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BEFORE THE
OHIO POWER SITING BOARD

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In the Matter of 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)

PUCO

Case No. 06-1358-EL-BGN

APPLICANT AMERICAN MUNICIPAL POWER-OHIO, INC.'S
POST HEARING BRIEF

American Municipal Power-Ohio, Inc. ("AMP-Ohio") submits this Post Hearing Brief pursuant to a January 16, 2008 Entry of the Administrative Law Judges ("ALJ"). For the reasons set forth below, AMP-Ohio respectfully requests that the Ohio Power Siting Board ("OPSB" or "Board") issue its Opinion, Order and Certificate determining that AMP-Ohio has met all the requirements of Section 4906.10, Revised Code, and, as such, that a Certificate of Environmental Compatibility and Public Need ("Certificate") for the construction, operation and maintenance of the proposed Electric Generation Station and Related Facilities in Meigs County, Ohio, known as American Municipal Power Generating Station ("AMPGS") will be issued.

PROCEDURAL BACKGROUND

On May 4, 2007, AMP-Ohio, on behalf of its 120 municipal members, filed a Certificate application ("Certificate Application" or "Application") with the OPSB for the construction of AMPGS - a 960 megawatt net electric generation facility proposed to be sited in Letart Township, Meigs County, Ohio ("Plant Site"). By notice filed on December 5, 2006, AMP-Ohio notified OPSB that its Certificate Application would only include fully developed information for the Plant Site. After receipt of the Certificate Application, OPSB assigned the matter to its internal experts ("OPSB Staff") for investigation and consideration and in order to issue a report as required by Section 4906.07(C), Revised Code, regarding the pending Certificate Application.

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On June 29, 2007, pursuant to OAC 4906-1-14(C), The Chairman of the OPSB notified AMP-Ohio that the Certificate Application had been certified complete. AMP-Ohio was directed by OPSB to serve copies of the Certificate Application upon local government officials in accordance with OAC 4906-5-05 and R.C. 4906. AMP-Ohio filed the proof of service with OPSB on July 20, 2007. See, OPSB Docket for AMPGS.

By entry dated August 2, 2007, the non-adjudicatory and the adjudicatory hearings were scheduled for November 1, 2007 and November 8, 2007 respectively. On November 1, 2007, a non-adjudicatory hearing was held at Meigs High School in Pomeroy, Ohio. Pursuant to OAC 4906-5-08, AMP-Ohio caused the notice of the hearings to be published in a newspaper of general circulation in Meigs County and filed proof of the publication of the notice with OPSB on September 19, 2007. See, OPSB Docket for AMPGS.

On October 16, 2007, the OPSB Staff filed its Staff Report of Investigation ("Staff Report") finding that AMPGS met the statutory criteria but that the Certificate should be granted with the Recommended Conditions stated in the Report. See, e.g., Staff Exhibit 1 at pp. 40, 53 and 56.¹ On October 25, 2007, the Natural Resources Defense Counsel ("NRDC"), the Sierra Club and the Ohio Environmental Council ("OEC") (collectively "Activist Groups") filed a motion to intervene into AMP-Ohio's pending Certificate Application. On October 29, 2007, Elisa Young ("Young") also filed a motion to intervene. (collectively Activist Groups and Young are "Intervenors"). AMP-Ohio contended such motions were untimely filed as required by Section 4906.08, Revised Code and for that reason, and others, the motions should be denied. By Entry of December 4, 2007, the ALJ granted the Activist Groups' and Young's motions to

¹ The Staff later recommended an amended, more restrictive, set of conditions, set forth in Staff Exhibit 2, in which AMP-Ohio concurred (Tr. II, pp. 74-75).

intervene, thus overruling AMP-Ohio's position that the Intervenor's motions should not be granted.

The adjudicatory hearing scheduled for November 8, 2007 was continued to December 10, 2007. AMP-Ohio requested the OPSB Staff commence discussions regarding the Staff Report. OPSB Staff requested that the Activist Groups and Young participate in such discussions with the OPSB Staff and AMP-Ohio regarding the Staff Report and the OPSB Staff's Recommended Conditions of Certificate. Tr. II, pp. 110-111 (Mr. Wright: "Again, for the record, your Honor, comments have been invited from all."). Neither the Activist Groups nor Young elected to participate in discussions concerning the Staff Report. To date, neither the Activist Groups nor Young have filed any comments or objections to the Staff Report or the amended Recommended Conditions of Certificate. Staff Exhibits 1 and 2.

On December 3, 2007, AMP-Ohio timely filed the direct testimonies of expert witnesses Dr. Evis Couppis, Randy Meyer, Scott Kiesewetter, and Ivan Clark. This pre-filed direct testimony was presented by AMP-Ohio at the hearing and moved into evidence. AMP-Ohio Exhibits 1, 2, 3, and 4 respectively. The Activist Groups filed direct testimony of witnesses Richard Furman and David Schlissel, and Ms. Young filed her own additional direct testimony, untimely served, on December 4, 2007. On December 28, 2007, per entry of the OPSB, AMP-Ohio filed confidential and non-confidential rebuttal testimony of witnesses Ivan Clark, Larry Marquis (non-confidential only) and Phillip Meier, which AMP-Ohio moved into evidence at the hearing. AMP-Ohio Exhibits 16, 16-C, 17, 18, and 18-C respectively.

The hearing commenced on December 11, 2007 and concluded on January 4, 2008.

PROPOSED FACILITY

In the Certificate Application before the Board, AMP-Ohio requests a Certificate to construct the AMPGS project. Specifically, the AMPGS project is a pulverized coal-fired, base load 960 MW nominal electric generating facility, consisting of two 480 MW nominal boilers and associated turbine generator sets as well as other associated activities. AMPGS will use the pulverized coal boilers to produce steam, which will be used to generate electric energy. The electric energy generated by AMPGS will be stepped-up to 345,000 volts by the main power transformers and then sent to the on-site switchyard for delivery to the transmission grid and the ultimate consumers. AMPGS Certificate Application, Project Description Section.

AMP-Ohio determined to build AMPGS as a pulverized coal ("PC") base load facility only after first undertaking a comprehensive, multi-year evaluation of a wide range of possible base load electric generation options, including, natural gas combined cycle ("NGCC"), circulated fluidized bed ("CFB"), PC and integrated gasification combined cycle ("IGCC"). *See, e.g.,* AMPGS Certificate Application, Project Summary Section; AMP-Ohio Exhibit 3, Kiesewetter Q/A 21; AMP-Ohio Exhibit 1, Couppis Q/A 12; and, AMP-Ohio Exhibit 16, Q/A 12.

During this process, AMP-Ohio, along with its nationally recognized power consultant Sargent & Lundy, examined numerous criteria including risk, size, cost/economics, reliability, environmental considerations, nature of the various alternatives, operating considerations, state of available technology determinations, transmission access, water, fuel delivery and site availability. *See, e.g.,* AMPGS Certificate Application, Project Summary Section; AMP-Ohio Exhibit 3, Kiesewetter Q/A 21. After a careful and thorough evaluation of all potential base load

options, AMP-Ohio prudently determined that a PC plant of approximately 1,000 MW sited in Meigs County was the only and best fit for AMP-Ohio's flagship generation facility in order to meet its members' needs. AMPGS Certificate Application, Project Summary Section; AMP-Ohio Exhibit 3, Kiesewetter Q/A 21. Indeed, despite the Activist Groups' attempt to portray AMP-Ohio's due diligence as somehow lacking, the record reflects a much different story. As Mr. Clark testified:

Detailed individual power supply planning and alternative evaluations were conducted for 119 AMP-Ohio Members as detailed in, for example, the February 2007 Cleveland Power Supply Plan (AMP-Ohio Exhibit 15). This included evaluation of generating resource options, including generic base load coal, natural gas-fired combined cycle generation, natural gas-fired peaking generation, the AMPGS Project, the Prairie State Energy Campus Project, AMP-Ohio hydroelectric plants along the Ohio River, and future wind generation. In preparing the power supply analysis for each Member, R. W. Beck utilized its Stochastic Econometric Regional Forecasting model, which provides projections of fuel and power prices, utility loads and corresponding power costs for multiple portfolios of power supply resources. As described in the analysis the majority of the power supply needs of the Members are currently being supplied by the aging Gorsuch coal-fired power plant which is scheduled to be retired or repowered more or less contemporaneously with the in service date of AMPGS, and from purchased power contracts many of which expire by 2012. The resulting need for future generating capacity over the period 2013 through 2027 is over 3000 MW. In developing the power supply plans for the AMP-Ohio Members both costs and risks were considered. As a result, the power supply plans include a diverse mix of resources which mitigate risks by avoiding reliance on any one type of fuel and/or technology. Additional Member beneficial use analyses were conducted which reflected updated AMPGS costs as part of the Initial Feasibility Study completed for the Project in June 2007. The updated bus bar analysis results discussed above further support the conclusions of the previous studies and investigations.

