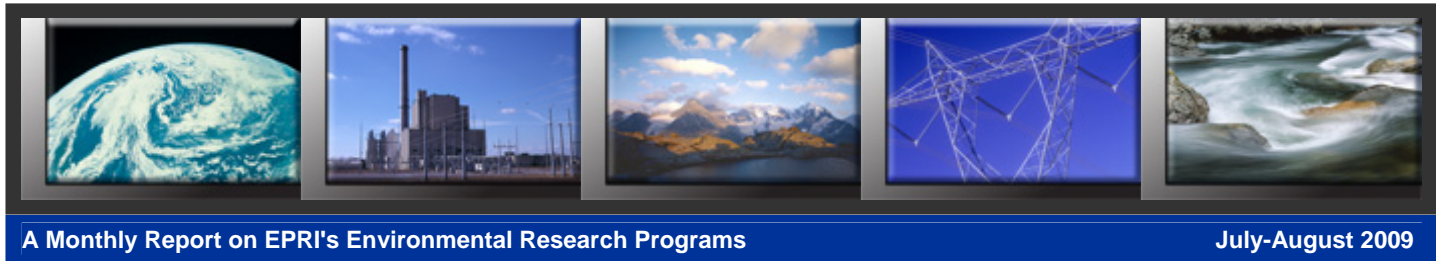


## Environment Quick News



Program members can use their epri.com ID and password to download Acrobat PDF files of EPRI technical reports. For assistance, contact the EPRI Customer Assistance Center at (800) 313-3774.

Dear Environment Sector members:

In this issue of *Quick News* there are a number of articles that describe the relationship between agriculture/land use practices and the electric power sector. In particular, the article in Program 91 on Stephanie Shaw's presentation outlines many of these links and their importance in addressing environmental issues. EPRI research is attempting to clarify many of these relationships so policymakers and regulators can incorporate this knowledge into their decision-making processes.

Stephanie's paper, presented at a recent conference, described how the agriculture industry could play a significant role in climate management through reduced use of fertilizers—thus reducing nitrous oxide emissions—and increased use of low-till agriculture. Her paper also summarized EPRI's project in association with EPA, the U.S. Dept. of Agriculture, and other key players to examine how water quality trading could be applied by the electric and agriculture sectors in cost-effective reduction of nitrogen emissions, discharges, and runoff. She also describes EPRI research, again in association with EPA, on testing the use of FGD gypsum as an agricultural soil amendment.

The Global Climate Change section describes a new modeling framework developed under the direction of Steve Rose that examines the economics of land use and land management decisions in greenhouse gas mitigation and sequestration. Adam Diamant's successful series of emissions offsets workshops most recently focused on deforestation and forest degradation, to much acclaim.

It is critical that our industry work across the various sectors of the economy to explore solutions to environmental issues. EPRI is playing that role on your behalf and with your support.

We hope you are having an enjoyable summer. The announcement of the upcoming advisory meetings in Boulder has recently been sent out, and we look forward to seeing you in October.

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### ***New Sector Web Page Launched***

In a continuing effort to modernize and update EPRI's website, a redesigned Environment sector web page is now live on [epri.com](http://epri.com). The new layout and content simplify access to EPRI's environment research programs and provide easier access to sector information including success stories, new research projects, program websites, and *Quick News* itself. A new URL has also been established to enable direct access to the page. To view the new design and explore this resource, go to [www.epri.com/environment](http://www.epri.com/environment). If you have any questions or comments, contact Chris Mahoney, (704) 595-2156, [cmahoney@epri.com](mailto:cmahoney@epri.com).

## AIR QUALITY

### **Program 42: Air Toxics Health and Risk Assessment**

#### ***EPRI Presents Research Findings at Global Mercury Conference in China***

EPRI's Leonard Levin chaired the closing plenary session of the 9th International Conference on Mercury as a Global Pollutant, held June 7–12 in Guiyang, China. One of the session speakers summarized new work on the natural enrichment of stable mercury isotopes as a tool for tracking mercury sources and cycling processes. Much of this work has evolved from a [1998 EPRI report](#). EPRI-linked research presented at the conference included:

- Leonard Levin and Paul Chu, "[Updating the detailed U.S. mercury inventory from coal-fired power plants](#)"
- Arnout Ter Schure, "[What is wrong with mercury?](#)"
- Arnout Ter Schure, et al., "[Programmable thermal dissociation of reactive gaseous mercury as a route to speciation: Field results from a coal-fired power plant](#)"
- Sean Coburn, et al., "[MAX-DOAS measurements of halogen oxides in a coastal environment at mid-latitudes](#)"
- Eric Edgerton and John Jansen, "[Measurements of coarse Hg<sub>P</sub> \(Hg<sub>PMcoarse</sub>\) at a suburban-coastal site in the SE U.S.](#)"
- Michael Fromm and Lawrence Radke, "[Biomass pyrocumulonimbus: A significant source of mercury to the lower stratosphere](#)"

For more information, contact Leonard Levin, who served as a conference organizer, (650) 855-7929, [llevin@epri.com](mailto:llevin@epri.com); or Arnout Ter Schure, (650) 855-2753, [aterschu@epri.com](mailto:aterschu@epri.com).

