

# Conservation Committee Report

Volume 10 Issue 8

By Jack Walters, ACSL Conservation Chair

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## The Conservation Pledge

I give my pledge as an  
American to save  
and faithfully defend from  
waste,  
the natural resources of my  
country;  
the soil, the water, the air,  
the minerals, the plant life and  
the wildlife.

This is my Pledge!

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## House GOP Policy Committee Hearing On Lifting Electric Rate Caps

Electric rate cap mitigation and energy conservation were the subjects of a House Republican Policy Committee hearing hosted by state Rep. Tom Quigley (R-Montgomery) and held at Montgomery County Community College in Pottstown.

Testimony was offered by representatives from Philadelphia Electric Company, Public Utility Corporation and BioChem Technology Inc. from King of Prussia.

"My staff has for several years been very proactive in trying to prepare for and educate the public about the removal of rate caps, some of which have already taken place," said Robert Powelson, commissioner of the PUC. "Independently,

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## DEP Announces Strategy for Using Federal Abandoned Mine Reclamation Funds

The Department of Environmental Protection announced this week it plans to direct the full amount allowed by the federal government to develop and operate mine drainage treatment systems that are needed to protect thousands of miles of streams, according to Environmental Protection Secretary Kathleen A. McGinty.

Secretary McGinty also said the Commonwealth has already established an account dedicated to finance the permanent maintenance costs for these treatment facilities and will commit additional funds annually. The department has already deposited \$2 million into the account and expects to contribute another \$2 million this year.

Pennsylvania is expected to receive up to \$1.5 billion over the next 15 years

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## House GOP Policy Committee Hearing On Lifting Electric Rate Caps (continued)

consumers can take several steps before the expiration of the caps that may help them control the size of their electric bills. Energy conservation is a key."

Powelson expressed disappointment over the recently passed state budget, which failed to include a PUC request for \$5 million to be spent on a statewide consumer education plan aimed at preparing the public for the expiration of rate caps. He hopes the General Assembly will take up the proposal during the upcoming fall session.

Powelson also referenced the need to further explore clean coal and nuclear technology, pointing out in particular Pennsylvania's failure to make progress in bringing more nuclear plants on line. He said the commission has evaluated states like Maryland and Texas that have gone through similar lifting of caps and is trying to avoid the mistakes made in these instances.

There has been a call for an extension of the rate caps. Lisa Crutchfield, senior vice president of Regulatory and External Affairs for PECO, testified as to the magnitude of the mistake such a move would be, citing the example of California's extension of caps in 2000-01.

"The [California] extension contributed to rolling brownouts and some blackouts, the bankruptcy of one of the state's utilities and the near bankruptcy of the other, higher electricity prices for consumers, and the public's loss of confidence in the state's governor," commented Crutchfield. "Moreover, a rate cap is unconstitutional, and utilities would be forced into lengthy and costly legal battles that could mean additional costs for customers."

She said the lifting of caps will result in competition among electric suppliers and mentioned the high number of utility companies that have flooded the market in Texas, resulting in lower prices for consumers.

Fifty percent of every Pennsylvania municipality's electrical energy is used to process wastewater, according to Allen Twiford, sales manager for BioChem Technology. He testified about his company's work in helping treatment plants maximize efficiency while cutting costs.

Copies of testimony should be posted on the House Republican Policy Committee website.

Source: PA Environment Digest

## Close the loop with compact fluorescents

The Home Depot®, the world's second-largest retailer, recently launched a national in-store, compact fluorescent light bulb recycling program at all 1,973 The Home Depot locations. The free program is the largest of its kind in the nation. Customers simply bring in any expired, unbroken compact fluorescents and give them to the store associate behind the returns desk. The Home Depot has been actively promoting compact fluorescents, selling more than 193 million to date. They use up to 75 percent less energy than an incandescent bulb, last longer, and cost less over time. Because they contain small amounts of mercury, recycling is the preferred path for disposal. According to the Environmental Protection Agency, they are a good choice for the environment. Buy them, use them, and recycle them! [Learn more](#) about The Home Depot's recycling initiative and other efforts to brighten the future.