Finally, I would be remiss if I did not point out that in my opinion, the amount of "due diligence" AMP-Ohio, its Members and project partners, Blue Ridge Power Agency and Michigan South Central Power Agency, have undertaken with regard to the prudence of the AMPGS project is extraordinary. In addition to significant internal review and due diligence by AMP-Ohio, its Members and project partners, the number of recognized electric power consulting and engineering firms that have been involved in review of the project for AMP-Ohio, its Members and its partners is truly impressive. In addition to R.W. Beck, the following firms have been involved in the AMPGS project.

- Sargent & Lundy
- Black & Veatch

- Burns & Roe
- J.S. Sawvel & Associates
- Courtney & Associates
- GDS Associates
- Orbital Technical Solutions

To state or imply that the AMPGS project has not been well planned, that alternatives have not been appropriately evaluated, or that costs are not reasonably or appropriately estimated is simply not true.

AMP-Ohio Exhibit 16, Clark Rebuttal Q/A 17.

AMPGS's air emissions will be addressed through a host of air emission pollution control equipment, along with efficient plant operating modes. Specifically, AMPGS will be designed to include the use of low-NO_x burners, over-fire air, a selective catalytic reduction or "SCR" unit for NO_x control, a fabric filter bag house to capture and reduce fly ash particulate emissions, the Powerspan ammonia-based flue gas desulfurization or "FGD" technology to reduce SO₂ emissions (and potentially CO₂ emissions) and a wet electrostatic precipitator or "ESP" to capture and reduce condensable emissions and fine particulates. AMPGS Certificate Application, Environmental Data Section; AMP-Ohio Exhibit 2, Meyer Q/A 11.

The Powerspan ammonia-based system, while newer than traditional limestone scrubbing, is a technology AMP-Ohio is confident will operate in a manner which allows AMPGS to achieve SO₂ emissions reductions comparable to traditional limestone scrubbers. AMP-Ohio Exhibit 3, Kieseewetter Q/A 24; AMP-Ohio Exhibit 1, Couppis Q/A 22. Powerspan has also been shown to provide improved mercury and particulate control, and produces a fertilizer by-product, which will be sold rather than landfilled like the by-product of limestone scrubbing. AMP-Ohio Exhibit 3, Kieseewetter Q/A 24. Importantly, Powerspan also provides for the ability to add cost effective (estimated at approximately \$20.00 per ton) CO₂ capture and compression capability. See, e.g., AMP-Ohio Exhibit 1, Couppis Q/A 15 and AMP-Ohio Exhibit

6 (National Energy Technology Laboratory Study) at 2 et seq. and AMP-Ohio Exhibit 3, Kiesewetter, Q/A 24. While CO₂ is not currently a substance subject to regulation in Ohio, AMP-Ohio has planned for future CO₂ regulation. Certificate Application, Project Description Section and Environmental Data Section; Tr. II, p.117. Although the Activists Groups alleged that AMP-Ohio has not committed to Powerspan, that assertion is simply not true. The OPSB Staff's Recommended Conditions of Certificate require AMP-Ohio to utilize Powerspan for SO₂ scrubbing as a condition of the Certificate. Staff Exhibit 2, Condition (9). AMP-Ohio has agreed to those conditions (Tr. II, pp. 74-75).

The Plant Site consists of approximately 1,600 acres located in Letart Township. AMPGS will incorporate water intake technology that consists of two offshore cylindrical wedge wire screens to use water from the Ohio River. AMPGS Certificate Application, Project Description Section, p. 2. These screens will be at a depth of 15 feet below normal pool depth, and approximately 80 feet out from the riverbank. Id. A pump house with two circulating water pumps will transport water to AMPGS's steam condenser cooling and other processes. Id. AMPGS will utilize a closed-cycle cooling tower system with a mechanical draft cooling cell located on the west side of the AMPGS site. Id. This comprehensive water system incorporates maximum feasible water conservation practices, considering the available technology and the nature and economics of the various options. AMP-Ohio Exhibit 2, Meyer Q/A 34, Staff Report p. 56.

The AMPGS site will include an approximately 135-acre landfill for solid waste disposal, to be located east of the boiler house. AMPGS Certificate Application, Project Description Section, p. 2. The primary solid wastes produced by AMPGS will be fly ash and bottom ash. Id. Since, as noted above, AMP-Ohio will utilize Powerspan scrubbing technology, AMPGS will

generate a fertilizer co-product instead of gypsum waste. See, e.g. AMPGS Certificate Application, Project Description Section, p.3 and AMP-Ohio Exhibit 2, Meyer Q/A 12. This fertilizer co-product will significantly reduce the amount of waste that would be otherwise landfilled. Id.

In order to assure that impacts to wetlands and streams are minimized to the maximum extent possible, the OPSB Staff's Recommended Conditions of Certificate require AMP-Ohio to avoid landfill cells 2A and 2B and a portion of 3A without additional prior approval of the OPSB. Staff Exhibit 2, Condition (15); Tr. II, pp. 109-111.

CERTIFICATE CRITERIA

Pursuant to Section 4906.10, Revised Code, the Board shall grant a certificate for the construction, operation and maintenance of AMPGS as proposed by AMP-Ohio or as modified by the Board, if the Board finds and determines:

- (1) A basis of the need for the facility if the facility is an electric transmission line or gas or natural gas transmission line;
- (2) The nature of the probable environmental impact;
- (3) That AMPGS represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives and other pertinent considerations;
- (4) That AMPGS is consistent with regional plans for expansion of the electric power grid of the electric systems serving Ohio and interconnected utility systems and that the facility will serve the interests of electric system economy and reliability;

- (5) That AMPGS will comply with Chapters 3704 (air), 3734 (solid waste), 6111 (water) of the Revised Code and all rules and standards adopted under those chapter and under sections 1501.33, 1501.34 and 4561.32 of the Revised Code;
- (6) That AMPGS will serve the public interest, convenience and necessity;
- (7) AMPGS's impact on the viability as agricultural land of any land in an existing agricultural district established under Chapter 929 of the Revised Code that is located within the Plant Site;
- (8) That AMPGS incorporates maximum feasible water conservation practices as determined by OPSB, considering available technology and the nature and economics of the various alternatives.

As set forth below, the Board's jurisdiction to apply Section 4906.10, Revised Code, to the Ohio municipalities that make up AMP-Ohio is limited by Section 4 of Article XVIII of the Ohio Constitution. Nonetheless, AMP-Ohio has filed its Application and met each statutory requirement of Section 4906.10, Revised Code, and the Board's Rules.

LAW AND ARGUMENT

The Board shall issue a Certificate if an applicant demonstrates, and the Board likewise finds, that the criteria for issuance set forth in Section 4906.10, Revised Code, have been met. State ex. rel. Ohio Edison Company v. Parrott (1995), 654 N.E.2d 106. In the instant matter, AMP-Ohio has demonstrated, by its Certificate Application, coupled with supporting testimony and evidence, that AMP-Ohio has met all the criteria set forth in Section 4906.10, Revised Code. The Staff concurs. Staff Exhibit 1. In addition, AMP-Ohio, as an organization owned and operated primarily by Ohio municipalities should be afforded great latitude because of the authority granted those municipalities by the Ohio Constitution. As such, the Board should limit

its evaluation of AMP-Ohio's Certificate Application to only those factors specifically enumerated by the Ohio Supreme Court.

I. The Board Should Limit its Decision to Only the Criteria Enumerated by the Ohio Supreme Court.

Section 4 of Article XVIII of the Ohio Constitution states, in pertinent part, that:

Any municipality may acquire, construct, own, lease and operate within or without its corporate limits, any public utility the product or service of which is or is to be supplied to the municipality or inhabitants and may contract with others for any such product or service.

This provision of the Ohio Constitution confers plenary home rule authority to municipalities with regard to utility operations. Therefore, any statute that controls or restricts municipal utilities in this regard cannot be upheld. The Ohio Supreme Court considered the jurisdiction of OPSB over municipalities in Columbus v. Power Siting Commission (1979), 58 Ohio St. 2d 435, 390 N.E.2d 1208. The Ohio Supreme Court clearly and unambiguously determined that OPSB cannot evaluate and make findings of fact on the issues of municipal need, and the service of the public interest, convenience and necessity as those factors are enumerated in Section 4906.10(A), Revised Code, and the regulations promulgated thereunder. Columbus at 440. *See, also, State v. Cleveland* (June 12, 1986), 8th Dist. No. 49408, 1986 WL 6710.

In concert with this home rule authority, Ohio municipalities are not required to apply for a Certificate as described in Section 4906.06, Revised Code. Further, the Board should not apply the certificate criteria articulated in Section 4906.10, Revised Code. Cleveland at *2, citing Columbus ("The City of Columbus was not required to file with the Siting Commission a letter of intent nor to apply for a certificate of environmental compatibility and public need as described in R.C. 4906.").

Here, the municipalities have utilized their constitutional authority through AMP-Ohio. While the Supreme Court held that municipalities do not have to file an application for a Certificate which meets the traditional statutory criteria set forth in Section 4906, Revised Code, the Court did provide OPSB the power to weigh the nature of the probable environmental impacts, considering the state of available technology and the nature and economics of the various alternatives and other pertinent considerations of a proposed project against the municipality's determined needs and evaluations of public service and convenience. Columbus at 441.