### **Program 91: Assessment Tools for Ozone, Particulate Matter, Regional Haze and Atmospheric Deposition**

#### ***Electricity Use and Agricultural Air Emissions***

EPRI's Stephanie Shaw participated in two recent meetings aimed at understanding the air quality issues of the agricultural industry. She presented an overview of EPRI's agriculture-relevant research in her talk, "Electricity and Agriculture: Convergence of kWh and kcal" at the June 1–2 UC Davis Green Acres, Blue Skies II conference. Her presentation may be downloaded from the [event website](#). This conference, in conjunction with an earlier May meeting of the U.S. Department of Agriculture's Agricultural Air Quality Task Force in Fresno, CA, provided excellent opportunities to exchange information and identify research of common interest to electric power and agricultural industries. A major concern of the agricultural community is that increased costs due to CO<sub>2</sub> regulations will put many farmers out of business. Other areas of common interest include reactive nitrogen emissions, primary particulates, emissions trading programs, biomass/biofuels, and nonroad emissions. For more information contact Stephanie Shaw, (650) 855-2353, [sshaw@epri.com](mailto:sshaw@epri.com).

#### ***New Technology Innovation Project Investigates Bioaerosols***

A newly funded Technology Innovation project will assess the contribution of primary biological material to fine and coarse particles in the atmosphere. Termed bioaerosols, these particles are of biogenic origin and consist of plant debris, humic matter, and microbial material. Bioaerosols, such as pollen, fungi, and bacteria, have documented health effects (e.g., allergies and asthma), but are essentially ignored as part of the regulatory process because they are considered part of the "unidentified" organics mass fraction of total particulate matter (PM) and not quantified separately. Some PM health effects attributed to other sources may actually be due to

bioaerosols. A pilot study will be conducted to field-test project methods and optimize sampling protocols. Two full sampling seasons will be carried out in March–April and July–August 2010 at two locations in the Southeastern Aerosol Research and Characterization network. Using microscopic and biochemical techniques, the project will determine if bioaerosols are a significant component of fine and coarse PM, and if they exhibit important seasonal and/or urban/rural differences. For more information, contact Annette Rohr, (650) 855-2765, [arohr@epri.com](mailto:arohr@epri.com) or Stephanie Shaw, (650) 855-2353, [sshaw@epri.com](mailto:sshaw@epri.com).

## **Program 92: Assessment of Air Quality Impacts on Health and the Environment**

### ***EPRI Presents Results From Aerosol Toxicology Research***

EPRI's Annette Rohr recently presented findings from the Toxicological Evaluation of Realistic Emissions of Source Aerosols (TERESA) study. Her talk, "Health Effects of Coal-Fired Power Plant Emissions: The TERESA Study," was given at the 11th International Congress on Combustion By-Products and their Health Effects, held May 31–June 3 in Research Triangle Park, NC. The TERESA study examines the relative health hazards of coal combustion emissions using an acute exposure approach whereby animals are exposed to pollutant mixtures for a single 6-hour period. Toxicity of primary and secondary particles is being studied at three different power plants in the United States. Findings to date show biological effects under certain conditions/scenarios but, in general, the responses are subtle and lesser in magnitude than responses to concentrated ambient particles. A mobile source component is being added to the study this year. For a copy of the presentation, contact Annette Rohr, (650) 855-2765, [arohr@epri.com](mailto:arohr@epri.com).

### ***New Technology Innovation Project to Investigate Bioaerosols***

See story under Program 91.

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## **GLOBAL CLIMATE CHANGE**

[Visit the Global Climate Webpage](#)

## **Global Climate Change Area News**

### ***EPRI Staff Present at International Energy Workshop***

Global Climate Change Area staff participated in the 2009 International Energy Workshop (IEW), held in Venice, Italy, June 17–19. Papers and slide presentations may be downloaded from the IEW [website](#).

- Richard Richels, "Feasible Climate Targets," Plenary Session keynote presentation
- Geoff Blanford, "Revised Emissions Growth Projections for China: Why Post-Kyoto Climate Policy Must Look East," Session 2
- Francisco de la Chesnaye, "Policy Challenges in Setting 2050 GHG Targets," Session 4

For more information, contact Richard Richels, (202) 293-7510, [rrichels@epri.com](mailto:rrichels@epri.com); Geoff Blanford, (650) 855-2126, [gblanford@epri.com](mailto:gblanford@epri.com); or Francisco de la Chesnaye, (202) 293-6347, [fdelachesnaye@epri.com](mailto:fdelachesnaye@epri.com).

