

U.S. HOUSE SUBCOMMITTEE ON ENERGY AND POWER

HEARING ON *AMERICAN ENERGY SECURITY AND INNOVATION: THE ROLE OF A DIVERSE ELECTRICITY GENERATION PORTFOLIO*

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**WRITTEN TESTIMONY OF
MARC S. GERKEN, PE, CEO/PRESIDENT,
AMERICAN MUNICIPAL POWER, INC. (AMP)**

SUMMARY POINTS

- Electric sector fuel diversity is important to our nation's energy security, as well as to maintaining a supply of affordable, reliable electricity to power our homes, businesses and factories.
- AMP has embraced a diverse resource portfolio with a balanced approach to fossil and renewable technologies and has considerable experience in siting and permitting of various generation technologies.
- Hydropower plays an important role in AMP's efforts, and we are encouraged by the increasing recognition by policymakers of the untapped potential for new and enhanced hydropower development in the United States.
- To facilitate development and to ensure that new resources of all types can economically and timely be brought online, it's important that regulatory processes be streamlined to eliminate redundancies and provide developers and investors with added certainty.

Good morning, Chairman Whitfield, Ranking Member Rush and distinguished members of the Subcommittee. My name is Marc Gerken and I'm the Chief Executive Officer of American Municipal Power, Inc. (AMP). I'm pleased to have the opportunity to appear before you this morning to discuss the importance of electric sector fuel diversity. My oral remarks will focus on the critical role played by hydropower generation.

While I am appearing on behalf of AMP, I currently serve on the National Hydropower Association Board of Directors and as Co-Chair of the NHA CEO Council.

AMP is currently constructing four hydropower projects designed to further diversity our generation portfolio. These projects, which total more than 300 megawatts (MW) and \$1.6 billion in investment, represent the largest development of new run-of-the-river hydropower in the United States today, and will join two AMP member-owned operating hydropower projects on the Ohio River. An additional 48 MW hydropower project on the Ohio River is in the licensing process.

Our projects under construction are new run-of-the-river facilities at four existing US Army Corps of Engineers locks and dams along the Ohio River in Kentucky and West Virginia. Two of these are the Smithland project in Chairman Whitfield's district, where we were honored that the Chairman offered remarks at our groundbreaking ceremony, and the Willow Island project in Representative McKinley's district. The power from these projects once online will go to benefit the AMP member municipal electric customers in districts of

dozens of members of Congress, including Representatives Griffiths, Latta and McKinley. Importantly, AMP's projects are resulting in more than 1,200 construction jobs and contracts for vendors from at least 12 states.

As I will explain, our hydropower projects are part of AMP's "all of the above" energy strategy, which embodies the importance of fuel diversity and includes investments in fossil and renewable generation, as well as energy efficiency.

AMP, OUR BUSINESS MODEL AND EMBRACE OF A DIVERSE PORTFOLIO

AMP is the wholesale power supplier and services provider for 130 municipal electric entities in seven states (Ohio, Pennsylvania, Michigan, Virginia, Kentucky, West Virginia and Delaware). AMP is based in Ohio and has more than 150 employees at its headquarters and generating facilities. The organization is governed by a 20-member Board of Trustees, comprised of member community officials.

AMP's mission is to develop, manage and supply diverse, competitively priced, reliable wholesale energy to public power members through strategic partnerships, member-focused relationships and a diversified power supply resource mix. Collectively, AMP members serve more than 625,000 retail customers and had a non-coincident system peak of 3,494 MW in 2012. Last year, the organization sold 12.5 million MWh of energy, with power sales revenue of \$775 million and total assets of more than \$5.5 billion. In addition to power supply, AMP offers a variety of services to its members to assist in their service to their customers, including: engineering, financial, environmental, sustainability, generation operations, legal, mutual aid coordination, safety training and regulatory support.