Thus, the Ohio Supreme Court established a balancing test that allows the Board to weigh the inherent public need associated with municipal public power projects against the nature of the probable environmental impacts associated with the project. This balancing test renders the standard of "minimal adverse impact" as articulated in Sections 4906.10(A)(3), Revised Code, inapplicable to municipal power. Further, the Supreme Court recognized that a municipality's compliance with Ohio's environmental statutes, enumerated in R.C. 3704 (air pollution control), R.C. 3734 (solid waste disposal) and R.C. 6111 (water pollution control) is sufficient to demonstrate that environmental interests will be adequately protected, absent clear evidence to the contrary. Columbus at 441-442.

Nonetheless, AMP-Ohio has submitted a complete Certificate Application, which strictly complies with the requirements of Section 4906.10, Revised Code, in order to allow the Board complete access to all relevant information related to AMPGS. AMP-Ohio is confident that the Board will issue findings determining that AMP-Ohio clearly and completely meets all statutory criteria necessary for a Certificate; however, the Board should be mindful of the balancing test established by the Supreme Court in its review of AMP-Ohio's Application.

II. AMP-Ohio Has Met the Requirements of Section 4906.10, Revised Code, for Issuance of a Certificate.

AMP-Ohio's Certificate Application was filed in a form which complied with the requirements of Section 4906.06, Revised Code. On June 29, 2007, AMP-Ohio was notified that, pursuant to OAC 4906-1-14(C), the Certificate Application was certified as complete. Neither Activist Groups nor Young presented any evidence regarding the lack of completeness or perceived deficiencies of AMP-Ohio's Certificate Application. Rather, both Intervenors have alleged that the Board should not issue the Certificate based on perceived deficiencies in AMP-Ohio's Certificate Application relating to the requirements of Section 4906.10, Revised Code.

One theme constantly played by the Activist Groups was that AMP-Ohio should have considered and determined to use other technologies that they argue are in some respects "better" environmentally. In this regard, they focus on Section 4906.10(A)(3) requirement that "...the facility represents the minimum adverse environmental impact. . ." while ignoring the balance of the statutory provision that provides such determination is to be made "...considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations."

In reviewing the Activist Groups' arguments in this regard, the analysis of the United States Court of Appeals in reviewing similar arguments by one of the intervenors here (Sierra Club) about what must be considered in determining best available control technology or BACT stated:

. . .the implication, one might think, is that the agency could order Prairie State to redesign its plant as a nuclear plant rather than a coal-fired one, or could order it to explore the possibility of damming the Mississippi to generate hydroelectric power, or to replace coal-fired boilers with wind turbines. That approach would invite a litigation strategy that would make seeking a permit for a new power plant a Sisyphean labor, for there would always be one more option to consider.

Sierra Club v. U.S.E.P.A. (2007), 499 F.3d 653, at 655 (2007). Sound familiar? It should, because here the Activist Groups' approach is the same and it should likewise be rejected by the Board as it examines the arguments below.

As set forth above in the Certificate Criteria Section, Section 4906.10, Revised Code, requires a finding by the Board that eight statutory criteria have been met. AMP-Ohio has met each of the eight criteria for the reasons set forth as follows.

A. AMP-Ohio has a Demonstrated Need for AMPGS.

Procedurally, as set forth in Section I, the Ohio Supreme Court, applying Section 4 of Article XVIII of the Ohio Constitution, has determined that OPSB cannot determine municipal need for a utility facility pursuant to Section 4906.10(A)(1), Revised Code, as such action would "constitute a direct and substantial interference with the city's home rule authority." Columbus at 440. Without waiving this constitutional right, AMP-Ohio, in good faith, has presented evidence to demonstrate that AMP-Ohio has a critical need for AMPGS.

Further, the Board's requirement to demonstrate need for the facility is limited only to transmission lines (electric or gas/natural gas). In the case of a major utility facility, as defined by Section 4906.01(B)(1), Revised Code, the Board shall presume the need for the facility as that need is stated in an application pursuant to Section 4906.06(A)(3), Revised Code. In the Matter of the Application of Ohio Edison Company (2000), Case No. 99-540-EL-BGN. As articulated in the Staff Report: "The basis of need as specified under 4906.10(A)(1), Revised Code, is not applicable to this electric generating project." Staff Exhibit 1.

Ohio law is clear: AMP-Ohio does not have to demonstrate need for AMPGS. Nonetheless, Activist Groups have focused considerably on AMP-Ohio's alleged flawed power supply analysis as the basis for its argument that AMPGS is not really needed. As such, AMP-

Ohio believes that it is necessary to demonstrate, via evidence, that AMP-Ohio has a clear, critical need for AMPGS.

AMP-Ohio's Certificate Application clearly articulates the need for AMPGS. AMPGS Certificate Application, Project Summary Section and Project Description Section. Further, AMP-Ohio's critical need for AMPGS was articulated in evidence by all of AMP-Ohio's witnesses. Put succinctly, two primary factors clearly demonstrate AMP-Ohio's critical need for AMPGS. First, AMP-Ohio's members currently are overly dependent on a volatile power market for over 60% of AMP-Ohio's members' power needs. See, e.g., AMP-Ohio Exhibit 3, Kiesewetter Q/A 3 and Exhibit SK3. AMPGS will relieve this current over-reliance on this volatile power market. Second, national power forecasts, as well as AMP-Ohio's own power forecasts, demonstrate that power supply needs for the region and for AMP-Ohio's members will continue to increase. It is also noteworthy that an additional 12% of current base load needs comes from AMP-Ohio's 1950's vintage R. H. Gorsuch Station. Id. AMP-Ohio must be positioned to address its members' current and future needs.

Scott Kiesewetter, AMPGS project manager, stated that "AMPGS is necessary to satisfy the energy needs of AMP-Ohio's members in a cost-effective, environmentally compatible manner." AMP-Ohio Exhibit 3, Kiesewetter Q/A 6. As noted above, Mr. Kiesewetter explained, as demonstrated in Exhibit 3, SK-3, that AMP-Ohio's members "are significantly overexposed to a dysfunctional wholesale market for over 60% of their Base Load needs." AMP-Ohio Exhibit 3, Kiesewetter Q/A 9, SK-3. This base load power purchased from the market is produced primarily from older, less efficient coal based power plants in this region. Tr. II, pp. 138-139. AMPGS will serve 47% of AMP-Ohio's member needs for base load power starting in 2013. AMP-Ohio Exhibit 3, SK-7. Along with other AMP-Ohio projects, operating AMPGS will result

in a decrease in market power requirements needed to serve AMP-Ohio members from over 60% to approximately 13%. AMP-Ohio Exhibit 3, Kieseewetter SK-6, SK-7.

As confirmed by Ivan Clark of R.W. Beck:

AMP-Ohio determined that, due to difficult power supply availability in wholesale markets, constrained transmission access and volatile prices adversely and materially impacting AMP-Ohio's ability to provide its members with reliable, cost-effective, and cost-predictable power supply. As a result, construction of a reliable, cost-effective and cost-predictable source of base load power to AMP-Ohio's members was necessary. AMP-Ohio Exhibit 4, Clark Q/A 14.

In 2007, at the request of AMP-Ohio, R.W. Beck ("Beck") performed an updated analysis of AMP-Ohio's members' base load power requirements. AMP-Ohio Exhibit 4, Clark Q/A 12. That study, first issued in May 2007 and updated in October 2007, :

looked at the individual power supply needs of the then 119 AMP-Ohio Members and provided an optimized resource selection based on a long-term, 20 year view. That study identified a need for over 2,000 MW of base load generation for AMP-Ohio's Members and recommended pursuing approximately 1,500 MW of coal-fired generation and 500 MW of hydroelectric generation to fill that need. AMP-Ohio Exhibit 1, Clark Q/A 13; and AMP-Ohio Exhibit 15, Power Supply Plan for the City of Cleveland.

Beck projected that AMP-Ohio members' power supply needs would increase 1.75% per year. AMP-Ohio Exhibit 4, Clark Q/A 17. Similarly, recent studies by both the Electric Power Research Institute ("EPRI") and the Carnegie Mellon Electric Industry Center forecast electric power demand in the United States to increase in the 40% range by 2030. AMP-Ohio Exhibit 4, Clark Q/A 17, Exhibits IC-5, IC-6.

In an apparent effort to refute AMP-Ohio's need determination, NRDC and Sierra Club presented testimony from David Schlissel to discuss power supply. Interesting, Mr. Schlissel could only recall two instances where either he or his consulting employer Synapse had performed power supply planning for utilities, once for Nova Scotia Power and once for an undisclosed client. Tr. III, p. 52. Further, in response to questions directed at Mr. Schlissel

related to AMP-Ohio, its members and their (AMP-Ohio and its members) collective power supply, counsel for NRDC objected and, as the basis for the objection, limited and defined the scope of Mr. Schlissel's alleged expertise as follows: "Our witness [D. Schlissel] **doesn't have** - is an expert here in CO₂ costs as well as increasing construction costs with respect to this plant. So he [J. Bentine] entitled to make the argument, but he cannot make it though our witness." Tr. II, p. 64 (emphasis added).