### ***Richels Participates in Planning for Intergovernmental Climate Assessment***

EPRI's Richard Richels, at the request of the U.S. government and the invitation of the Intergovernmental Panel on Climate Change (IPCC), participated in the July 13–17 Scoping Meeting for the IPCC's Fifth Assessment Report on Climate Change. The meeting is producing an outline for the scope of work for the assessment, which must then be approved by the IPCC Plenary in the fall. This is the fifth consecutive assessment in which Richels has been asked to participate. For more information, contact Richard Richels, (202) 293-7510, [rrichels@epri.com](mailto:rrichels@epri.com).

### ***Award for Article on U.S. Agricultural Adaptation***

Steven Rose and co-author Bruce McCarl of Texas A&M University have received the outstanding article award from the Agricultural & Applied Economics Association for their 2008 article "[Greenhouse Gas Emissions, Stabilization and the Inevitability of Adaptation: Challenges for U.S. Agriculture](#)" in the peer-reviewed *Choices Magazine*. The article discusses the need, capability, and challenges for U.S. agriculture in

adapting to changing climate, noting unique regional circumstances that might cause some areas to become economically unproductive, while some might adapt and others might become productive for the first time. For more information, contact Steven Rose, (202) 293-6183, [srose@epri.com](mailto:srose@epri.com).

## **Program 102: Global Climate Policy Costs and Benefits**

### ***Federal Decision Making and the Uncertain Impacts of Climate Change***

EPRI's Steven Rose has written a white paper for the Pew Center on Global Climate Change that takes stock of federal decisions regarding climate change impacts and the fundamental characteristics of the information that is required and available for making those decisions. A background document for decision makers, funding entities, and the general public, the paper

- reviews recent federal decision processes that have used climate change impacts information;
- describes the scientific and economic nature of GHG emissions and climate change, and the state of relevant knowledge and decision-making challenges;
- derives high-level principles and components for an analytical framework for assessing impacts; and
- prioritizes critical information gaps for decision makers.

The paper, "Federal decision-making on the uncertain impacts of climate change: Incremental vs. non-incremental climate decisions," is expected to be available in August on the Pew Center on Global Change [website](#). For more information, contact Steven Rose, (202) 293-6183, [srose@epri.com](mailto:srose@epri.com).

### ***Study Explores Global Greenhouse Gas Mitigation Potential of Agriculture and Forestry***

Alla Golub, et al., "The opportunity cost of land use and the global potential for greenhouse gas mitigation in agriculture and forestry," *Resource and Energy Economics*, 2009, article in press, currently available online at <http://dx.doi.org/10.1016/j.reseneeco.2009.04.007>. Steven Rose and collaborators at Purdue University and The Ohio State University developed a new global general equilibrium framework to explicitly model the economics of land-use and land-management decisions in greenhouse gas (GHG) mitigation and sequestration. The results demonstrate the value of using the general equilibrium framework to examine regional and global market interactions both within and across land-use sectors. When land-using sectors are confronted with a tax on GHG emissions, significant changes occur in the global pattern of comparative advantage across sectors, regions, and land types. Globally, forest carbon sequestration is the dominant strategy for GHG emissions mitigation, while agriculture-related mitigation comes predominantly from reduced methane emissions in the ruminant livestock sector, followed by reduced fertilizer and methane emissions from paddy rice. Regionally, agricultural mitigation is a larger share of total land-use emissions abatement in the United States, compared to the rest of the world. For more information, contact Steven Rose, (202) 293-6183, [srose@epri.com](mailto:srose@epri.com).

### ***Report Describes Sea Level Rise***

*Sea Level Rise in the Twenty First Century: A Review* (1019381). This Technical Report provides background on the causes of sea level rise and outlines the observed and projected changes in sea level both globally and regionally. The report emphasizes the potential impacts to coastal areas of the United States. For more information, contact Naresh Kumar, (650) 855-2990, [nkumar@epri.com](mailto:nkumar@epri.com).

## **Program 103: Greenhouse Gas Reduction Options**

### ***EPRI Hosts 6th GHG Emissions Offset Policy Dialogue***

On July 30, EPRI hosted the sixth workshop in its Greenhouse Gas (GHG) Emissions Offset Policy Dialogue project in Washington D.C. The workshop explored the results of various "road-testing" analyses of proposed and existing GHG offset methodologies and protocols completed by EPA and several other nonprofit and scientific research organizations. These analyses all attempt to project the amount and timing of issuance of offsets for a given project based on the application of different GHG offset protocols and accounting methodologies. This work demonstrates the significant impact that offset accounting protocols and methodologies may have on the timing and issuance of future GHG offsets. Approximately 85 representatives from the policymaking, environmental, industrial, financial, and research communities participated. All project

and workshop [background materials and expert presentations](#) are available at the Global Climate public website. For more information, contact Adam Diamant, (510) 260-9105, [adiamant@epri.com](mailto:adiamant@epri.com).

