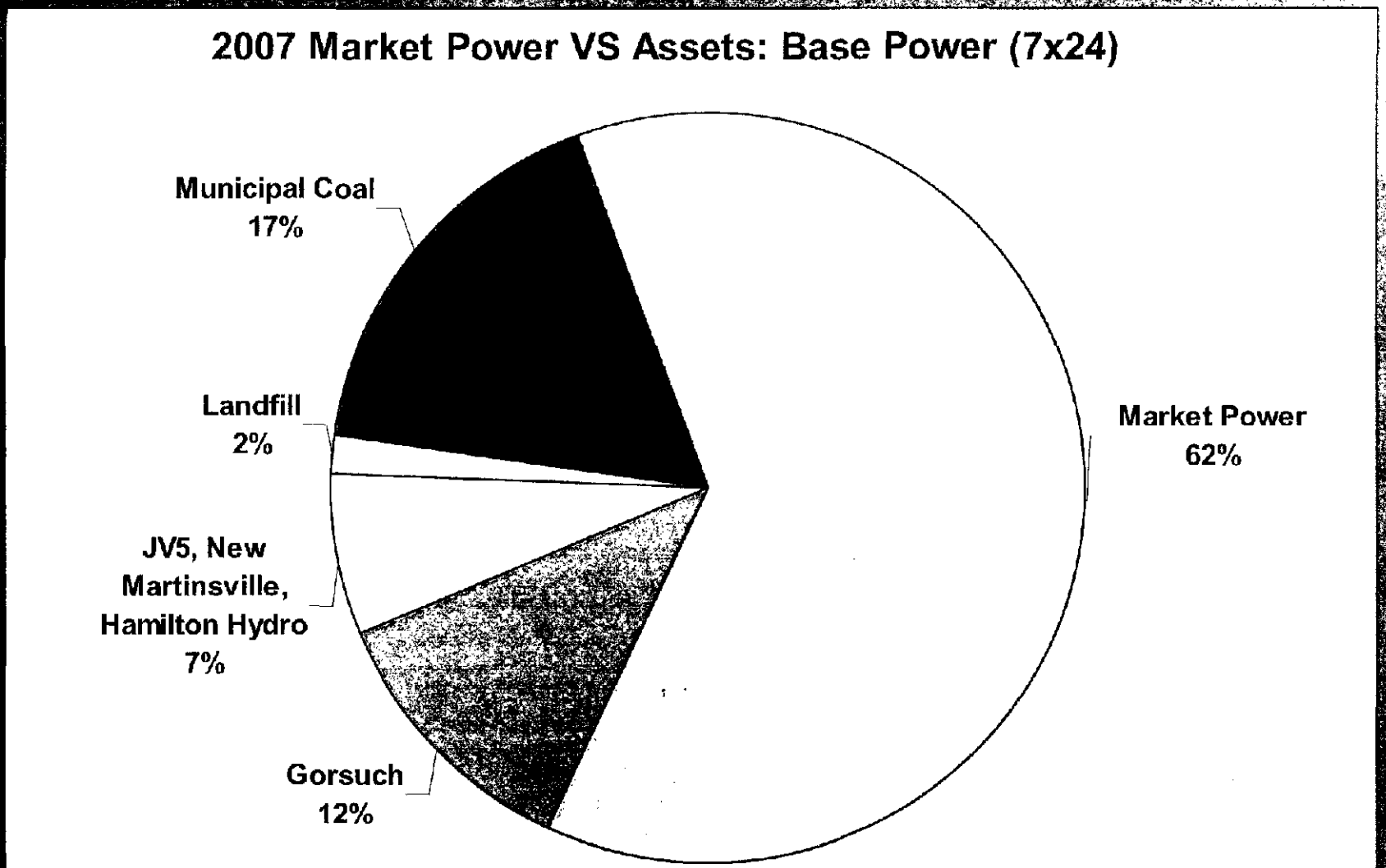

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EXHIBIT
SK-3

AMP
OHIO

Where We Are Today - Intermediate

2007 Market Power VS Assets: Intermediate Power (5x16)

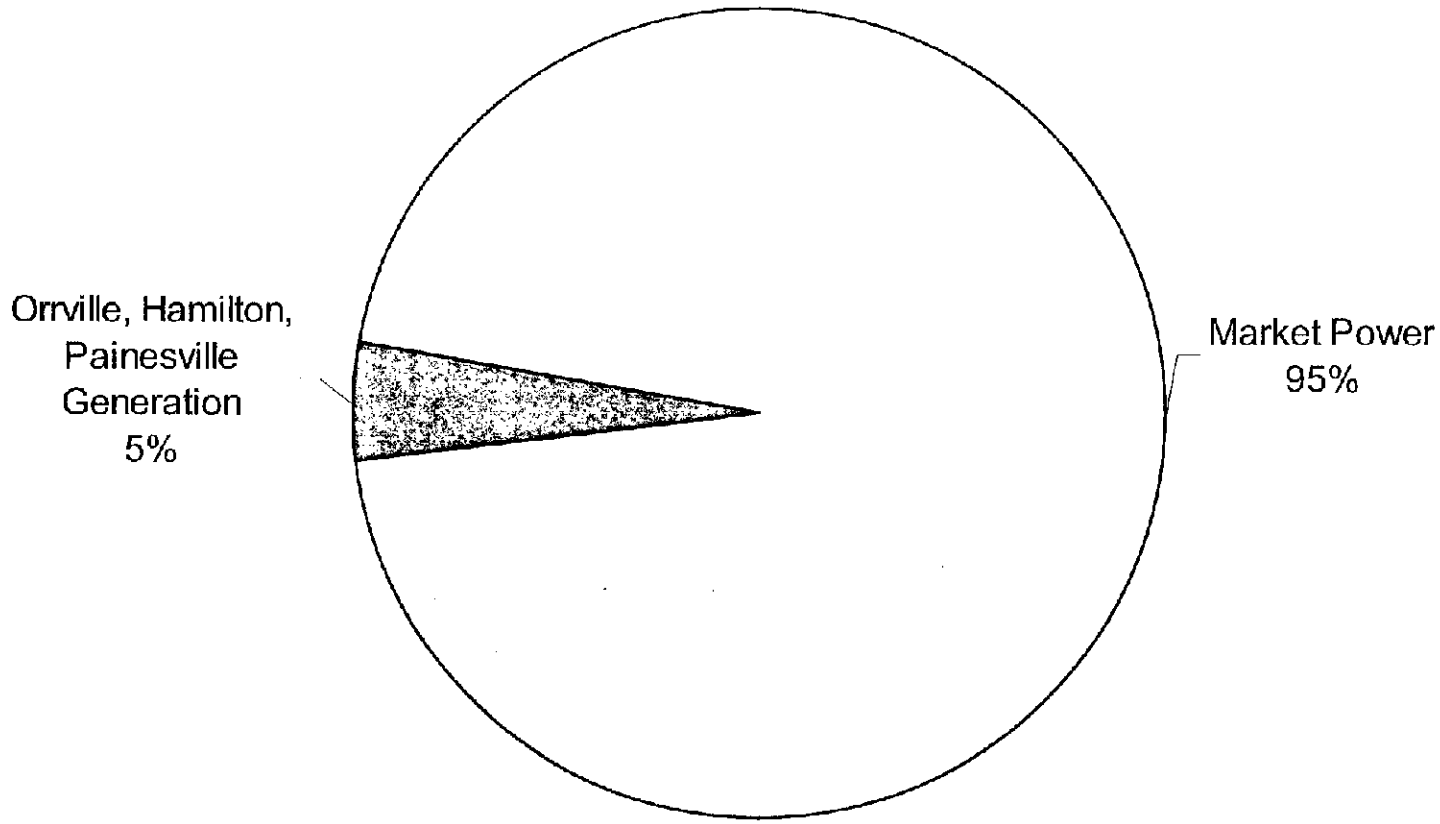