Starting about nine years ago and with the desire of our members to better forecast their wholesale power costs, AMP engaged the nationally recognized firm of RW Beck (now SAIC) to develop strategic long-term power resource plans for each of our members. Those plans are updated periodically to reflect changes in load forecasts, market projections, new power supply contracts, member project subscriptions (including energy efficiency), and optimization of new generation resource options. Our members use this information as part of their local decision-making regarding their long-term power supply planning with respect to purchase power agreements and generation project investments. One key component in our ability to undertake our generation asset investments is that our members take a long-term planning view and are not focused on a shorter-term, quarterly profit model.

With respect to the AMP generation projects, we offer our members the opportunity to subscribe to each project, providing them with an independent feasibility study, beneficial use analysis and market projection. Members who choose to participate in a project do so only after affirmative action by their local governing board and execution of a take-or-pay power sales contract. Our projects move forward if we achieve the critical mass of AMP member participation required. When projects advance, a committee representing our participating member communities is formed to govern major project decisions.

AMP finances our projects using a mix of tax-exempt and taxable bonds. Since 2000, all AMP construction project financing ratings have been in the "A" category and AMP has maintained an A1 entity rating from Moody's (the only agency to offer such a rating). Because of the importance of tax-exempt financing to our infrastructure projects, we have been working in tandem with other state and local

government groups to protect this important mechanism in the context of congressional tax reform.

With respect to our mix of generation resources, we have long used the term "diversified" to describe our portfolio. Our philosophy is not to place all of our eggs in one basket, but to layer our resource portfolio to include slices of fossil fuel assets, renewable assets, purchase power contracts and energy efficiency so that our members can blend costs and risks.

AMP's resource portfolio includes owned, operated and purchased output from natural gas, coal, hydropower, wind, solar, diesel and landfill gas generating facilities, as well as strategic wholesale market purchases and a robust energy efficiency program. AMP truly embodies an "all of the above" energy strategy. Our projects represent fuel, technology and geographic diversity, and will yield a long-term, risk-balanced portfolio with predictable rates. We firmly believe this is the best approach.

More detailed information about AMP's generation projects - both operating and under construction - appears on our website.

In addition to the hydroelectric projects previously mentioned, AMP has the following projects under development:

- Options for a nearly 900-acre greenfield site in Meigs County, Ohio, that was to be the location of the coal-fired American Municipal Power Generating Station. The project was fully permitted, but cancelled as a coal-fired project in the early stages of construction after an unexpected 37 percent increase in construction costs.

- In late 2012, AMP entered into a memorandum of understanding with FirstEnergy Corp. to develop an 873 MW (summer) gas combustion turbine project on the premises of FirstEnergy's former Eastlake coal plant.
- The potential for substantial utility-scale solar deployments located behind the meter in our member communities. Our first solar deployment took place in Napoleon, Ohio in 2012 and at 3.54 MW is one of the largest projects in Ohio to date.

AMP also owns and/or manages existing generating projects on behalf of its participating member systems, including:

- A 23.3 percent ownership stake (368 MW) in the Prairie State Energy Campus, a 1,600 MW state-of-the-art supercritical pulverized coal plant and mining operation in southern Illinois that came online in 2012.
- A 707 MW (fired) natural gas combined cycle facility in Fremont, Ohio, that AMP purchased from FirstEnergy. The project became commercially available in early 2012.
- The run-of-the-river Belleville Hydroelectric Plant, located on the West Virginia side of the Ohio River at the Belleville Locks and Dam, which provides 42 MW of renewable energy to 42 Ohio participating municipal electric communities and is backed up by local distributed generation.
- AMP is partnering with its member community of Hamilton, Ohio, on one of our four hydropower projects under construction. As part of that agreement, upon commercial operation of the new

project, AMP will obtain a 48.6 percent share of the existing 72 MW Greenup Hydro Project currently owned by Hamilton on the Ohio River.