Even more curiously, although Mr. Schlissel may have been retained, subject to his counsel's verbal limitations on his areas of alleged expertise, to challenge AMP-Ohio's power supply choices and forecasts, as set forth in his direct testimony, pages 66-73, Mr. Schlissel knew very little about AMP-Ohio. Mr. Schlissel testified that, even though he had access to numerous power supply studies and related materials prepared for AMP-Ohio and its members,² he had no idea: (1) how many AMP-Ohio members have generation assets; (2) how much power AMP-Ohio needs to purchase from the market (other than the recollection that "it's fairly high"); (3) how many members AMP-Ohio serves and/or in what states; (4) whether or not long-term bilateral contracts other than market price contracts are available in Ohio (in either PJM or MISO). Tr. III, pp. 59-72.

Simply put, Mr. Schlissel presented no evidence, either in the form of testimony or exhibits, to demonstrate that he had a basis to form any opinion about power supply in the Midwest generally or power supply for AMP-Ohio and its members specifically. Unbelievably, for a witness criticizing AMP-Ohio's power supply planning, Mr. Schlissel also admitted he mistakenly thought the 2,000 MW base load deficit for AMP-Ohio's members was a regional

² Mr. Schlissel testified that he had, among other documents, reviewed: AMP-Ohio's R.W. Beck Initial Project Feasibility Study for the AMPGS, AMP-Ohio Exhibit 11, (2) the Consulting Engineer's Report for AMPGS prepared for Cleveland Public Power by Burns & Roe, AMP-Ohio Exhibit 13 and (3) six or seven individual municipal power supply plans prepared by R.W. Beck for AMP-Ohio's largest project participants. Citizen Group Exhibit 4, Schlissel, pp. 67-68.

deficit. See Tr. III, p. 124 and Tr. IV, p. 270. The regional deficit is projected to be a staggering 11,000 MW in 2016. AMP-Ohio Exhibit 4, Q/A/ 19.

In fact, Mr. Schlissel performed no load forecast specific to AMP-Ohio or any of its members. Tr. III, p. 77. In addition, Mr. Schlissel did not perform any energy efficiency or renewable assessments specific to AMP-Ohio or any of its members:

We have not had the opportunity to conduct any assessments of the potential for energy efficiency or renewable resources in Ohio or in the communities that would be participants in the AMPGS Project. Nor have we had an opportunity to do any capacity expansion modeling of our own concerning the AMPGS Project. Citizen Group Exhibit 4, Schlissel p. 70-71.

Instead, Mr. Schlissel's testimony merely offered only that AMP-Ohio's power supply planning does not look like other, un-named electric utilities' power supply planning and, thus, must be flawed. Citizen Group Exhibit 4, Schlissel p. 66. However, AMP-Ohio appears to be in good company, as Mr. Schlissel apparently disagrees with the power supply planning CO₂ cost projections, construction cost projections, or some combination of the three of just about every utility he studies. *See, e.g.,* Tr. III, pp. 92-112. Such sweeping and unsupported testimony has no value and should be disregarded by the Board.

Ironically, Mr. Schlissel did agree with AMP-Ohio and AMP-Ohio's technical experts on the issue of whether or not AMP-Ohio should move away from overdependence on market purchasing of power: "I'm not sitting here saying don't do anything. I don't think that buying [power] from the market long-term is a viable strategy, a prudent strategy. I'm not saying don't do anything." Tr. III, p. 138. But, Mr. Schlissel, with possibly two power supply studies under his belt (as opposed to critical reviews of others' work), just disagreed completely with AMP-Ohio, its members, and its numerous power industry experts regarding AMP-Ohio's power supply strategies to move this non-profit municipal organization away from market power.

Even given his clear unfamiliarity with AMP-Ohio, its members and its power supply plans and options, Mr. Schlissel still opined that AMP-Ohio should have considered energy efficiency, wind, biomass, and, as a last resort, NGCC and in lieu of AMPGS. Tr. III, pp.74-75. However, Mr. Schlissel's subsequent testimony failed to support his generalized power supply suggestions. More importantly, as described below, AMP-Ohio's testimony and Exhibits showed this criticism to be completely false. See, e.g., AMP-Ohio Exhibits 1, 2, 3, 4, 11, 12, 15, 16C, 17, 18C, and Tr. II, pp. 167, 169, 172, 179-180, 200-201; Tr. V, pp. 20, 44-45, 47-48, 69-72.

First, with respect to energy efficiency, Mr. Schlissel acknowledged that AMP-Ohio and its members could, at best, achieve a one to two percent reduction from current power supply needs (i.e. not factoring in any growth). Tr. III, pp. 78-79. Mr. Schlissel also acknowledged that there is no evidence to demonstrate that energy efficiency is sustainable over long periods of time ("In California when they had the rolling blackouts, they had a lot of conservation and then they discovered that people started using power again."). Tr. III, pp. 79. According to Mr. Schlissel, the "hope" for energy efficiency is to keep energy consumption level over some period of time. Tr. III, pp 79. Thus, energy efficiency is not, even from Mr. Schlissel's perspective, a substitute for the serious deficiency for base load generation that AMP-Ohio's members need.

Second, with respect to wind, it is critical to note Mr. Schlissel stated that he was not recommending that a substantial portion of AMPGS be replaced by wind generation ("I am not sitting here saying that you can replace a thousand megawatt coal base-load plant with wind"). Tr. III, pp 81-82. Further, Mr. Schlissel was not familiar with wind capacity factors for Ohio's only operational wind farm, AMP-Ohio's 7.2 MW Green Mountain wind farm. Tr. III, pp. 83. In addition, Mr. Schlissel has not done any specific wind monitoring studies in Ohio, nor has he

seen any wind monitoring studies for Ohio, to determine the projected capacity factors of wind. Id. Even without any specific data, Mr. Schlissel thought that the capacity factor in Ohio for wind would be 30 to 35 percent, based on some wind maps along the shore of the Lake Erie. Id. It is not in dispute that the actual capacity of the AMP-Ohio/Green Mountain Wind Farm is much less, between 21-23.5%. AMP-Ohio Exhibit 17, Testimony of Larry Marquis, Q/A 9.

Third, Mr. Schlissel stated that AMP-Ohio should have evaluated the possibility of base load power generation from biomass. However, Mr. Schlissel failed to present any evidence, as to the basis for this opinion, the base load capacity possibilities of biomass or any demonstration that Mr. Schlissel knew anything about whether or not AMP-Ohio considered biomass generation. As Mr. Clark testified, however, biomass is utilized for much smaller sized generation facilities. Tr. VI, p. 20.

Fourth, Mr. Schlissel stated that AMP-Ohio should have considered, as a last resort, building NGCC to serve base load needs. However, Mr. Schlissel acknowledged that no one in the Midwest, including Ohio, utilizes NGCC to serve base load power needs. Tr. III, p. 129.

Importantly, although Mr. Schlissel thought these options, energy efficiency, wind, biomass and NGCC, might “have a possibility” of filling the 2,000 base load MW “hole” in power supply faced by AMP-Ohio and its members, Mr. Schlissel had not done any study to prove his hypothesis: “have I done the study? No. So I can’t sit here and say yes there’s an alternative.” Tr. III, p. 139, emphasis added. He also acknowledged that if AMP-Ohio studied its power supply options and determined that “AMPGS is the most economic, lowest-risk option, then you [AMP-Ohio] should get a certificate.” Tr. III, p. 139.

AMP-Ohio agrees with Mr. Schlissel on this point. AMP-Ohio, as clearly demonstrated by AMP-Ohio’s witnesses and evidence, has spent years studying, evaluating and considering a

full range of power supply options and continues to do so as part of its long-range power supply planning with the goal of providing affordable, low-risk, reliable and environmentally sound power to its municipal members. Thus, using Mr. Schlissel's standard, AMP-Ohio "should get a certificate."

On rebuttal, AMP-Ohio presented AMP-Ohio senior officials Larry Marquis and Phillip Meier to further refute Mr. Schlissel's claim that AMP-Ohio has not considered "all other alternatives" to serve as power supply needs. First, AMP-Ohio presented Larry Marquis, AMP-Ohio's Vice President of Technical Services, to explain AMP-Ohio's consideration of a wide variety of power supply options, including wind, energy efficiency efforts and landfill gas. AMP-Ohio Exhibit 17. In response to cross, Mr. Marquis stated, "not only have we considered other alternatives, we have them in operation." Tr. VI, p. 40. To summarize, Mr. Marquis testified that:

- (1) AMP-Ohio has been utilizing landfill gas generation since 1998 and is in the process of assisting Member communities evaluate over 100 MW of additional landfill gas, biomass and municipal solid waste energy projects. While this is a base load resource, it is not dispatchable and has other inherent challenges, so the amount in a power supply portfolio must be limited. AMP-Ohio Exhibit 17, Marquis Q/A 6-8.
- (2) AMP-Ohio has developed and is operating on behalf of its Members, Ohio's only utility scale commercial wind farm, which is a 7.2 MW, 4 turbine project. The capacity factor of the wind farm ranges from 21-23.5% (in direct contrast to Mr. Schlissel's estimated 30-35%). AMP is currently in the development phase for another 50 MW of wind generation and is in the process of overseeing additional wind monitoring studies in Ohio and Pennsylvania. However, AMP-Ohio realizes that wind is not a true base load resource in Ohio as it is neither reliable nor dispatchable. Further, there are other key factors that affect the economics and availability of wind generation for AMP-Ohio. AMP-Ohio Exhibit 17, Marquis Q/A 9-12.