### **Report Highlights Role of Greenhouse Gas Emissions Offsets**

#### ***Key Issues in Designing Mechanisms to Reduce Emissions from Deforestation and Degradation (REDD)***

(1017998). This report provides a comprehensive understanding of the potentially important role that greenhouse gas emissions offsets derived from REDD-based activities may play in helping to mitigate global climate change and in reducing the costs of complying with future requirements to reduce GHG emissions. For more information, contact Adam Diamant, (510) 260-9105, [adiamant@epri.com](mailto:adiamant@epri.com).

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## LAND AND GROUNDWATER

### **Program 49: Coal Combustion Products—Environmental Issues**

#### ***Mercury Volatilization From Flue Gas Desulfurization Gypsum***

Researchers performed air–mercury exchange tests on flue gas desulfurization (FGD) gypsum samples from three power plants burning bituminous coal and three plants burning subbituminous coal. They found that FGD gypsum samples continuously released mercury to the air during the limited duration of the tests. Adding water exacerbated mercury release, but long-term tests on three samples showed releases to the air over time from both wet and dry FGD gypsum. Total mercury concentrations in the FGD gypsum samples ranged from 41 to 1550 µg/kg. The samples lost 10–25% of total mercury under alternating wet and dry conditions that accelerated mercury release. Previous work has shown that fly ash behaves differently from FGD gypsum, usually adsorbing mercury from the air and then re-releasing some of the adsorbed mercury. Mercury releases to air from coal combustion products, such as FGD gypsum and fly ash, may impact commercial use. For more information, contact Ken Ladwig, (262) 754-2744, [keladwig@epri.com](mailto:keladwig@epri.com).

### **Program 50: Manufactured Gas Plant Site Management**

#### ***Developing Monitored Natural Attenuation Protocol for Manufactured Gas Plant Sites***

The U. S. Environmental Protection Agency (EPA) is developing a protocol for evaluating and implementing monitored natural attenuation (MNA) of contaminants at manufactured gas plant (MGP) sites. EPRI's Jeff Clock participated in a recent kickoff workshop with EPA staff, state regulators, researchers, and practitioners who are familiar with MNA applications. "Experience has shown MNA to be effective at many sites," says Clock, "but success at MGP sites will require thorough, site-specific evaluation." It is also clear that source control will be necessary at most MGP sites prior to the use of long-term MNA. EPA plans further workshops as the Agency develops its draft protocol. For more information, contact Jeff Clock, (845) 608-0642, [jclock@epri.com](mailto:jclock@epri.com).

### **Program 59: Power Plant Toxics Characterization**

#### ***EPRI Presents Research Findings at Global Mercury Conference in China***

See story under Program 42.

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## WATER AND ECOSYSTEMS

### **Program 54: Fish Protection at Steam Electric Power Plants**

#### ***EPA Team Attends Summer Advisory Meeting***

At EPRI's invitation, the U.S. Environmental Protection Agency Clean Water Act §316(b) Phase II Rule Development Team attended the June 17, Water and Ecosystems Program Area Summer Technical Advisory Meeting at Alden Research Laboratory Inc. in Holden, MA. The EPA Team reviewed ongoing laboratory experiments being conducted at Alden and heard about EPRI's technical progress on two key 316(b)-related issues:

- engineering issues and fish protection performance of fine-mesh traveling screens

- impacts of a potential national retrofit of closed-cycle cooling systems to meet the “best technology available (BTA)” requirement to reduce impingement and entrainment of fish and shellfish

Following the meeting, EPA Team members noted that they were extremely impressed with the scope and depth of the research and that they look forward to seeing results in the future. They also noted that a revised 316(b) Draft Phase II Rule is unlikely to be released for public comment until late spring 2010. EPRI [presentations](#) can be downloaded from [epri.com](http://epri.com). For more information, contact Doug Dixon, (804) 642-1025, [ddixon@epri.com](mailto:ddixon@epri.com).

### ***EPRI Completes Fine-Mesh Screen Field Site Visits***

EPRI initiated a project to evaluate the engineering issues that industry will encounter if the U.S. Environmental Protection Agency requires a national retrofit of fine-mesh traveling screens as a “best technology available” requirement in a revised Clean Water Act §316(b) Phase II Rule. As part of this project, EPRI is visiting all existing U.S. power plants with fine-mesh screens to gather actual operation and maintenance (O&M) information. EPRI visited Progress Energy’s Brunswick Station (1.0 mm traditional traveling screen, estuarine intake), Tampa Electric’s Big Bend Station (0.5 mm dual-flow traveling screen, estuarine intake), AES’s Sommerset and Dunkirk stations (0.5 mm traditional traveling screens, Lakes Ontario and Erie), Xcel’s Prairie Island Station (0.5 mm traditional traveling screens, Mississippi River), and Topaz Energy’s Barney-Davis Station (0.5 mm center-flow screen, estuarine station). At each location, screens have been in operation for 20 or more years and each plant has developed O&M practices to ensure against loss of cooling flow. During these visits, EPRI also gathered available information on fish return systems and fish protection performance. Information gathered will be included in the EPRI report planned for delivery by December 31. For more information, contact Doug Dixon, (804) 642-1025, [ddixon@epri.com](mailto:ddixon@epri.com).