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EXHIBIT
SK-4

AMP OHIO

Where We Are Today - Peaking

2007 Market Power VS Assets: Peaking

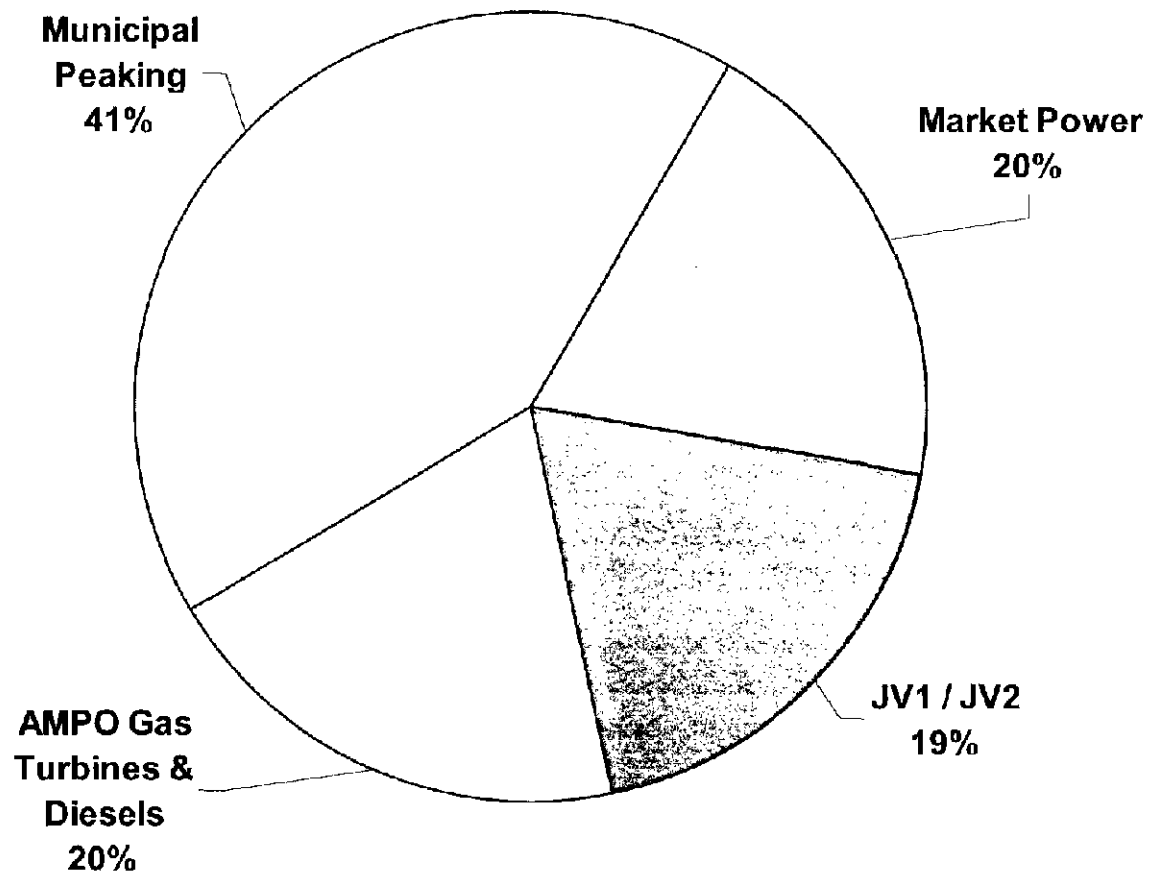

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EXHIBIT

SK-5

AMP OHIO

AMP-Ohio Power Supply Strategy