Mr. Marquis further testified that:

AMP-Ohio has and will continue to pursue a portfolio of generation resources. The complexity of developing wind and landfill resources, in relation to the amount of MW available, their lack of dispatchability and their cost do not make them a substitute of a base load resource such as AMPGS. However, having lower cost, reliable, dispatchable

resources such as AMPGS enhances AMP-Ohio's ability to make these kinds of resources available to its Members. AMP-Ohio Exhibit 17, Marquis Q/A 17.

With respect to energy efficiency, Mr. Marquis was asked the following from question from the ALJ:

Q: There were some questions asked by Mr. Fisk regarding energy efficiency and what AMP-Ohio is doing with regards to energy efficiency. In your opinion, could the load that is being expected to be fulfilled by this plant be met with energy efficiency, energy efficiency programs or any kind of energy efficiency efforts?

A: My opinion is it could not, definitely not, it's an important function, that there's just not enough there to supply a thousand megawatts of energy to our members. Tr. VI, p. 47.

AMP-Ohio also presented rebuttal testimony from Phillip Meier, AMP-Ohio's Assistant Vice President—Hydro Development. AMP-Ohio Exhibit 18. Mr. Meier explained that AMP-Ohio also utilizes another renewable, hydroelectric generation, from its Belleville Hydro project on the Ohio River. AMP-Ohio Exhibit 18, Meier Q/A 5-6. In addition, starting in 2000, AMP-Ohio and its members began evaluating the addition of significantly more hydroelectric power in its portfolio, and AMP-Ohio currently holds the FERC licenses, and is developing an additional 191 MW of hydroelectric capacity. AMP-Ohio Exhibit 18, Meier Q/A 17-21. However, this hydroelectric power generation is not a substitute for 1,000 MW of base load power generation since it is run-of-the-river and not dispatchable and "there is not enough [hydro] capacity in the Midwest that could meet that [1,000 MW base load] need." AMP-Ohio Exhibit 18, Meier Q/A 10-11; Tr. VI, p. 68.

Mr. Meier explained the real limitations on hydroelectric development in this region (AMP-Ohio Exhibit 18C, Meier Q/A 22, 23, 24; Tr. VI, pp. 69-72) and that AMP-Ohio's ability to take on additional hydroelectric projects is finite. AMP-Ohio Exhibit 18, Meier, Q/A 23, 24; Tr. VI, pp. 70-74.

AMP-Ohio also presented rebuttal testimony from Ivan Clark regarding AMP-Ohio's efforts to consider NGCC as a base load option. Mr. Clark testified that NGCC is not economical for base load purposes for AMP-Ohio in the "build" window the AMPGS project has established. AMP-Ohio Exhibit 16C, Clark Q/A 12. In February and June 2007, Beck prepared bus bar costs analyses for power generation options as part of the members' power supply feasibility studies. AMP-Ohio Exhibit 16C, Clark Q/A 12; AMP-Ohio Exhibit 4. In December 2007, Beck refreshed this bus bar cost analysis and the results remained unchanged – NGCC, like other options such as market and IGCC, have a higher bus bar cost as compared to PC. AMP-Ohio Exhibit 16C, Clark Q/A 12, IC-11. In addition, as acknowledged by Mr. Schlissel, NGCC is not used in the Midwest to satisfy base load needs. Rather, it can be a significant asset for load following intermediate power.

Based on home rule authority, the significant witness testimony and other evidence presented by AMP-Ohio and the lack of credible, supported evidence to the contrary, the Board should find that AMP-Ohio has clearly demonstrated that it has a critical need for AMPGS to serve the existing load of its member communities in order to move these communities away from the high prices and volatility of the power markets.

B. AMP-Ohio has Articulated the Nature of All Probable Environmental Impacts as Set Forth in Section 4906.10(A)(2), Revised Code.

AMP-Ohio has identified the nature of the probable environmental impact associated with AMPGS. This is the initial step of a two-step process: (A)(2) addresses the identification of the nature of probable environmental impacts. Step two, (A)(3), addresses the need to assure that the identified impacts represent the minimum adverse environmental impact, when considering all relevant factors.

As found by the Staff, Staff Exhibit 1, p. 28, AMP-Ohio's Certificate Application identifies such probable environmental impacts, primarily in the Environmental Data Section. Additional impacts are identified in the Project Summary, Project Description, Technical Data and Social/Ecological Sections. Further, as explained by Mr. Meyer, before AMP-Ohio can move forward with AMPGS, it must obtain numerous environmental permits, all of which require AMP-Ohio to identify probable environmental impacts:

A: We have applied for an NPDES permit for water discharge and water intake. We have applied for a solid waste permit for fly ash, bottom ash, and possibly synthetic gypsum disposal. We've applied for a 401 water quality certifications for wetlands and streams. We've applied for a 404 certification—a 404 permit, section 10 permit for dredging the Ohio River, construction of barge docking facilities. We've applied to the FAA and the Ohio Department of Transportation to construct two tall stacks. I believe that's it at the moment.

Tr. II, pp. 116-117.

And contrary to the Activist Groups' position, AMP-Ohio did "consider" CO₂.

Q: Did the air permit address anything to do with CO₂?

A: We addressed it in the air permit, that it was an item that we considered, and that's why the Powerspan scrubber was included.

Tr. II, pp. 116-117; see also Staff Exhibit 1, pp. 30-31.

Dr. Couppis also testified that AMP-Ohio considered environmental impacts from AMPGS:

Q: Were environmental impacts of the AMPGS considered in its application to the Power Siting Board?

A: Yes.

Q: Were the environmental impacts of AMPGS considered in its applications for various other permits that it is required to get in order to operate such as 401 permits, 404 permits, NPDES permits, air permit, landfill permit, Federal Aviation Administration Permits?

A: Yes.

Tr. II, pp. 49-50.

AMP-Ohio has identified, as supported by Mr. Meyer and Dr. Couppis' testimonies, all probable environmental impacts from AMPGS. Likewise, Staff identified the nature of probable environmental impacts in its Staff Report. Staff Exhibit 1, pp. 19-28.

No evidence to the contrary has been established by Intervenors. In fact, although Staff presented witness Jon Pawley to support the Staff Report and Recommended Conditions of Certificate, the Activist Groups failed to ask Mr. Pawley a single question regarding the forty-two items of probable environmental impact identified by OPSB related to AMPGS, limiting their questioning to a currently unregulated substance and attempts to insert global warming into this proceeding. Tr. V, pp. 91-117.

C. AMP-Ohio Has Demonstrated that AMPGS Represents the Minimum Adverse Environmental Impact as Set Forth in Section 4906.10(A)(3), Revised Code.

AMP-Ohio, as set forth above, has identified all probable environmental impacts associated with AMPGS. In addition, AMP-Ohio must demonstrate that AMPGS represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives and other pertinent considerations in order to comply with Section 4906.10(A)(3), Revised Code.

Since the inception of the AMPGS project, AMP-Ohio has viewed environmental impacts as a key issue that must be considered at every step of the process. Starting with site selection process, as set forth in the needs section above, AMP-Ohio has focused on adding generation in an environmentally responsible way. This fact is evidenced by AMP-Ohio's continued commitment to additional hydroelectric, wind, and biomass generation projects as well as energy efficiency initiatives. See, generally, AMP-Ohio Exhibit 1 (Couppis), Exhibit 2 (Meyer), Exhibit 3 (Kiesewetter), Exhibit 4 (Clark), Exhibit 17 (Marquis) and Exhibit 18

(Meier). However, as even Mr. Schlissel agrees, AMP-Ohio cannot deliver its members with the needed base load power simply through the deployment of renewables.

As described in the AMPGS Certificate Application, AMP-Ohio has designed AMPGS to minimally adversely impact the environment, considering the state of available technology and the nature and economics of the various alternatives and other pertinent considerations. AMPGS Certificate Application. Mr. Meyer confirmed this approach at the hearing where he testified that:

AMPGS will demonstrate only a minimum adverse impact to the environment. AMPGS is designed with state of the art, proven emissions control technologies in all environmental media. With respect to air emissions, AMPGS will replace generation from older, less efficient and much less controlled power plants, thus AMPGS will reduce AMP-Ohio's overall air emissions footprint. AMP-Ohio plans on retiring or repowering the R.H. Gorsuch Station more or more or less contemporaneously with the in-service date of AMPGS. In addition, we expect that some of our smaller, older Member-owned coal fired units will be retired as well. In fact, our Member, St. Marys, has just announced it will retire rather than repair its 10 MW, Unit # 6, in part in anticipation of its share of AMPGS. Because AMP-Ohio and its Members are so heavily in the market for Base Load power and energy, these purchases come from primarily coal fired generation. Overall, generating the same amount of kWh from AMPGS as from current sources that are older, less efficient, and less controlled will significantly decrease the environmental impact associated with serving that 1000 MW of load.