Source: iConservePA

### Federal Abandoned Mine Reclamation Funds

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from the federal Abandoned Mine Lands Fund. That was reauthorized at the end of 2006. Acid mine drainage impairs 4,600 miles of rivers and streams in Pennsylvania and is one of the most widespread and expensive water pollution challenges we face," said Secretary McGinty. "The reauthorization of the Abandoned Mine Lands fund will allow us to support the outstanding efforts of local watershed groups to build new treatment facilities that will bring dead streams back to life, and it will also ensure that we have sufficient resources to fund the long-term operation, maintenance and replacement of new and existing treatment facilities unless special circumstances prevent us from doing so."

Pennsylvania's long-term plans for addressing abandoned mine problems are outlined in a position paper DEP released with its announcement.

The paper details how the state will allocate the estimated \$1.4 billion it expects to receive over the next 15 years as part of the 2006 reauthorization of the federal Abandoned Mine Lands fund. It also provides the framework for how the funds will be distributed through grants and construction contracts for the design, construction, operation, maintenance and replacement of facilities to treat mine discharges.

Under the reauthorization, Pennsylvania may commit up to 30 percent of its annual appropriation to treat abandoned mine drainage.

The process to decide the annual amount to be set aside for treatment of mine drainage will be open for public comment.

In preparing the paper, DEP conducted a series of town hall meetings with state and local elected officials, environmental and watershed groups, the mining industry, businesses, and economic development organizations to update the commonwealth's long-term mine reclamation goals to take full advantage of the anticipated funds.

"The need for continued funds to build mine drainage treatment facilities was a clear theme in the comments we received during our town hall meetings," said Secretary McGinty. "Beyond the obvious impacts on aquatic life, polluted streams cost the commonwealth millions of dollars in lost recreation and tourism opportunities and increase costs for industrial, commercial and residential water users.

"The reauthorization of the federal AML fund gives us a unique opportunity to ensure significant and long-term funding for the development, operation and replacement of mine drainage treatment facilities."

The Abandoned Mine Lands fund was created in 1977 and directs money to states to reclaim historic abandoned mines. The program is funded by a tax on the coal mining industry.

Pennsylvania is home to thousands of acidic discharges and seeps formed from a chemical reaction between air, water and coal in abandoned mines.

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**Federal Abandoned Mine Reclamation Funds**

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More than 250 passive treatment systems have been constructed with public funds to treat an estimated 36 billion gallons of acid mine drainage each year. Ongoing operation, maintenance and replacement costs vary depending on the volume of water and the severity of the chemical composition of each discharge.

However, Pennsylvania still has approximately 180,000 acres of unmarked mine openings, unstable cliffs, water-filled pits and abandoned equipment and buildings left over from when mining was largely unregulated prior to 1977.

More than 2 billion tons of waste coal sits in piles that dot the state's landscape, and some 4,600 miles of rivers and streams are polluted or degraded by acid mine drainage.

For more information, visit DEP's Abandoned Mines webpage .

Source: PA Environmental Digest

## Voluntary Conservation Agreements Protect Globally Significant Watershed

Three landowners along French Creek have permanently protected their property for future generations and improved the likelihood that one of the most biologically diverse streams in the northeastern United States will continue to thrive. They accomplished this by entering their land into voluntary conservation agreements with the Western Pennsylvania Conservancy (WPC).

A voluntary conservation agreement is a permanent deed restriction that limits future development of a property. These agreements are tailored to specific features of the property and the interests of the landowner. The voluntary conservation agreements, which are perpetual and used exclusively for conservation purposes, are held by a qualified conservation organization or public agency.



These three voluntary conservation agreements ensure that almost two miles of French Creek frontage will be permanently protected. Additionally, each voluntary conservation agreement provides special protection for 300 feet immediately adjacent to the creek. This area, called a riparian buffer, has been zoned as “Highest Protection” allowing no activity other than research, education and passive recreation (e.g. hiking, fishing, bird watching) in this area. Riparian buffers provide a variety of ecological services such as improving water quality by filtering runoff, protecting stream banks from eroding, keeping water cool by shading the stream, and by providing habitat for a variety of terrestrial and aquatic life important to these stream ecosystems.