### ***EPRI Meets With Institute of Nuclear Power Operations on Intake Clogging Issues***

On July 7, EPRI’s Doug Dixon met with representatives of the Institute of Nuclear Power Operations (INPO) to discuss mutual progress in gathering information on cooling water intake structure blockages and in developing best management practices (BMPs) to avoid or mitigate blockage occurrence. INPO sets standards for the U.S. nuclear industry and, along with the World Association of Nuclear Operators, has identified intake blockages as a key issue for management and operational improvement. Doug described EPRI’s ongoing supplemental project (see “[Best Management Practices for Preventing Cooling Water Intake Blockage](#)”, 1016319), which is developing BMPs for all steam electric facilities. INPO shared considerable information it has collected that can improve the content of the EPRI report. Doug also noted EPRI’s intent to establish an interest group through which developments on intake blockages can be tracked and information can be shared. As part of the interest group, INPO agreed to cosponsor with EPRI an international conference and, potentially, an Operations & Maintenance Training Education Course on this issue during summer 2010. For additional information on the meeting or the EPRI project, contact Doug Dixon, (804) 642-1025, [ddixon@epri.com](mailto:ddixon@epri.com), or Kent Zammit, (805) 481-7349, [kezammit@epri.com](mailto:kezammit@epri.com).

### ***Report Published on Impingement Mortality Characterization Study***

[Ohio River Ecological Research Program: Impingement Mortality Characterization Study at 15 Power Stations](#) (1018540). This Technical Report describes a collaborative approach to impingement abundance monitoring to comply with the Phase II Rule of §316(b) of the Clean Water Act. The results will be a valuable resource for understanding factors affecting impingement as well as what species are most likely to be impinged at power plants on large rivers. For more information, contact Doug Dixon, (804) 642-1025, [ddixon@epri.com](mailto:ddixon@epri.com).

## **Program 55: Strategic Water Issues: TMDLs, Availability, Climate**

### ***Ohio River Basin Trading Project Discussed at Summer Advisory Meeting***

A half day of EPRI’s recent Water Program Area Summer Technical Advisory Meeting was dedicated to discussing EPRI’s Ohio River Basin Trading Project. This effort will establish the largest regional water quality trading project in the United States. EPRI’s Jessica Fox provided an update on the project, including a summary of a recent meeting with the U.S. Environmental Protection Agency Office of Water. Other presentations included an overview of the WARMF watershed model, including a discussion on how it is being applied to the Ohio River Basin, and a summary of upcoming challenges and hurdles to project

implementation. These [presentations](#) are available for download on [epri.com](#). For more information, contact Jessica Fox, (650) 855-2138, [jfox@epri.com](mailto:jfox@epri.com).

### ***EPRI Sponsors Workshop on Shifting Water Infrastructure Management Practices***

Under a research effort funded by U. S. EPA, EPRI recently held a workshop to define a new water infrastructure management paradigm, bringing together two communities that are re-evaluating how to manage their water systems, as well as a panel of water management experts representing government, water research foundations, consultants, and universities. The communities—Arizona's Pima County and a region in northern Kentucky that borders the Ohio River—discussed current and future water management strategies, which were evaluated by the water experts. From this discussion, EPRI will provide proceedings and an EPRI technical report to define and better articulate how decentralized systems can be used in an urban infrastructure model and in overall watershed management. For more information, contact Robert Goldstein, (650) 855-2593, [rogoldst@epri.com](mailto:rogoldst@epri.com), or Tina Taylor, (650) 855-2819, [tmtaylor@epri.com](mailto:tmtaylor@epri.com).

### ***New Project on Water Sustainability for Electric Power Generation***

A new project has been initiated to build a long-term (5-10 year) research program in water sustainability with particular focus on reduced water use in the electric sector. Funded under EPRI's Technology Innovation (TI) Program, the project will assess potential contractor capabilities, organize a program executive steering committee, and prepare requests for proposals for 2010 release, as well as maintain essential coordination and joint planning activities with the national energy laboratories, water sector research organizations, key government organizations, and key international contacts. The main focus of this work is the creation of new innovative technologies for air cooling, and desalination/water reuse to significantly reduce energy and dollar costs. For more information, contact Robert Goldstein, (650) 855-2593, [rogoldst@epri.com](mailto:rogoldst@epri.com).

