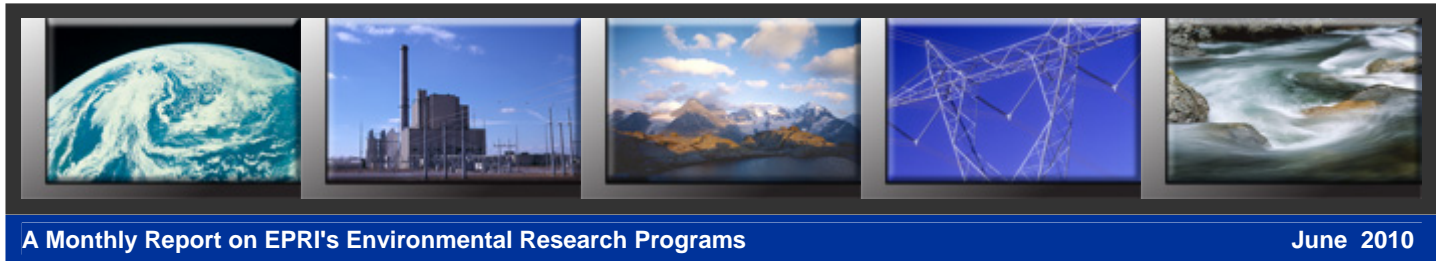


Environment Quick News



A Monthly Report on EPRI's Environmental Research Programs

June 2010

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:

Summer brings longer, warmer days and vacations. At EPRI it also brings the season of technical “deep dives.” In addition to Fall and Spring advisory sessions, many of our programs hold summer meetings that offer the opportunity to dive deeper into the technical results from our research. These meetings are often used as a venue to invite input from a wider community of stakeholders as well.

We kicked off the season in May with our 15th Annual Global Climate Change Research Seminar in Washington, DC. This meeting brings together industry, government, and academia to discuss a broad range of climate research and the implications for the energy sector. Building on the success of this annual event, we held our first Air Quality Research Seminar the following week, also in Washington DC. This meeting focused on air pollution and health with specific emphasis on particulate matter and the regulatory paradigm of a mass-based standard. Representatives from the regulatory and scientific communities, plus industry members, had a robust series of discussions that will help define future research in this area.

In June we will hold our Water Summer Meeting in Whitefish, MT, and our Rights-of-Way program will conduct a workshop in Milwaukee on Managing Invasive Plant Species.

In July we will be convening members of our new Interest Group on the Environmental Aspects of Renewable Energy in San Francisco to delve into these issues and prioritize the research needs for this new Environment program.

August will bring our MGP meeting in West Point, NY and our EMF Scientific Advisory Committee Meeting in New York City.

More details on each meeting can be found in the body of this month’s newsletter. Planning, conducting, and communicating EPRI’s research are nonstop endeavors. While we wish you fun-filled summer vacations and relaxing breaks from work, we also hope to see you at one or more of our summer meetings designed to allow in-depth discussions in many of our technical research areas.

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Air Quality Area News

EPRI Hosts Air Quality Research Seminar

EPRI's Air Quality Group held its first research seminar on May 26–27 in Washington, DC. The seminar covered particulate matter (PM) health effects, with a focus on evaluating different alternatives to a mass-based PM standard. In addition to Air Quality Area sponsors, EPRI invited members of the legislative, regulatory, environmental, and scientific communities to attend this event. The outcomes of the seminar will help define EPRI's future PM research. Seminar presentations are available under the [presentations tab in the EPRI event listing](#). For more information, contact Naresh Kumar, (650) 855-8758, nkumar@epri.com.

Program 42: Air Toxics Health and Risk Assessment

EPRI Begins Study of Basic Reactions Governing Mercury Chemistry in Power Plant Plumes

Researchers at the University of Miami initiated laboratory studies based on EPRI observations to describe the basic chemical reactions governing conversion of oxidized to elemental mercury in plumes downwind of three coal-fired power plants. Documenting these basic chemical reactions will enhance the predictive capacity of mercury atmospheric models. In a bench-scale reactor, researchers are burning the coal blend used at Plant Crist—host of EPRI's most recent plume measurement study—while adding mercury and other constituents to produce reaction products that can be identified exactly by laser-based measurements. Researchers will be looking for evidence of conversion and for the oxidized mercury compounds participating in the conversion process. For example, burning coal releases compounds such as mercury chloride and mercury oxide that may convert (reduce) to elemental mercury. Additional studies at the University of Wisconsin will vary environmental parameters to influence the conversion processes in a reaction vessel. The ultimate goal is to bring these two approaches together at the timescale of reactions observed in the plume at Plant Crist. For more information, contact Arnout Ter Schure, (650) 855-2281, aterschu@epri.com.