“French Creek represents the very best of our region not only because of its exceptional water quality, but in the way like-minded organizations and individuals came together with a common goal that it remains that way,” said WPC Associate Vice President, Land Conservation and Stewardship, Greg Socha.

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## Voluntary Conservation Agreements Protect Globally Significant Watershed (continued)

"The permanent protection of three more tracts of land bordering French Creek is a win for all who care



about the watershed," said John Tautin, president of French Creek Valley Conservancy. "We are grateful to all of our partners who made it happen: the Western Pennsylvania Conservancy, The Nature Conservancy, the U.S. Fish and Wildlife Service, the Pennsylvania Game Commission the Pennsylvania Fish and Boat Commission, private donors, and especially the three caring landowners."

The voluntary conservation agreements prohibit subdivision, dredging of French Creek, and timbering within the highest protection area. The properties encompass portions of three counties and include:

47.8 acres in Erie County that hosts almost a mile of frontage along the West Branch of French Creek. The easement agreed to by landowners Jack and Patricia Pfadt protects bottomland and floodplain forests along the creek.

84 acres in Mercer County from landowner Steve Jackson includes one-fifth of a mile of frontage along French Creek. Three associated plant species found on this property are recognized by the Pennsylvania Natural Heritage Program as Communities of Special Conservation Concern and considered rare in Penn-

45 acres in Crawford County that fronts both French Creek and Mohawk Run and is adjacent to the Erie National Wildlife Refuge. The owners, Bob and Lesa Cranmer have also agreed to allow public access which includes a trail to the creek for canoe access, as well as parking and primitive camping.

"As a landowner I viewed the program as a way to 'give back' for all of the enjoyment I receive from our wonderful Pennsylvania landscape," said landowner Bob Cranmer. "It is also a vehicle through which I can do my part in passing on a clean, green, environment to my children and future generations. The French Creek watershed is an historic national treasure. I am proud to have helped preserve it, and aided others to enjoy it."

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## Voluntary Conservation Agreements Protect Globally Significant Watershed

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In addition to support from individual WPC donors, the project received funding from The Nature Conservancy, which has identified French Creek as "one of the last great places in the United States." Funding was provided by the US Fish and Wildlife Service through Landowner Incentive Program (LIP) grant I-1-1, administered jointly through the Pennsylvania Game Commission and Pennsylvania Fish and Boat Commission. LIP provides federal cost-share to acquire voluntary conservation agreements that protect habitats that host species of greatest conservation need, as identified in the Pennsylvania Fish and Boat Commission's Wildlife Action Plan. (<http://www.fish.state.pa.us/promo/grants/swg/00swg.htm>). In the French Creek Watershed this especially includes fish and mussels. This program is administered by the Pennsylvania Game Commission and the Pennsylvania Fish and Boat Commission.

A common interest in protecting one of the most important waterways in the northeast led to the creation in 2007 of the French Creek Joint Venture. The goal of the Joint Venture is to leverage the strengths of the three organizations, Western Pennsylvania Conservancy, French Creek Valley Conservancy and The Nature Conservancy, to work with willing private landowners to conserve key floodplain and riparian zones that provide protection for water quality and the many species that thrive in French Creek.

"We are proud to work with our partners and these conservation-minded landowners to protect such an important freshwater resource as French Creek," said The Nature Conservancy's Director of Conservation Operations, Todd Sampsell. "The Nature Conservancy works globally on the most important areas for biodiversity, and our work through the French Creek Joint Venture is a great example of how we can leverage local partnerships to dramatically increase the scope and pace of conservation over what could be accomplished by any individual organization."

For nearly 40 years, the Western Pennsylvania Conservancy has worked to conserve French Creek and its watershed, one of the most diverse streams in the northeastern U.S. and a globally significant watershed. In November 1969, WPC first protected a rich wetland harboring rare plants along Hubble Run known as Wattsburg Fen Natural Area. WPC continues to accomplish its goals through land purchases and voluntary conservation agreements with private landowners along the creek.

Source: Western Pennsylvania Conservancy

## Universities Begin Critical Turbine Systems Research

The U.S. Department of Energy announced the selection of four projects under the Office of Fossil Energy's University Turbine Systems Research (UTSR) Program. The projects will develop technologies for use in the new generation of advanced turbines that operate cleanly and efficiently when fueled with coal-derived synthesis gas and hydrogen fuels.