AMP-Ohio Exhibit 2, Meyer Q/A 25-26.

After significant review, the OSPB Staff also concluded that, with acceptance of the Staff's Recommended Conditions of Certificate, the "Staff believes that minimum adverse impacts will be realized. . ." Staff Exhibit 1, p. 40.

At hearing, the Activist Groups raised a myriad of scatter-shot allegations regarding AMPGS and environmental impacts. From an organizational perspective, the Activist Groups' allegations can be categorized as follows:

- Other similarly sized base load generation options result in less adverse environmental impacts, even after consideration of the (a) state of available technology and (b) the nature and economics of the various alternatives.
- AMPGS does not represent the minimum adverse environmental impacts because AMP-Ohio has not considered CO₂ and has underestimated future CO₂ costs.

1. **Other base load options do not result in less adverse environmental impact, considering the state of available technology and the nature and economics of the various options.**

In Section II.A. above, AMP-Ohio explained its complex generation and power supply planning and portfolio. As part of the need determination for AMPGS, AMP-Ohio considered a significant number of conservation and renewable generation options: wind, hydro, biomass, energy efficiency. While AMP-Ohio considers these power generation options critical pieces in AMP-Ohio's power supply portfolio, it is clear that utilization of such resources, even combined, cannot feasibly, reliability, consistently and cost-effectively replace AMPGS. AMP-Ohio Exhibit 3, Kiesewetter Q/A 16. Since these power supply options were explained in detail in Section II.A., it is incorporated by reference herein.

In addition, AMP-Ohio did evaluate PC, CFB, NGCC and IGCC as potential base load options for AMPGS. AMP-Ohio Exhibit 1, Couppis Q/A 12; AMP-Ohio Exhibit 3, Kiesewetter Q/A 21.

As Mr. Kiesewetter detailed:

In 2003, AMP-Ohio, with the assistance of a 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 the 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 six states were studied as a part of this evaluation. With the assistance of another nationally recognized engineering firm, Black and 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 First Energy'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 the 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.

AMP-Ohio Exhibit 3, Kieseewetter Q/A 21.

As described above, AMP-Ohio looked at four potentially feasible base load generation options: PC, CFB, NGCC and IGCC. After a long and deliberate process, AMP-Ohio selected PC for its flagship project, AMPGS. AMP-Ohio's witnesses and other evidence demonstrate that AMPGS represents the minimum adverse environmental impact after consideration of the state of available technology and the nature and economics of the various options. AMP-Ohio Exhibit 1, Couppis Q/A 26; AMP-Ohio Exhibit 2, Meyer Q/A 31; AMP-Ohio Exhibit 3, Kieseewetter Q/A 27.

In contrast, the Activist Groups believe that other power generation options should be by OPSB viewed as having less impact to the environment. Specifically, the Activist Groups presented Mr. Furman to tout the alleged advantages of utilizing IGCC technology.³

AMP-Ohio did consider IGCC as a possible base load option; however, IGCC was eliminated for a host of fundamental and critical reasons. Specifically, as detailed e.g. by Dr.

³ The Activist Groups do not all share Mr. Furman's zeal for IGCC. Indeed, it is troubling that the Sierra Club and NRDC would sponsor a witness that recommends that IGCC should be constructed when they would oppose that outcome as well. Tr. I, pp. 180, 229-233; see also Tr. I, p. 114.

Couppis, risk, cost, size, reliability, environmental and operating considerations, all supported the selection of PC rather than IGCC for AMPGS.

Q: Why was IGCC not selected?

A: The IGCC technology (and by this, I refer to IGCC utilized for electrical generation) was not selected for the following reasons:

- The degree of development of the IGCC technology in the United States is not as high as the more conventional PC technology. There are only two units of a size which could be effectively utilized as multiple units in a base load plant to arguably provide the generation capacity required by AMP-Ohio that are operating in the United States, both of which were supported financially by the United States Department of Energy ("DOE") during development and early operation.
- The track record of IGCC technology in the United States indicates lower availabilities than the PC technology. IGCC has approximately a 5% to 8% lower availability than PC technology (i.e., IGCC from 80% to 85% for a single train and PC 88% to 92%). This lower availability is especially evident during the early years of operation.
- The lower availabilities shown by IGCC plants do not match the system characteristics needed by AMP-Ohio. AMP-Ohio does not have any other base load resources to make up the energy shortfalls from an IGCC unit and would need to resort to purchases from the grid from power plants with higher emissions, utilize expensive backup natural gas fuel at the IGCC plant, or utilize expensive natural gas or diesel peaking generation. Further, IGCC, as a chemical process, cannot be ramped up and down to meet system conditions nearly as quickly as a PC. That is, it is not as dispatchable, another key for AMP-Ohio.
- The level of warranties and guarantees that need to be obtained from EPC contractors and suppliers for IGCC technologies are less certain than warranties and guarantees that could be obtained for PC technologies.
- Even though IGCC may have a small heat rate advantage, the lower availability would necessitate AMP-Ohio purchasing power from the grid to make up this shortfall from power plants with higher heat rates than a new PC technology. Therefore, the apparent advantage of IGCC is offset by these power purchases from the grid from older, less efficient and less controlled coal units.
- Even when one considers CO₂ capture and sequestration or CCS, which is the reported advantage of IGCC units, the turbine technology to burn hydrogen has not presently been demonstrated by the turbine manufacturers over a time period appropriate for utility application. Ninety percent (90%) capture is defined as the

goal of DOE in Future Gen and the capture percentage basis of many of the general projections such as those in the recent 2007 MIT *"The Future of Coal"* study.

- The capital costs of developing an IGCC unit are higher than the costs of PC units by approximately 10 to 20 percent (DOE/NETL – 2007/1281 Report "Cost and Performance Baseline For Fossil Energy Plants"; and EPRI – Clean Coal Technology Status Report February 19, 2007).
- AMP-Ohio is proposing to use the Powerspan technology for SO₂ capture. According to Powerspan, this commercially ready technology can subsequently be upgraded to cost effectively capture CO₂ at a 90% rate when legislation/regulations are promulgated or it is otherwise appropriate to do so. Powerspan is undertaking CCS demonstration tests in 2008, utilizing a 1 MW slipstream, at the Burger demonstration unit to demonstrate the CO₂ capture capability of their process and has other plans for construction of demonstration units at existing power plants. Powerspan and NRG Energy have also announced a 125 MW CCS commercial demonstration at NRG's WA Parish Texas plant to be operational in 2012. The reported Powerspan costs for the CO₂ capture are in a similar range as the reported cost for carbon capture from IGCC units (i.e. approximately \$20 per ton).
- The overall weight of the evidence and factors identified herein indicates that the IGCC technology does not offer any advantages as compared to the PC technology in terms of meeting the overall objectives of AMP-Ohio.

AMP-Ohio Exhibit 1, Couppis Q/A 15.

As noted in the third bullet above, as a chemical process, IGCC cannot "follow the load" or ramp up and down as quickly as a PC plant. As the AMPGS will be AMP-Ohio's "flagship", it is critical that it be dispatchable. In response to an ALJ question regarding the difference between the dispatchability of an IGCC versus a PC, Dr. Couppis further explained why dispatchability, or lack thereof, is so critical to AMP-Ohio:

Q: Can you explain to me why that is important for the AMP-Ohio specific facility, dispatchability issues?

A: It is important primarily because these will be their—the AMPGS will provide a large part of their base load resources, so they have no other resources to fall back on or they don't have as many as a larger entity that has many, many units, so the inability to run a unit will not have as large of an impact on the overall system.

Q: So that statement was in regard to the base load issue?

A: Yes.

Tr. II, , p. 57.

In an attempt to demonstrate that IGCC is a better technology selection for AMPGS than PC under the criteria articulated in Section 4906.10(A)(3), the Activist Groups presented Mr. Furman for testimony.⁴ Initially, AMP-Ohio submits that the Board should give Mr. Furman's entire testimony little or no weight. It was clear from Mr. Furman's testimony that he is not qualified to testify in this area, had little to no independent knowledge on IGCC and PC emissions and knew nothing about AMP-Ohio or AMPGS.

Specifically, although Activist Groups presented Mr. Furman as someone who was an "expert" regarding air emissions from power plants, primarily PC and IGCC, it was quickly apparent that Mr. Furman had no air emission background or training and had very limited review and knowledge of current IGCC air permit emissions requirements. Citizen Groups Exhibit 1, Furman RCF-1. In fact, as demonstrated by the amount of his testimony and exhibits that were stricken, most of his conclusions were simply repackaging – and sometimes not even that – the work of others. Tr. I, pp. 270-276 and Tr. VI, p. 118 et seq.