Balanced Portfolio Timeline

300 MW Prairie State Resource

Up to 300 MW New Hydro Resources

Shut Down Existing 213 MW Coal Resource

7.2 MW Wind

Up to 100 MW New Wind and Landfill Gas Resources

1000 MW AMPGS Coal Resource

2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

On-going conservation efforts

AMP OHIO

2013 Market Power vs. Assets AMP-Ohio Membership

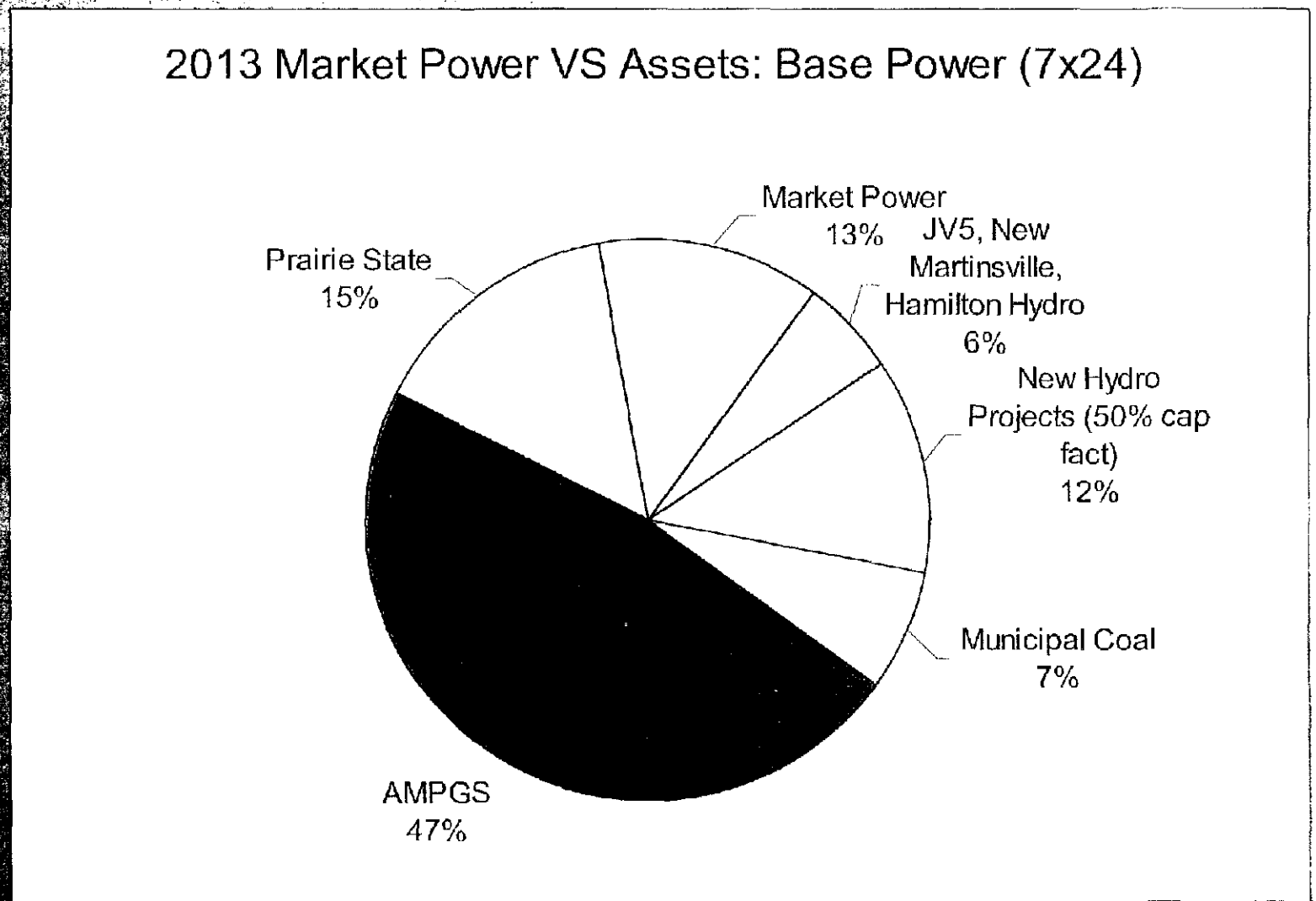

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EXHIBIT
SK-7

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