- A 7.2 MW wind power project located at the Wood County Landfill near Bowling Green, Ohio, which began producing power in November 2003, and was the first utility-size wind farm in the state. AMP members also have contracted for 52.16 MW of output from an Iberdrola wind farm in northwestern Ohio.
- Contracts for purchases from landfill gas generating facilities, which provide 24 MW of power to participating member communities. Located at landfills in the northeastern section of the state, the projects use recovered methane gas as fuel. The contract was recently expanded to provide 57 MW of power from 2012-2021.
- Distributed natural gas and diesel generation facilities that provide up to 138.65 MW of power for use during peak times by 36 participating communities.
- A \$26 million energy efficiency program called Efficiency Smart in which 49 AMP member systems have enrolled. We view energy efficiency as an important component of resource planning. The program, which to date has saved more than 60,000 MWh of energy, has been well-received by our members and their customers.

AMP has been active as a customer in the wholesale electric market since the 1970s, and traditionally, AMP members had relied heavily on the wholesale market - with nearly 70 percent of our members' base

load energy needs and 90 percent of their intermediate needs being met with wholesale electricity purchases. In an effort to insulate our members from market volatility and uncertainty, and to ensure a more predictable supply of competitively priced power, AMP has undertaken an aggressive generation asset development effort with new resources in four states, including Ohio. On average, these projects will reduce our members' market exposure to about 30 percent of their portfolio and will result in a portfolio that is 20 percent renewable in 2015.

Attachment A to this document shows wholesale energy prices from 2003 into 2012; this illustrates the wholesale market volatility that drove AMP members to want to diversify their portfolio and invest in more owned generating capacity. Wholesale electric prices have been low for the past few years as a result of both low natural gas prices and the economic downturn - the latter of which has resulted in many utilities having excess power. While the natural gas boom bodes well for natural gas as the electric generating resource choice for the foreseeable future, there are challenges of relying too heavily on any one resource, including the issues that this Subcommittee is reviewing - electric/natural gas coordination, the need for additional natural gas pipeline infrastructure, competing natural gas uses, and the reliability concerns associated with the closure of many older coal plants due to US Environmental Protection Agency rules.

AMP is unique in our resource planning approach because we are able to take a longer view than utilities that are subject to quarterly profit reports. Our member city, village and borough council members have been willing to invest in some projects that will be above market in the early years because of the overall benefits in the long term. Our development of hydropower generation is a good example -

the price of power from these facilities will be above market in the early years, competitive in the middle years and below market in the later years once the debt service is paid off. However, when you take into account the many positive attributes associated with hydropower, the value of the investment is clear even in the early years.

THE UNTAPPED POTENTIAL OF HYDROPOWER

Run-of-the-river hydropower projects are capital intensive, but have many very attractive qualities, including:

- A long life span;
- No emissions (a sustainable resource and the leading form of renewable energy in the country);
- The ability to provide base load power (unlike many other renewable resources), because we can forecast the output a day ahead;
- No fuel risk (meaning no hedging exposure, no counterparty risk and no transportation risk);
- No waste stream;
- Low operation and maintenance costs;
- Reliability;
- Affordability (taking into account the full project lifetime, fuel costs and operation and maintenance, hydropower has the lowest levelized cost of electricity of any resource);
- Predictable rates; and
- Limited regulatory risk (once operating)

We've had a very positive experience with our Belleville Hydro Project operating since late 1990s. The project has bested its feasibility study estimates and been recognized with national safety

awards. Hydropower does have limitations, particularly in our region where the number of existing dams and the generation capacity are finite; however, more can still be done with hydropower even in our region, and the figures regarding untapped hydropower nationally are staggering.

Of the more than 80,000 dams in the United States, just three percent (roughly 2,500) provide the more than 78 gigawatts (GW) of hydropower. While many non-powered dams are, for various reasons, not appropriate candidates for power additions, a significant number are well suited for the addition of hydropower assets. An April 2012 report by the Department of Energy's Oak Ridge National Lab found that adding power to the nation's non-powered dams has the potential to add more than 12 GW of new capacity (representing a 15 percent increase of hydropower capacity and nearly 10 percent increase of the total current renewable capacity). The majority of the potential is concentrated at just 100 non-powered dams, which could add 8 GW of capacity. The top ten facilities could add up to 3 GW of new hydropower; all of the top ten, as well as 48 of the 50 top non-powered dams are USACE facilities.