With respect to his knowledge of AMP-Ohio, Mr. Furman offered the following:

Q: Do you know who AMP-Ohio's members are?

A: No.

Q: Do you know whether or not AMP-Ohio is a nonprofit or a profit?

A: No.

Q: Do you know its tax status?

⁴ It is important to note that one of the Intervenor, Sierra Club, has challenged numerous recent IGCC air permits, including Duke's Edwardsport project in Indiana. In the Matter of Duke Energy Indiana, Inc., Indiana Utility Regulatory Commission (Cause No. 43114) (2007); Tr. I, p. 114.

A: No.

Q: What natural gas combined cycle units does AMP-Ohio currently have?

A: I don't know.

Q: Do you know what the total of AMP-Ohio's current base load generation is?

A: No. I do not.

Q: Do you know what its total load is?

A: No I do not.

Q: Do you know how much [power] it purchases on the market?

A: No I do not.

Q: Tell me this, Mr. Furman, in your view would it be important to know the current generation fleet of an entity and its current load in order to determine the most appropriate addition to its generation fleet?

A: Yes.

Tr. I, pp. 34-37.

Mr. Furman is clearly not qualified to testify as an expert on IGCC as that technology relates to AMP-Ohio's power supply.

Substantively, even if Mr. Furman was qualified as an expert to testify, his testimony does not demonstrate that the selection of IGCC by AMP-Ohio for a 1,000 MW base load project represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives and other pertinent considerations.

The theme of Mr. Furman's testimony can be summarized as: "AMP-Ohio's real, proposed PC power plant, with warranties, guarantees, 90%+ availability, proven technologies,

best available pollution control technologies in all medias and the innovative Powerspan technology is not as desirable as a higher cost, conceptual, never been done at 960 MW, merchant application of IGCC for power generation with extra gasifiers, unknown turbines, supplemental co-fired fuels and warranties/guarantees based on a phone call”—i.e. a tangible project versus a hypothetical best case.

With respect to air emissions, Mr. Furman did not demonstrate that operating IGCC plants, specifically Polk County and Wabash, can achieve air emissions reductions at a greater level than from state-of-the art PC plants like AMPGS. Tr. I, pp. 109-112. To the contrary, Mr. Meyer testified that the two IGCC plants currently in operation in the US, Polk County and Wabash, have emission rates that are comparable to emission rates proposed for AMPGS. AMP-Ohio Exhibit 2, Meyer Q/A 18. Tr. II, pp. 122-123.

In addition to controlling air emissions at rates comparable to IGCC, AMPGS will also serve to reduce AMP-Ohio's overall air emissions footprint, as purchases from older, less efficient, less controlled units and generation from R. H. Gorsuch is replaced by AMPGS. AMP-Ohio Exhibit 2, Meyer Q/A 25, 26, 27; Exhibit RM-6.

Mr. Furman also touted the alleged CO₂ benefits of IGCC over PC, but admitted that many kinds of plants and technologies (including IGCC) produce CO₂ as a part of the process to create electricity. Tr. I, pp. 55-56. In addition, Mr. Furman acknowledged that neither Polk County nor Wabash have CO₂ capture equipment and that none of the proposed new IGCC projects will include CO₂ capture equipment. Tr. I, pp. 54-55. Mr. Furman's testimony is consistent with the recent findings of the Massachusetts Institute of Technology that “neither IGCC nor other coal technologies have been demonstrated with CCS.” AMP-Ohio Exhibit 9, The Future of Coal, p. xiii.

In developing AMPGS, Mr. Meyer testified that the potential environmental impacts of CO₂ were considered. Tr. II, p.121. However, unlike the Activist Groups, but consistent with the Massachusetts Institute of Technology, AMP-Ohio does not believe that IGCC is a CO₂ “technology winner.” AMP-Ohio Exhibit 9, The Future of Coal, p. xiii. (“A second high-priority requirement is to demonstrate CO₂ capture for several alternative coal combustion and conversion technologies. It is critical that the government R&D program not fall into the trap of picking a technology winner.”).

Regarding AMP-Ohio’s consideration of CO₂ impacts, Mr. Meyer testified as follows:

Q: Could you tell me within the context of this application [Certificate] and the balance of the permits that AMP-Ohio has asked for and in its planning of their project, how was CO₂ considered?

A: We considered it in the sense that it was possible that in the future we could see CO₂ regulation, and we wanted to have an option to control CO₂ if we needed to, and, hence, that resulted in the investigation of Powerspan because that offered what we considered at the time a very promising technology that would work with a PC, pulverized coal, plant that would scrub out CO₂.

Trl. II, pp. 121-122.

AMP-Ohio’s consideration of CO₂ also looked at its financial impact as well; despite the fact that CO₂ is not currently regulated and, as admitted by Mr. Furman, no one knows when CO₂ legislation will be enacted. See, e.g., AMP-Ohio Exhibit 1, Couppis Q/A 25, 25. Tr. I, pp. 260-261.

Importantly, the evidence shows that even assuming CO₂ costs at both the R.W. Beck assumed levels and the midpoint of the higher levels advocated by Mr. Schlissel, AMPGS remains cost justified as compared to other options. See, e.g., AMP-Ohio Exhibit 1, Couppis Q/A 24, 25; AMP-Ohio Exhibit 4, Clark Q/A 13, 31, 32; AMP-Ohio Exhibit 16C, Clark Rebuttal, Q/A 5, 6, 7, 8, 10, 11.

D. AMPGS is consistent with Regional Plans and Will Serve the Interests of Electric System Economy and Reliability as Set Forth in Section 4906.10(A)(4), Revised Code.

As set forth in the Certificate Application and as testified to by AMP-Ohio witnesses, AMPGS will be consistent with regional plans for expansion of the electric power grid of the electric systems serving Ohio and interconnected utility systems, and AMPGS will serve the interests of electric system economy and reliability as required by Section 4906.10(A)(4) AMPGS Certificate Application, Technical Data Section; AMP-Ohio Exhibit 4, Clark Q/A 15-20; AMP-Ohio Exhibit 3, Kiesewetter Q/A 25.

Similarly, the OPSB Staff recommended that:

the Board find that the proposed generation facility is sited to be consistent with plans for expansion of the regional power grid as evidenced by the system impact interconnection study performed by the regional system operator and will serve the interests of electric system economy and reliability by providing additional power to the regional grid to meet the growing demand of the Applicant's customers served by the electric power grid. Staff Exhibit 1, p 41.

Neither the Activist Groups nor Young presented any evidence on this issue.

E. AMPGS will Comply with All Applicable Environmental Laws as Set Forth in Section 4906.10(A)(5), Revised Code.

Section 4906.10(A)(5) requires AMPGS to comply with a myriad Ohio environmental statutes. AMP-Ohio will do so. AMPGS Certificate Application, Environmental Section. As Mr. Meyer testified:

Q: Based on your experience, education, and knowledge of the Application, and in your opinion, will the AMPGS comply with R.C. Chapters 3704, 3734, 6111 and all rules and standards adopted under those chapters, and comply with the rules and standards adopted under sections 1501.33, 1501.34 and 4561.32?

A: Yes.

AMP-Ohio Exhibit 2, Meyer Q/A 32.

In concert with AMP-Ohio, the OPSB Staff also concluded: "The Staff finds that the proposed facility will comply with the requirements specified in ORC Section 4906.10(A)(5)." Staff Exhibit 1.

With one possible exception, set forth below, the Intervenor did not dispute, by testimony or other evidence, Mr. Meyer's testimony regarding compliance with applicable environmental law, nor did Intervenor refute OPSB Staff's conclusion that AMP-Ohio had met these statutory criteria.

The Activist Groups did claim, in their Motion to Intervene, that AMP-Ohio will not comply with R.C. 3704 because AMP-Ohio "must control" CO₂. However, the Activist Groups failed to provide a single witness or piece of evidence to support its claim.

In sharp contrast to the Activist Groups' baseless allegation, AMP-Ohio clearly understands that AMPGS must and will comply with R.C. 3704 (air pollution control). The Environmental Data Section (B), pp. 1-6, of the AMPGS Certificate Application describes in detail how AMP-Ohio will comply with all applicable Ohio air law requirements. On May 15, 2006, AMP-Ohio applied for its initial air permit, a PSD permit to install ("PSD Permit"). AMPGS Certificate Application, Environmental Section, (B), p.1. On September 13, 2007, Ohio EPA issued a four hundred sixty (460) page draft of the PSD Permit. By mandate of Ohio's General Assembly, Ohio EPA cannot issue a PSD Permit without first determining that the PSD Permit will address and require the applicant to comply with all source specific applicable Ohio air pollution control laws and regulations. R.C. 3704; O.A.C. 3745-31. AMP-Ohio agrees with this position, as does the Activists Groups' expert Mr. Furman:

Q: And you understand, do you not, that the Ohio EPA will issue a final permit and that final permit will be subject to the legal procedures under Ohio law...

A: Yes.

Tr. I, p. 32.