The overall goal of the Department of Energy's (DOE) Turbine Program is to provide high-efficiency, near-zero emissions and lower-cost turbines for coal-based stationary power systems. Developing turbine technology to operate on high hydrogen content (HHC) fuels derived from coal synthesis gas is critical to the development of advanced, near-zero-emission integrated gasification combined cycle (IGCC) power generation plants that separate and capture carbon dioxide (CO<sub>2</sub>).

Established in 1992, the UTSR Program has grown into a consortium of university, government and industry participants working together to make the most of university research for gas turbine energy systems. The program, managed by the National Energy Technology Laboratory, is now focused on advancing the technology base to enable development of advanced turbines in 21st-century energy plants.

The selected universities will direct their efforts toward enabling technologies for high-hydrogen-fueled turbines, conducting basic research to help define and address HHC fuels issues believed to impact the design of robust turbines for HHC power plants.

The researchers will study specific DOE Turbine Program topics in combustion, aerodynamics, heat transfer, and materials, focusing on sub-topic areas including mixing processes, dynamic stability, hot gas path design, and degradation of IGCC turbine thermal barrier coatings (TBCs) from deposits. The projects are described below.

**University of California-Irvine**, Irvine, Calif.—The proposed research will evaluate methods for characterizing fuel profiles and the level of mixing, and apply these methods to provide detailed fuel concentration profile data. These data can be used to develop and/or validate computational fluid dynamic (CFD) modeling approaches for determining the fuel distribution produced by typical premixing strategies. The objectives of the proposed project are to: (1) establish and apply reliable, accurate measurement methods to establish the instantaneous and time-averaged fuel distribution at several locations downstream of the point of injection; and, (2) evaluate how computational fluid dynamic (CFD) software model coefficients and approaches within affect the overall accuracy of the numerical simulations. (DOE share, \$299,990; recipient share, \$76,244; duration: 36 months)

**Pennsylvania State University**, University Park, Pa.—This research will address the dynamic stability of combustion. Research teams at the Georgia Institute of Technology and Pennsylvania State University will collaborate to develop accurate and robust flame response models that can be incorporated into design tools for predicting longitudinal and transverse instabilities in lean premixed multi-nozzle combustors operating

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## Universities Begin Critical Turbine Systems Research

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on high-hydrogen fuels. Such design tools are essential for the successful development of gas turbine power systems that can operate on coal-derived high-hydrogen fuels in an environmentally acceptable manner. Models such as these are of critical importance to the successful development of new tools for designing future low-emissions, high-hydrogen-fueled gas turbine combustors. (DOE share: \$400,000; recipient share: \$100,000; duration: 36 months)

**Ohio State University**, Columbus, Ohio—This proposal specifically addresses the hot gas path design of combustion turbines using high-hydrogen fuel derived from coal. Researchers at Ohio State University and Brigham Young University will collaborate to address this critical turbine operability and maintainability issue. A critical need exists to explore innovative endwall designs that could both increase turbine durability and mitigate the adverse effects of deposition in the endwall. Through this research DOE and the turbine industry will gain valuable insights into factors affecting the safe, efficient operation of modern industrial turbines with alternative fuels as well as new, innovative endwall designs that are tailored for this more adverse operating environment. (DOE share: \$400,000; recipient share: \$237,778; duration: 36 months)

**Ohio State University**, Columbus, Ohio—TBCs are used to protect and insulate hot gas path metallic components in integrated gasification combined cycle (IGCC) gas turbine engines. Evidence is growing that the use of syngas derived from coal gasification in IGCC engines results in different types of TBC degradation compared to TBCs in engines using conventional fuels. The nature and mechanisms by which these deposits degrade TBCs is not clear, but this could turn out to be a critical issue limiting the performance and durability of IGCC engines. This effort will provide a comprehensive understanding of degradation of IGCC engine TBCs from deposits and attendant mitigation approaches. (DOE share: \$400,000; recipient share: \$140,277; duration: 36 months)

Source: U.S. DOE