The National Hydropower Association worked with Navigant to conduct a jobs study that shows 230,000-700,000 jobs could be created through the development of new hydropower. More information about the NHA study can be found on their website.

In addition to new development, existing hydropower resources can play an important role in efficient operation of the grid. Hydropower, like natural gas, can be a good partner for balancing resources like wind and solar, and can provide ancillary services such as frequency control, regulation, load following, spinning reserve and supplemental reserve. Natural gas and some hydropower

resources have the capability to come online quickly and provide significant rotating mass (inertia). Hydro pumped storage stands alone as the only widely implemented grid-scale energy storage technology. The benefits to the grid are considerable, including deferral or avoidance of costly transmission upgrades at a time when the North American Electric Reliability Council has estimated that 27 percent of grid upgrades are related to integrating wind and solar resources.

In addition to new hydropower at non-powered existing dams, hydropower growth capacity can be achieved by maximizing existing infrastructure, including: modernizing facilities to increase their capacity; harnessing water power potential at irrigation canals, conduits and other constructed waterways, developing pump storage; and investing in emerging hydropower technologies.

CHALLENGES TO GENERATION DEVELOPMENT AND ACHIEVING/ MAINTAINING FUEL DIVERSITY

The siting and permitting processes for any new generating asset are not for the faint of heart. As a developer, you must be passionate about the benefits that will result from your project, have supportive participants and be open to working with various stakeholders. You also must be prepared to defend against detractors, which could include litigious environmental activists or local property owners.

As a developer, you have many challenges and opportunities. One of your key challenges is to keep costs down and stay on schedule - escalation can kill even the best project, and as the old adage goes "time is money." The regulatory process plays a critical role in a

project schedule and ultimately can drive whether or not a project comes to fruition.

It's important to note that most developers don't enter the regulatory process with unreasonable expectations - we understand the need to balance environmental protection with economic development, and that there will be some bumps along the road. Unfortunately, regulatory timelines don't match up efficiently across the numerous required permits, various agencies and different jurisdictions - it's not an A to Z process. Across our various projects, AMP has worked with dozens of different state and federal regulatory bodies throughout the air, water, waste, transmission and siting permitting processes. Attachment B is a listing of the various agencies and approvals that AMP has worked with during our permitting for both fossil and hydro resources. More detail on the hydro process appears later in this section.

Developers must carefully time the required modeling, studies and site assessments when preparing their regulatory schedules as some studies have seasonal or weather limitations that must be taken into account. For instance, there are only limited months of the year when you can perform certain tree clearing work in our region because of the migratory habits of the Indiana bat.

Based on our experience, the timeframe from inception to commercial operation for new natural gas combined cycle generation is four to five years - with approximately two years of that dedicated to required regulatory permitting approvals, and the remainder to siting, contract and equipment vendor negotiation, construction and commissioning. Coal and nuclear developments have a much longer timeframe. And, while the development timeframe for wind and solar resources is shorter, those projects are not necessarily "easier"

compared to fossil generation - you still must deal with "NIMBYism" and multi-faceted approval processes that can involve both state and federal agencies.

Of the regulatory processes, we've found the critical path permit across many of our projects to be the PJM interconnection process. Many developers are so focused on the environmental permits that they fail to remember the importance of the transmission side of the equation in areas served by regional transmission organizations (RTO). PJM interconnection used to have a flowchart posted on their website that reflected an anticipated 12-15 month process from entering the queue to getting through the three study phases to the point of executing agreements. That appears to have been updated to reflect a 24 month timeframe, which in our experience, is more typical. Both the transmission owner and PJM have responsibilities to perform during the study phase. One challenge is that projects that have very little chance of ultimate development remain in the interconnection queue, slowing down the process for viable projects. PJM officials understand that the process needs improvement and have been working to make some changes.