It is critical to note that the Activist Groups failed to present any expert testimony and/or evidence that proves CO₂ must be controlled, by law, from AMPGS. To the contrary, Mr. Furman admitted: "I don't know if there are any regulatory requirements in Ohio for CO₂ emissions." Tr. I, p. 98. Although the Activist Groups had significant opportunity to retain an expert to testify as to this alleged issue, it failed to present a single, credible, admissible expert or piece of evidence. Therefore, the Activist Groups must be precluded from continuing their baseless assertions.

Randy Meyer, AMP-Ohio's Director of Environmental Affairs, testified in support of AMP-Ohio's AMPGS Certificate Application. Mr. Meyer was presented to Intervenors for cross-examination. Interestingly, neither the Activist Groups nor Young asked Mr. Meyer a single question about if or how AMP-Ohio included CO₂ in its PSD Permit application for AMPGS. *See, generally, Tr. II, pp. 77-109.* While the Activist Groups did seek to elicit some irrelevant generalized global warming thoughts from Mr. Meyer, never once did anyone ask a specific question about either R.C. 3704 or AMP-Ohio's pending PSD Permit application or if Mr. Meyer saw/considered any connection between Ohio law, the AMPGS PSD Permit application and CO₂. Not a single question, despite the fact that Mr. Meyer clearly testified that: "we addressed it [CO₂] in the air permit, that it was an item that we considered, and that's why the Powerspan scrubber was included." Tr. II, p. 117.

Jon Pawley, OPSB Staff's expert witness, was also presented to the Intervenors for cross-examination. Again, no one asked Mr. Pawley his opinion on whether or not CO₂ is somehow tied to R.C. 3704. Activist Groups did attempt to introduce vague climate change materials; however, this clearly irrelevant presentation was quickly excluded as evidence by the ALJ.

Simply put, Intervenor has failed to present any evidence contradicting AMP-Ohio and OBSB Staff testimony regarding required compliance with the applicable Ohio environmental statutes and regulations. Thus, for the reasons set forth above, the Board should find that AMPGS will comply with all applicable environmental law and regulation.

F. AMPGS will Serve the Public Interest, Convenience and Necessity as Set Forth in Section 4906.10(A)(6), Revised Code.

As explained in Section I above, municipalities are not required to make a statutory showing of public interest, convenience and necessity as such action would “constitute a direct and substantial interference with the city’s home rule authority.” Columbus at 440. Without waiving this constitutional home rule authority right, AMP-Ohio, in good faith, has also presented evidence to demonstrate that, in the event that OSPB intends to consider this factor, AMPGS will serve the public interest, convenience and necessity.⁵

AMP-Ohio’s AMPGS Certificate Application includes three sections, Financial Data, Technical Data and Social and Ecological Data, that summarize AMP-Ohio’s extensive studies, evaluations and considerations of social, economic, system and other potential impacts. In addition, the clear, critical need for AMPGS, as set forth in Section II(A), must also be considered as a key factor here. Further, AMP-Ohio witness Mr. Kiesewetter supported the data contained in AMP-Ohio’s Certification Application:

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.

AMP-Ohio Exhibit 3, Kiesewetter Q/A 26.

⁵ The demonstrated need for AMPGS discussed *supra* at pp. 13-22 clearly shows the necessity for this project.

And, the OPSB Staff concluded: “the Staff recommends that the Board find that the proposed facility will serve the public interest, convenience and necessity.” OPSB Staff Exhibit 1, pp. 47-54.

While Activist Groups did claim that AMPGS would not serve the public interest, convenience and necessity, the Intervenor did not present any testimony or evidence refuting the information contained in the AMPGS Certificate Application nor did Intervenor question Mr. Kiesewetter or Mr. Pawley regarding their respective testimony on this issue.

For the reasons set forth above, the Board should find that AMPGS will serve the public interest, convenience and necessity.

G. AMPGS will Not Impact Any Existing Agricultural District.

Section 4906.10(A)(7) states, if a proposed major utility facility is located on land in an existing agricultural district established under Chapter 929, then impacts on the land need to be considered. AMPGS will be located in Letart Township, Meigs County, Ohio. The land on which AMPGS will be located is not a Chapter 929 “existing agricultural district,” thus, AMP-Ohio has complied with this requirement. AMP-Ohio Exhibit 2, Meyer Q/A 33. See also Staff Exhibit 1, p. 55.

H. AMPGS Incorporates Maximum Feasible Water Conservation Practices as Set Forth in Section 4906.10(A)(8), Revised Code.

Section 4906.10(A)(8) requires a demonstration that the facility incorporates maximum feasible water conservation practices, considering available technology and the nature and economics of the various alternatives. AMP-Ohio has demonstrated, both by the AMPGS Certificate Application and testimony, that AMPGS meets this requirement. AMPGS Certificate Application, Technical Data and Environmental Data Sections; Exhibit 2, Meyer Q/A 34, 35.

Mr. Meyer stated that AMPGS was designed to incorporate maximum feasible water conservation practices, considering available technology and the nature and economics of the various alternatives; this design consists of “the cycling of cooling water through the cooling cells five times. The anti-degradation studies in our NPDES permit application demonstrate this approach minimizes degradation to the Ohio River at a reasonable cost.” Exhibit 2, Meyer Q/A 34, 35. An anti-degradation analysis must be performed prior to receiving an NPDES permit from Ohio EPA pursuant to Ohio law under the umbrella of the Clean Water Act, Section 401. OAC 3745-1-05. Mr. Meyer went on to explain AMP-Ohio’s anti-degradation process:

we are required to go through an anti-degradation analysis that essentially forces us to look at other alternatives. For example, for the water intake, we looked at options for essentially not withdrawing water. We look at options for a zero discharge and all kinds of combinations in between, and we evaluated the impacts to the environment within the context of those and costs and technological feasibility. Tr. II, pp. 117-118.

It is clear from the testimony, record and Ohio EPA requirements for the NPDES permit that AMP-Ohio undertook a significant review of potential water conservation options (which include, by Ohio EPA requirement, an evaluation of available technologies, options and costs) before selecting its technologies and processes, designed to conserve water to the maximum extent feasible.

The OPSB Staff Report draws the same conclusion and, as such, recommends that the Board make a finding that AMPGS will comply with Section 4906.10(A)(8). OPSB Staff Exhibit 1, p. 56.

While the Activist Groups have alleged that AMP-Ohio failed to comply with this requirement, it is Activist Groups who failed to present any evidence to the contrary. In support of its position, Activist Groups presented Mr. Furman, who had absolutely no knowledge of AMP-Ohio’s water conservation efforts for AMPGS. Tr. I, pp. 99-100. Mr. Furman

acknowledged that: (1) he has not reviewed the NPDES permit application for AMPGS (which includes the anti-degradation analysis); (2) and that he does not know the flow of the Ohio River at the AMPGS site. *Id.*

In fact, Furman conceded that he only knew one generalized piece of information related to water:

Q: The only thing you have concluded, have you not, is that AMPGS, in your estimation, would use more water than an IGCC?

A: Correct.

Tr. I, p. 99.

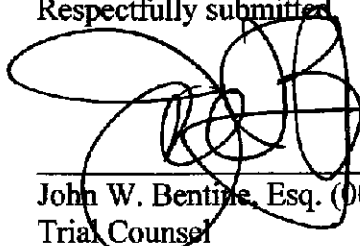
Mr. Furman did not present any specific information, data, cost estimates, or Ohio anti-degradation information regarding AMPGS as compared to another power generation base load technology. As such, his testimony on this issue has no probative value.

The standard set forth in 4906.10(A)(8) does not require at a comparison of two totally different, distinct power generation options (such as PC versus IGCC). Rather the standard requires AMP-Ohio to assure that it has fully considered available water conservation technologies and practices and has implemented the maximum feasible water conservation practices, once the nature and the economics of the various alternatives are considered. AMP-Ohio has done so.

CONCLUSION

For the reasons set forth above, AMP-Ohio urges the ALJ and the Board to issue an Opinion, Order and Certificate determining that AMP-Ohio has met all the requirements of Section 4906.10, Revised Code, and, as such, issue a Certificate to AMP-Ohio for AMPGS.

Respectfully submitted,

A handwritten signature in black ink, appearing to be "John W. Bentine", is written over a horizontal line. The signature is stylized with loops and a long horizontal stroke extending to the left.

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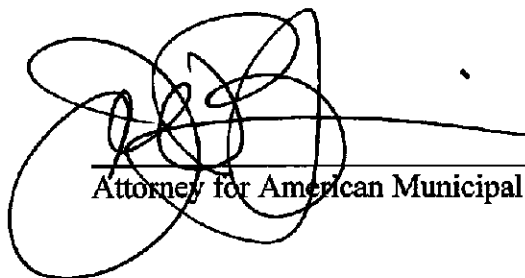
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CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing American Municipal Power-Ohio, Inc.'s Post Hearing Brief for Case No. 06-1358-EL-BGN was served upon the following persons via electronic mail and/or via postage prepaid U.S. Mail on January 28, 2008:



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