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

Southeastern Aerosol Network Plans Future Research

The Southeastern Aerosol Research and Characterization (SEARCH) network, part of a public-private collaboration with EPRI and Southern Company, held its annual meeting May 3–5 to discuss ongoing research and future plans. Several important topics were covered:

- Spatial interpolation of the air quality data was done for the Birmingham area using data from the Southeastern Aerosol network and other local monitoring networks. The quality of the interpolated data for ozone and fine particles is promising, and interpolated data will be used for exposure estimates in future epidemiology studies as part of the Aerosol Research and Inhalation Epidemiology Study.
- Stack sampling is under way at several coal-fired power plants for elemental carbon, organic carbon, and various high-molecular-weight organics in the particle phase. The sampling supports an upcoming study investigating the value of ambient high-molecular-weight organics measurements for source apportionment.
- EPA is interested in using the Southeastern Aerosol network data in its efforts to monitor the Deepwater Horizon oil spill and cleanup. Continuous data, including fine particle mass and components, and filter data on organics are of special interest.
- Extensive discussions centered on planning core and optional tasks for the next phase of the Southeastern Aerosol network, will begin in 2011.

For more information, contact Stephanie Shaw, (650) 855-2353, sshaw@epri.com.

Research Sheds Light on Secondary Organic Aerosol Formation

Researchers have analyzed the data from EPRI's August Mini-Intensive Gas and Aerosol Study and have detected particle-phase isoprene-derived epoxydiol (IEPOX) and its known reaction products in ambient samples. Previously this chemistry was known only through laboratory chamber studies and measurements in gas-phase ambient samples. Detection in the particle phase is important because it provides evidence for the chemical interaction of biogenic emissions and anthropogenic emissions leading to the formation of isoprene

secondary organic aerosol (SOA). On average, the sum of the mass concentrations of IEPOX and the measured isoprene SOA tracers accounted for about 3–4% of the organic carbon present in the PM. A journal paper describing these findings has been accepted by *Environmental Science and Technology*. For more information, contact Stephanie Shaw, (650) 855-2353, sshaw@epri.com, or Eladio Knipping, (202) 293-6343, eknippin@epri.com.

New Project to Assess Future of Electric Drive Technologies

A May 6 kick off meeting brought EPRI managers, contractors, and sponsors together to discuss specific deliverables and schedule for the project, [Environmental and Economic Assessment of a Full Electric Transportation Portfolio](#). The project expands upon an earlier EPRI–Natural Resources Defense Council analysis to evaluate the air quality impact of on-road and non-road electric transportation technologies. Impact calculations will be defined as air quality-based and exposure-based cost-effectiveness (i.e., reductions in air pollutants or exposure per cost of a specific electric drive technology). An economic analysis will calculate the marginal greenhouse gas abatement costs of electric transportation and determine its overall impact on key economic indicators. The project duration is approximately 18 months. For more information, contact Eladio Knipping, (202) 293-6343, eknippin@epri.com.

EPRI Research Identifies Important Requirements for Secondary Organic Aerosol Chamber Studies

Pankow, J.F. “[Organic particulate material levels in the atmosphere: Conditions favoring sensitivity to varying relative humidity and temperature](#),” *Proceedings of the National Academy of Sciences—Atmospheric Chemistry Special Feature*, 2010, 107 (15): 6682-6686. This paper examines the methods used to estimate organic particulate matter from measurement data, to see how sensitive the estimates are to changes in relative humidity and temperature. The author found that atmospheric systems with low levels of organic matter or systems composed of unaged secondary organic aerosol are more likely to be sensitive to changing relative humidity and temperature. These results demonstrate the importance of using realistic concentrations and atmospheric conditions when running laboratory chamber studies to improve understanding of atmospheric processes. For more information, contact Eladio Knipping, (202) 293-6343, eknippin@epri.com.

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

Paper Describes Lung Response to Concentrated Ambient Particles

Rohr, A.C., et al. “[Cardiopulmonary responses in spontaneously hypertensive and Wistar-Kyoto rats exposed to concentrated ambient particles from Detroit, Michigan](#),” *Inhalation Toxicology*, 2010, 22(6):522-533. Co-authored by EPRI’s Annette Rohr, this paper describes a study of the cardiopulmonary and systemic effects in rats of concentrated ambient particles. The results indicate that ambient particles collected in Detroit can cause mild pulmonary and systemic changes in rats, and that local sources of fine particles (oil combustion, oil refining, waste incineration, and traffic) may play an important role in the observed effects. For more information, contact Annette Rohr, (425) 298-4374, arohr@epri.com.