Additionally, as we look to add natural gas generating facilities at either greenfield or existing coal plant sites, we are finding gas pipeline infrastructure to be a critical issue. In many cases, dozens of miles of new pipeline are required, along with the siting and permitting challenges that accompany the plant development.

Despite hydropower's many positive attributes, the process from inception to construction for a new facility can be challenging at best.

Hydropower projects at non-powered federal dams require a license from the Federal Energy Regulatory Commission (FERC) prior to initiating construction. AMP's experience has been with projects at USACE and not Bureau of Reclamation facilities. FERC issues an Environmental Assessment prior to issuing a final license. During the FERC licensing process, the USACE serves as a key stakeholder since they are an agency with mandatory conditioning authority under Section 4(e) of the Federal Power Act. The USACE uses this authority to influence the direction and extent of license articles that FERC includes in its license order. Through a Memorandum of Understanding with the USACE, FERC includes a series of license articles that were created to help protect the USACE navigation interests established in the Rivers and Harbors Act of 1899. The articles also include a provision that the licensee provide power for the USACE dam for the term of the license.

In addition, after the FERC National Environmental Policy Act (NEPA) process has been complete, the USACE has several other regulatory approval processes an applicant must go through to get final approval to start construction of a hydropower project. One of these regulatory processes involves Section 10 of the Rivers and Harbors Act, which prohibits unauthorized obstruction or alteration of any navigable water without a permit from the USACE. The USACE retains its post licensing authority under Section 404 of the Clean Water Act, which regulates the discharge of dredged, excavated, or fill material in wetlands, streams, rivers, and other U.S. waters. In general, to obtain what is termed the "404 Permit", applicants must demonstrate that the discharge of dredged or fill material will not significantly degrade the nation's waters and there are no practicable alternatives less damaging to the aquatic environment.

Prior to issuance of the 404 Permit, a "408 Approval" must be provided by the USACE. The intent of this approval is to protect government property and ensure the facilities are not compromised by other non-federal developments. The Section 408 approval is granted by the USACE once they complete their evaluation of a project, which involves reviews of the technical aspects of a project specifically the water retaining structures and their interface with the existing USACE facilities, as well as completion of a physical hydraulic model to verify that a project will not have any detrimental effects on navigation into or out of the locks. The sign-off for the 408 Approval is initiated at the District level of the USACE, who owns and operates the locks and dam, but also requires approval from the Division and ultimately from the Director of Civil Works from the USACE Headquarters. As such, for planning purposes, it is assumed that the issuance of the 408 Approval and 404 Permit take anywhere from 12 months to 24 months after issuance of the FERC license.

In addition to the FERC license and the USACE's Section 408 Approval/404 Permit, the Environmental Protection Agency (EPA) through the states involved require a 401 Water Quality Permit under the Clean Water Act. The intent of the 401 Permit is to provide for the protection of the physical, chemical, and biological integrity of waters from federal permits

AMP was the first hydropower developer ever required to obtain a 408 Permit in addition to the 404 Permit. Unfortunately, this extended our permitting timeframe considerably for each of our projects currently under construction. Attachment C to this document illustrates the permitting timeframes experienced for our four projects currently under construction.

A developer must have significant capital (millions of dollars in many cases) to cover the cost of the hydropower project through permitting, including: design, subsurface core drilling, hydraulic model studies, design and initial payments for equipment with long lead times. Long-term financing is unlikely until a developer has all of the required permits in hand, which can drive when you access the market and the cost of money.

So what can be done to improve the process? AMP is pleased that bipartisan legislation, The Hydropower Regulatory Efficiency Act sponsored by Representative McMorris Rodgers, has been favorably considered in the House and would help improve the efficiency of the regulatory process for smaller hydropower projects and require study of additional regulatory improvements. Hydropower interests continue to work to promote further reforms to help streamline the licensing and permitting processes detailed below without sacrificing environmental quality. We look forward to working with Members of Congress on these efforts.