### **Program 56: Effluent Guidelines and Water Quality Management**

#### ***Three R&D Summary FGD Water Briefings Available***

EPRI's Paul Chu gave three R&D summary presentations to The Ohio River Valley Water Sanitation Commission (ORSANCO) about EPRI's work on FGD water characterization and FGD water treatment evaluation. ORSANCO, an interstate commission representing eight states and the federal government, operates programs to improve water quality in the Ohio River and its tributaries. For more information or copies of the presentations, contact Paul Chu, (650) 855-2812, [pchu@epri.com](mailto:pchu@epri.com).

#### ***Effluent Guidelines Discussed at Summer Advisory Meeting***

A half day of EPRI's recent Water Program Area Summer Technical Advisory Meeting was dedicated to discussing effluent guidelines. EPRI's Paul Chu described the direction of FGD water treatment, followed by presentations on selenium management, treatment evaluation of mercury and selenium removal technology, stormwater management, an effluent guideline regulatory update, and nutrients in power plant water discharges. These [presentations](#) are available to Water and Ecosystems program funders on [epri.com](#) (ID and password required). For more information, contact Paul Chu, (650) 855-2812, [pchu@epri.com](mailto:pchu@epri.com).

### **Program 58: Waterpower**

#### ***Dixon Organizes American Fisheries Society Continuing Education Course on Fish Passage***

EPRI's Doug Dixon, who is also president of the Bioengineering Section of the American Fisheries Society (AFS), launched a Bioengineering Continuing Education initiative beginning at this year's AFS Annual Meeting in Nashville, TN, Aug. 30–Sept. 3. The initial course—Science, Tools, and Information Resources on Upstream Fish Passage—will be held Sunday, Aug. 30. Course attendees will receive two Continuing Education Units. This course focuses on upstream passage at hydropower projects, road crossings and culverts, and tide gates, and is coupled with an Aug. 31–Sept. 1 research symposium, Promoting Innovation in Fish Passage & Protection. This symposium will serve as a benchmark for establishing the current state of the art in fish passage and protection and set the stage for future progress. Each author will be tasked with identifying areas in need of improvement, as well as research needs and solutions for these problems. For more information on the AFS Annual Meeting, see [www.fisheries.org](http://www.fisheries.org) or contact Doug Dixon, (804) 642-1025, [ddixon@epri.com](mailto:ddixon@epri.com).

**Program 60: EMF Health Assessment and Radio-Frequency Safety**

[Visit the EMF Health Assessment and RF Safety Public Webpage](#)

***EPRI Sponsors Down Syndrome Leukemia Workshop***

Renowned childhood leukemia experts from Israel, the Netherlands, the United Kingdom, and the United States recently met at an EPRI-sponsored workshop in London to discuss the feasibility of studying childhood leukemia in children with Down syndrome. The risk of developing leukemia among these children is 20 to 40 times higher than among children in the general population. If leukemia in children with Down syndrome is similar to that seen in other children, it may be easier to study the association between EMF and leukemia in the Down syndrome population, whose case incidence is much higher. After examining the evidence, workshop experts concluded that acute lymphoblastic leukemia (ALL)—the type of leukemia most common in children—shows significant similarity among children with or without Down syndrome. This conclusion allows for consideration of a large-scale consortium-sponsored study of EMF and other potential leukemogenic exposures in the Down syndrome population. For more information, contact Gabor Mezei, (650) 855-8908, [gmezei@epri.com](mailto:gmezei@epri.com).

***EMF Workstation 2009 Available in Beta Version***

*PRE-SW EMF Workstation 2009* (1019411). This 32-bit software models electric and magnetic fields in complex situations such as those involving arrays of three-phase substation equipment, transmission and distribution lines, and single-phase custom conductors. For more information, contact Rob Kavet, (650) 855-1061, [rkavet@epri.com](mailto:rkavet@epri.com).

***Kavet Presents EPRI Research at Bioelectromagnetics Society Meeting***

EPRI's Rob Kavet presented the following papers at the Bioelectromagnetics Society 31st Annual Meeting, held June 14–19 in Davos, Switzerland:

- Does M., et al. "Exposure to contact currents and magnetic fields and the risk of childhood leukemia." The authors conclude that "There was no apparent evidence of an association between the risk of childhood leukemia and exposure to contact currents or to magnetic fields in this well characterized [Northern California Childhood Leukemia Study] population."
- Bracken T.D., et al. "An integrated job exposure matrix for exposures to magnetic fields, electric fields, nuisance shocks, contact currents and electrical injuries." The authors note that "Linkage of the job classification scheme to that of the EPRI Occupational Health and Safety Database provides a resource for including electrical as well as chemical and other agents in a holistic approach to exposure assessments."

For more information, contact Rob Kavet, (650) 855-1061, [rkavet@epri.com](mailto:rkavet@epri.com).