GLOBAL CLIMATE CHANGE

[Visit the Global Climate Webpage](#)

Global Climate Change Area News

EPRI Holds Global Climate Change Research Seminar

On May 18–19 in Washington, DC, EPRI’s Global Climate Change Group held its 15th annual research seminar aimed at communicating the latest global climate research findings. EPRI and invited experts discussed a broad range of recent international and regional research and various implications for the energy sector. The seminar was attended by representatives of industry, government, and academia. Seminar presentations are posted on the [Global Climate website](#). For more information, contact Tom Wilson, (650) 855-7928, twilson@epri.com.

EPRI Participates in National Academy of Sciences Workshop

EPRI's Geoff Blanford and Richard Richels participated in a National Academy of Sciences Workshop on Modeling the Economics of Greenhouse Gas Mitigation, held April 15–16 in Washington, DC. The workshop stimulated a dialogue about the relative strengths and weaknesses of models used to assess the economic impacts of reducing greenhouse gas emissions. Dr. Blanford presented a paper on sectoral offsets, while Dr. Richels participated in several panel and discussion sessions. Dr. Richels also served on the Workshop planning committee at the invitation of the National Academy of Sciences. Proceedings from the Workshop are to appear in a special issue of *Energy Economics* later this year. For more information, contact Richard Richels, (202) 293-2160, rrichels@epri.com, or Geoff Blanford, (650) 855-2126, gblanford@epri.com.

Program 102: Global Climate Policy Costs and Benefits

Innovative U.S. Regional Energy-Economy Model Being Developed

EPRI is developing a new U.S. regional energy–economy model to assess the regional implications of future energy and environmental policies. This multiyear effort builds on EPRI's prior assessment work using a global energy–economy model, the Model for Estimating the Regional and Global Effects of Greenhouse Gas Reductions (MERGE), to estimate national-level U.S. effects. This new regional model will integrate and build upon the numerous technical insights from EPRI research programs and projects by incorporating

- revised estimates of generation and T&D technology cost and performance data;
- detailed wind and solar resource inputs;
- improved regional estimates of energy efficiency, demand response, end-use devices, and distributed generation, reflecting a "smarter" grid;
- a full treatment of biomass with resource competition between uses for power, for fuels, and potentially as carbon offsets; and
- updated compliance costs for environmental regulations and assessment of technology options to retrofit or retire existing fossil or nuclear assets.

Once completed, the new regional model will be a powerful new tool for understanding the integrated response of the U.S. energy system under a variety of future scenarios, providing important insights for industry executives, regulators, legislators, stakeholders, and the public at large. Based on the strong support and encouragement received earlier this year from presentations of preliminary model results to EPRI's Advisory Council and Board of Directors, [supplemental funding](#) is being sought to expand and accelerate this research. For more information, contact Bryan Hannegan, (650) 855-2459, bhannegan@epri.com, or Francisco de la Chesnaye, (202) 293-6347, fdelachesnaye@epri.com.

Could U.S. Greenhouse Gas Policy Benefit U.S. Agriculture?

Baker, J.S., et al. "[Net Farm Income and Land Use under a U.S. Greenhouse Gas Cap and Trade](#)," *Policy Issues*, 2010, P17:1–5. Co-authored by EPRI's Steven Rose, this paper estimates the implications of a potential U.S. greenhouse gas cap-and-trade policy on the U.S. agricultural sector. The analysis suggests that the agricultural sector would benefit on net from such a policy. Despite higher production input costs, producers would benefit from higher commodity prices and additional revenues from offsets and increased demand for bioenergy feedstocks. For more information, contact Steven Rose, (202) 293-6183, srose@epri.com.

Program 103: Greenhouse Gas Reduction Options

EPRI to Host 8th GHG Emissions Offset Policy Dialogue

On June 24, EPRI plans to host the eighth workshop in its EPRI Greenhouse Gas (GHG) Emissions Offset Policy Dialogue project in Washington DC. Approximately 80 representatives from the policymaking, environmental, industrial, electric power, financial, and research communities are expected to participate. The workshop will explore the offsets methodology development, offsets registration, and credit issuance processes of the key GHG offset programs around the world today. Visit the [Global Climate website](#) to view the Workshop materials. For more information, contact Adam Diamant, (510) 260-9105, adiamant@epri.com.