ADDITIONAL CONSIDERATIONS

For the past decade, the electric industry has been undergoing unparalleled changes. The future holds both significant challenges and opportunities for utilities, policymakers and customers.

Much promise exists with the significant positive impact of shale gas and combined heat and power, as well as technologies that could drive change in our industry such as energy storage, carbon capture and sequestration, modular nuclear units, biofuels and fuel cells.

However, timing is critical and the sequencing of events causes some concern. As the economy rebounds, will we be ready to meet energy

needs - particularly in light of the anticipated base load plant retirements as a result of the myriad of USEPA rules and economic pressures? Will we have adequate time to site, permit and construct new generation, transmission and natural gas transportation infrastructure? Do the current RTO market structures provide an incentive or disincentive to development in those regions of the country?

As Subcommittee members know from your previous hearings, electric utility decisions to maintain or add needed fossil base load generation capacity are being exacerbated by the breadth and complexity of the numerous rules that the USEPA has put forth to regulate electric generating units. Combined, the Utility MACT Rule, the Clean Air Transport Rule (CATR, finalized as the Cross-State Air Pollution Rule and subsequently vacated by the court), the proposal to regulate coal ash as hazardous under the Resource Conservation and Recovery Act (Coal Ash Rule), and the Cooling Water Intake Structures Rule under section 316(b) of the Clean Water Act represent the bulk of rules specifically targeting electric utilities. Coupled with New Source Performance Standards (NSPS) for greenhouse gases and criteria pollutants, new National Ambient Air Quality Standards (NAAQS) for criteria pollutants, and National Emission Standards for Hazardous Air Pollutants (NESHAP) for industrial, commercial, and industrial (ICI) boilers and reciprocating internal combustion engines (RICE units), fossil-fuel-fired electric utilities (particularly coal-fired units) are facing competing and potentially conflicting environmental requirements within the next five to 10 years. AMP has filed comments on most of these rules with the USEPA, expressing the concerns outlined in this testimony; our filings appear on our website.

Areas of the country, like ours, that have traditionally relied on the use of coal to supply essential base load power have a significant stake in the outcome. AMP is cognizant of the potential impacts of forthcoming environmental regulations on the wholesale market, as well as potential impacts on regional system reliability. The various USEPA rules will have a disproportionate impact on coal-fired electric generation units, and thus on AMP and our members that rely on market purchases from those same coal units for a portion of their electricity needs.

In addition to our concerns about federal environmental regulations, we closely track developments at the Federal Energy Regulatory Commission (FERC) and PJM Interconnection.

Under the Federal Power Act (FPA), FERC is responsible for ensuring that wholesale electric rates are "just and reasonable." Historically, FERC met this statutory requirement through active, cost-of-service rate regulation. In 1995, however, FERC embarked on a long, evolutionary path designed to introduce greater competition into the wholesale electric generation markets. In short, FERC believed that market forces could better serve the public interest and that customers would see lower prices, better service, and innovation.

This market evolution included the creation of RTOs, such as PJM, which were initially intended to provide more efficient and better coordinated transmission system operations and reliability functions. The original core objective of these RTOs was to provide non-discriminatory, open-access transmission service for electric generation transactions – by requiring that owners of transmission lines not give preference or deny the use of their transmission lines to other sellers and purchasers of

electricity. To carry out this responsibility, RTOs assumed functional control, but not ownership, of the high-voltage transmission system.

However, the evolution of RTOs did not stop there. Today, RTOs also play a major role in determining the day-to-day price of electric energy sold in their regions through several market auctions. Electric generators bid available generation into these market auctions for specific time periods, and the RTOs dispatch the generators from the lowest to highest bid - but paying all generators at the highest bid price. In essence, the last increment of demand sets the clearing price. Many RTOs also control a capacity market as well.

Consequently, RTOs can essentially determine which electric generation units operate, when they operate, and the price that the power from those units should command as a commodity in the wholesale power market. RTOs have also developed a complex menu of market products to essentially disaggregate the electricity commodity into its various components, including energy, capacity, and a variety of ancillary services. Thus, RTOs are playing an increasing role in determining the strategies for individual electric generating units.