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**ENVIRONMENT FEDERAL HIGHLIGHTS (Washington D.C. Office, John Novak)**

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**For more information on the items below, contact John Novak, 202-293-6180, [jnovak@epri.com](mailto:jnovak@epri.com).**

***EPRI Participation in International Climate Meetings***

John Novak attended the climate meetings held June 1–12 in Bonn, Germany. Delegates from 182 countries met to discuss key negotiating texts that may serve as the basis for an international climate change agreement to be negotiated at the U.N. Climate Change Conference in Copenhagen in December. For the United States, the main activity took place in the 6th Session of the Ad Hoc Working Group on Long-Term Cooperative Action under the Convention (AWG-LCA). Countries first identified their concerns with the initial negotiating text prepared by the AWG-LCA Chairman (a first reading of the text). In the second reading, countries provided additional text to address issues of concern; no removals of language were allowed in the text. The process to negotiate the text will begin at the next meeting of the AWG-LCA in Bonn, August 10–14, and continue with meetings in Bangkok in October and in Barcelona in November. During the meetings, Novak met with

delegates and observers to discuss and provide input on issues, and to provide information and links to EPRI research and projects.

### ***EPRI Meets with EPA on Ohio River Trading Project***

On June 15, Jessica Fox, John Novak, and others involved in EPRI's Ohio River Basin Water Quality Trading Project met with U.S. Environmental Protection Agency (EPA) staff to discuss how the project can facilitate development of nutrient criteria in the Ohio River Basin. Meeting participants included the Director of EPA's Office of Science and Technology, the Director of EPA's Office of Wastewater Management, and the Executive Director of the Ohio River Valley Water Sanitation Commission (ORSANCO). EPA expressed high interest in the Ohio River project and its potential to inform the development of nutrient criteria.

### ***EPRI Meets with Obama Administration Officials***

On June 17, Steve Specker, Barbara Tyran, and John Novak met with Joe Aldy, Special Assistant to the President for Energy and Climate Change. On June 18, they met with State Department Deputy Special Envoy for Climate Change Jonathan Pershing. Specker shared results from recent EPRI climate research and insights on climate technology costs.

### ***Edison Electric Institute Environment Meetings***

EPRI participated in several meetings held by the Edison Electric Institute (EEI) in conjunction with EEI's June 23–25 Annual Convention/Expo in San Francisco. John Novak provided an update to the CCS Work Group on EPRI research on the implications of applying large-scale post-combustion CO<sub>2</sub> capture to new and existing coal plants. Leonard Levin gave an update on EPRI air toxics research, and Ron Wyzga gave a report on EPRI PM research at the Clean Air Strategy Group meeting. At the Global Climate Change Subcommittee meeting, Novak provided an update on EPRI climate research activities, and Adam Diamant gave an update on the EPRI Greenhouse Gas Emissions Offset Policy Dialogue project. Bryan Hannegan presented the updated EPRI 2009 PRISM analysis at EEI's Environment Executive Advisory Committee meeting. He informed the Committee that the PRISM analysis will be publicly released when the economic analysis is complete in early August.

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## **New Supplemental Project Opportunities**

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### ***Program 92: Assessment of Air Quality Impacts on Health and the Environment***

- [Michigan Integrated Cohort and Animal Particle Study](#) (1018502). This combined human exposure and animal toxicological study will help link adverse cardiovascular health effects to specific particulate matter components.

**For a complete list of all active Environment Supplemental Project Opportunities, [click here](#).**

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## **New Marketing Communications**

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### ***Program 49: Coal Combustion Products—Environmental Issues***

- [EPRI Research on Coal Combustion Products Environmental Issues](#), Fact Sheet (1019361).
- [EPRI Research on Coal Combustion Products Uses](#), Fact Sheet (1019362).

### ***Program 102 : Global Climate Policy Costs and Benefits***

- [Climate Science Newsletter, July 2009 - Sea Level Rise in the Twenty First Century: A Review](#), Fact Sheet (1019409).

## Upcoming Events

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\* denotes EPRI sponsored or cosponsored event

### Environment Sector

#### \* *Environment Sector and Area Council Advisory Meetings*

Oct. 5–8, Boulder, CO. Contact: Adina Kozuh, (650) 855-2991, [akozuh@epri.com](mailto:akozuh@epri.com).

#### \* *Environment Sector and Area Council Advisory Meetings*

March 15–18, 2010, Orlando, FL. Contact: Adina Kozuh, (650) 855-2991, [akozuh@epri.com](mailto:akozuh@epri.com).

### Air Quality

#### *Gordon Research Conference on Atmospheric Chemistry*

Aug. 23–28, Waterville Valley, NH. Contact: Eladio Knipping, 202-293-2691, [eknippin@epri.com](mailto:eknippin@epri.com).

#### *Twenty-First Conference of the International Society for Environmental Epidemiology*

Aug. 25–28, Dublin, Ireland. Contact: Annette Rohr, (650) 855-2765, [arohr@epri.com](mailto:arohr@epri.com).

#### *Annual Meeting of the American College of Epidemiology*

Sept. 12–15, Silver Spring, MD. Contact: Sharan Campleman, (650) 855-2331, [scampleman@epri.com](mailto:scampleman@epri.com). More information is available at the [event website](#).