In our experience, the higher prices paid by customers in RTO markets have largely failed to date to incent specific desired behaviors - the building of needed new generation and transmission resources. Under the current RTO market structure, there is little incentive for for-profit entities to add new generation to the grid, which would result in lower prices paid to existing generation providers for their products and services.

The following are some of the key concerns we have about the RTO markets:

- Short-term markets don't lend themselves to long-term planning. For instance, in PJM, the planning horizon for capacity auctions is three years for very long-term assets;
- The market rules are under a near constant state of change;
- The participation of financial entities in the markets has resulted in the markets being about financial concerns rather than the provision of a physical commodity;
- Market rates are no longer based on costs. FERC has instead granted market-based rate authority to many sellers of wholesale electric power partially based on the theoretical competition occurring in RTO markets and subject only to reporting and limited oversight requirements;
- Markets utilize a single, uniform clearing-price auction, where the highest price offered is paid to all generators selling into the market - even those selling power from low-cost generation;
- Lack of sufficient oversight; and
- Limited transparency with respect to the actual costs of electricity generators, electric sale prices, and other essential information needed to determine if the markets are truly competitive.

While the market impacts noted above are not uniform nationwide, they are critical drivers in the region in which AMP operates and we believe that these are important topics for the Subcommittee to examine.

CONCLUSION

In closing, I want to stress my strong belief that fuel diversity is paramount to our nation's energy security, as well as to maintaining a supply of affordable, reliable electricity to power our homes, businesses and factories. I commend the Subcommittee for reviewing this topic.

As outlined in my testimony, AMP has embraced a diverse resource portfolio with a balanced approach to fossil and renewable technologies.

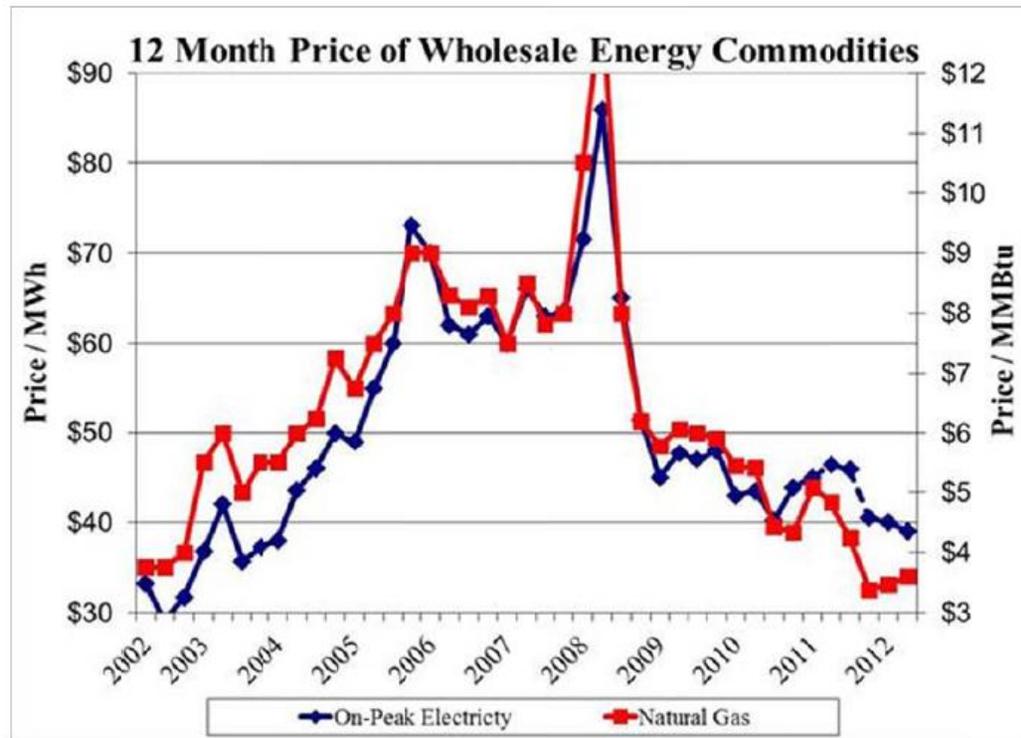
Hydropower plays an important role in AMP's efforts, and we are encouraged by the increasing recognition by policymakers of the untapped potential for new and enhanced hydropower development in the United States.