#### *National Atmospheric Deposition 2009 Annual Meeting & Scientific Symposium*

Oct. 6–8, Saratoga Springs, NY. Contact: Arnout Ter Schure, (650) 855-2753, [aterschu@epri.com](mailto:aterschu@epri.com).

#### *8th Annual Community Modeling and Analysis System (CMAS) Conference*

Oct. 19–21, Chapel Hill, NC. Contact: Naresh Kumar, (650) 855-2990, [nkumar@epri.com](mailto:nkumar@epri.com). More information is available at the [event website](#).

#### *Air Quality VII Conference*

Oct. 25–29, Arlington, VA. Contact: Leonard Levin, (650) 855-7929, [llevin@epri.com](mailto:llevin@epri.com). More information is available at the [event website](#).

#### *American Association for Aerosol Research 28<sup>th</sup> Annual Conference*

Oct. 26–30, Minneapolis, MN. Contact: Stephanie Shaw, (650) 855-2353, [sshaw@epri.com](mailto:sshaw@epri.com). More information is available at the [event website](#).

#### *2009 National Ambient Air Monitoring Conference*

Nov. 2-5, Nashville, TN. Contact: Stephanie Shaw, (650) 855-2353, [sshaw@epri.com](mailto:sshaw@epri.com). More information is available at the [event website](#).

#### *Society of Environmental Toxicology and Chemistry 30th Annual Meeting*

Nov. 19–23, New Orleans, LA. Contact: Sharan Campleman, (650) 855-2331, [scampleman@epri.com](mailto:scampleman@epri.com). More information is available at the [event website](#).

#### *Society for Risk Analysis 2009 Annual Meeting*

Dec. 6–9, Baltimore, MD. Contact: Sharan Campleman, (650) 855-2331, [scampleman@epri.com](mailto:scampleman@epri.com). More information is available at the [event website](#).

### **American Geophysical Union 2009 Fall Meeting**

Dec. 14–18, San Francisco, CA. Contact: Stephanie Shaw, (650) 855-2353, [sshaw@epri.com](mailto:sshaw@epri.com). More information is available at the [event website](#).

### **Global Climate Change**

#### ***9th Annual EPRI-IEA-IETA Workshop on Greenhouse Gas Emission Trading***

Sept. 14–15, Paris, France. Contact: Adam Diamant, (510) 260-9105, [adiamant@epri.com](mailto:adiamant@epri.com). More information is available at the [event website](#). Register for the workshop [here](#).

### **Land and Groundwater**

#### ***\* Fall MGP Meeting***

Sept. 1–2, Alexandria, VA. Contact: Contact: Jeff Clock, (845) 608-0642, [jclock@epri.com](mailto:jclock@epri.com). More information is available at the [event website](#).

#### ***Air Quality VII Conference***

Oct. 25–29, Arlington, VA. Contact: Leonard Levin, (650) 855-7929, [llevin@epri.com](mailto:llevin@epri.com). More information is available at the [event website](#).

#### ***\* Agricultural & Industrial Uses of FGD Gypsum***

Nov. 17–19, Indianapolis, IN. Contact: Ken Ladwig, (262) 754-2744, [keladwig@epri.com](mailto:keladwig@epri.com). This conference is jointly sponsored by EPRI, ACAA, USDA-ARS, EPA, and Southern Company. More information is available at the [event website](#).

#### ***\* EPRI MGP 2010 Symposium***

Jan. 27–29, 2010, San Antonio, TX. Contact: Jeff Clock, (845) 608-0642, [jclock@epri.com](mailto:jclock@epri.com), or Jim Lingle, (414) 355-5559, [jlingle@epri.com](mailto:jlingle@epri.com). EPRI has issued a [call for abstracts](#). More information is available at the [event website](#).

### **Water and Ecosystems**

#### ***American Fisheries Society Annual Meeting***

Aug. 30–Sept. 3, Nashville, TN. Contact: Doug Dixon, (804) 642-1025, [ddixon@epri.com](mailto:ddixon@epri.com). Doug Dixon has organized a Continuing Education Program entitled Tools, and Information Resources on Upstream Fish Passage. The course will be held Sunday, Aug. 30 and attendees will receive two Continuing Education Units. Doug has also co-organized a national symposium on Fish Community Monitoring in Big Rivers on Wednesday, Sept. 2 through Thursday, Sept. 3. More information is available at the event website ([www.fisheries.org](http://www.fisheries.org)).

### **T&D Environmental Issues**

#### ***Ninth International Symposium on Environmental Concerns in Rights-of-Way Management***

Sept. 27–Oct. 1, Portland, OR. Contact: John W. Goodrich-Mahoney, (202) 293-7516, [jmahoney@epri.com](mailto:jmahoney@epri.com). More information is available at the [event website](#).

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