To facilitate this development and to ensure that new resources of all types can economically and timely be brought online, it's important that regulatory processes be streamlined to eliminate redundancies and provide developers and investors with added certainty.

Thank you again for the opportunity to appear before you today; I would be happy to respond to any questions.

Attachment A

Market Prices



Attachment B

LIST OF PERMITS/APPROVAL/LICENSES/EVALUATIONS--FOSSIL

OPSB Certificate	Ohio Power Siting	Certificates for 50MW+ projects and T-line
Section 404/10	Army Corps	Impacts to jurisdictional water
Section 401	OEPA	Impacts to wetlands/streams
Permit to Install-water	OEPA	Build source(s) of water discharge
Permit to Install-sanitary	OEPA	On-site sanitary water discharge
Water withdrawal registration	ODNR	Withdrawal of water
NPDES	EPA/OEPA	Discharge of industrial water
Stormwater Permit	OEPA	Manage site/construction stormwater
Permit to Install-Air	EPA/OEPA	Installation of air emission source(s)
Title V Operating-Air	EPA/OEPA	Operation of air emission source(s)
Solid Waste Permit to Install	OEPA	Management of solid waste (ash etc)
Hazardous Waste Permit	EPA/OEPA	Management of Haz. Waste
Historic Preservation	SHPO	Evaluation of cultural/historic resources
Endangered Species Eval.	ODNR/USF&W	Evaluation of endangered/threatened species
License	FAA	Stack height approval for aviation
ODOT Permit	ODOT	Roadway considerations/crossings

LIST OF PERMITS/APPROVAL/LICENSES/EVALUATIONS--HYDRO

OPSB Certificate	Ohio Power Siting	Certificates for 50MW+ projects and T-line
Preliminary Permit	FERC	Permit to prepare and submit a License App.
License	FERC	Comprehensive energy project license
NEPA	EPA	Compliance with statute on federal projects
Section 404/10	Army Corps	Impacts to jurisdictional water
Section 408	Army Corps	Permission to impair federal structure
Section 401	OEPA	Impacts to wetlands/streams
Water withdrawal registration	ODNR	Withdrawal of water
NPDES	EPA/OEPA	Discharge of industrial water
Stormwater Permit	OEPA	Manage site/construction stormwater
Historic Preserv. Act	SHPO	Evaluation of cultural/historic resources
Endangered Species Eval.	ODNR/USF&W	Evaluation of endangered/threatened species
License	FAA	Transmission Tower approval for aviation
ODOT Permit	ODOT	Roadway considerations/crossings
Flood Impact Approval	FEMA	To insure no impacts to flood waters

OTHER REQUIRED/POTENTIAL CONSULTING AGENCIES

U.S Dept. of Agriculture-Forestry
National Park Service
U.S. Bureau of Land Management
Federal Emergency Management Agency
U.S. Geological Services
U.S. Department of Commerce

OTHER REQUIREMENT

Regional Transmission Organization Interconnection Process (more than 20 MW) – PJM or MISO in our region

Attachment C

Examples of Permitting Time Frames:

Project	404 Permit Application Date	404 / 408 Issuance Date	Duration from Application
Cannelton	April 11, 2008	May 1, 2009	1 year and 20 days
Smithland	April 11, 2008	October 30, 2009	1 year and 7 months
Willow Island	February 4, 2008	December 3, 2010	2 years and 9 months
Meldahl	December 15, 2008	April 13, 2010	1 Year and 4 months