EPRI Research Featured at Bioeconomy and Climate Change Conference

Michigan State University (MSU) hosted the [Bioeconomy and Global Climate Change Symposium](#) on April 26–27 to discuss the Michigan Climate Action Plan and relevant research on climate change. Featured at the symposium was EPRI's collaborative project with MSU to evaluate potential nitrous oxide (N₂O) emission reductions from reducing the amount of nitrogen fertilizer applied to cropland. EPRI's Adam Diamant provided an "[Overview of the Key Role Greenhouse Gas Emission Offsets Play in Evolving Cap-and-Trade Programs.](#)" Phase 2 of the collaborative project, beginning this spring, will attempt to validate the N₂O offsets protocol developed in Phase 1. For more information, contact Adam Diamant, (510) 260-9105, adiamant@epri.com.

LAND AND GROUNDWATER

Program 49: Coal Combustion Products—Environmental Issues

U.S. Environmental Protection Agency Releases Proposal for National Regulation of Coal Combustion Product Disposal

On May 3, the U.S. Environmental Protection Agency (EPA) announced the release for public comment of first-ever national regulations governing disposal of coal combustion products (CCPs). The proposal offers two options: regulation of CCPs as a special waste under Subtitle C hazardous waste provisions, or regulation under Subtitle D nonhazardous waste provisions. In both cases, certain beneficial uses would remain exempt from the national regulation. EPA is seeking comments on the two options, as well as on the scope of the beneficial use exemptions. EPRI will be meeting with its advisors to determine if there is additional research that may help to address some of the questions and issues raised in the proposal. For more information, contact Ken Ladwig, (262) 754-2744, keladwig@epri.com.

Hybrid Anion Exchangers Show Some Promise in Treating Ash Leachate

Ash leachate often contains inorganic constituents such as selenium, molybdenum, and boron that can be difficult to treat to low levels. EPRI is investigating the use of hybrid anion adsorbents for removal of these constituents—as well as arsenic and chromium—from leachate. For example, laboratory tests at Lehigh University found that loading the anion exchange resin IRA 900 with carmelite successfully reduced molybdenum from 2 mg/L to below detection for 1000 bed volumes, and to below 1 mg/L for more than 3000 bed volumes. This research is part of a broader effort to develop treatment technologies that can be used for leachate-impacted groundwater, in either *in situ* or *ex situ* remediation systems. For more information, contact Ken Ladwig, (262) 754-2744, keladwig@epri.com.

Program 50: Manufactured Gas Plant Site Management

EPRI Comments on Proposed Approach to Determining Carcinogenicity of Polycyclic Aromatic Hydrocarbon Mixtures

On April 27, EPRI submitted comments to the U.S. Environmental Protection Agency (EPA) on its proposed approach to determining the carcinogenicity of polycyclic aromatic hydrocarbon (PAH) mixtures. This new approach assigns a relative potency factor (RPF) to each constituent of a mixture, based on the constituent's carcinogenicity compared with that of an established carcinogen, benzo[a]pyrene. According to EPA, after summing doses of constituent PAHs weighted by their RPFs, "cancer risk is then estimated using the dose-response curve for the index PAH." EPRI's comments will soon be available on epri.com to members of the Manufactured Gas Plant Site Management program. EPA's external review draft, "Development of a Relative Potency Factor (RPF) Approach for Polycyclic Aromatic Hydrocarbon (PAH) Mixtures," is available [here](#) under Downloads/Related Links. For more information, contact Annette Rohr, (425) 298-4374, arohr@epri.com.

Program 59: Power Plant Multimedia Toxics Characterization

Hazardous Air Pollutants Interest Group Free to Participants in 2010

The Hazardous Air Pollutants (HAPs) Interest Group provides a forum for participating companies to share information on HAPs emissions and control-technology development. In 2010, participation is free to members of the Power Plant Multimedia Toxics Characterization program and the Integrated Environmental Controls program. Formerly called the Mercury Characterization and Control Interest Group (MerCCIG), the group has

expanded its scope in response to the U.S. Environmental Protection Agency's Information Collection Request for all listed HAPs. For more information, contact Paul Chu, (650) 855-2362, pchu@epri.com, or George Offen, (650) 855-8942, goffen@epri.com.

WATER AND ECOSYSTEMS

Program 53: Water Quality Criteria Development and Assessment

EPRI Meets With Environmental Protection Agency Staff to Discuss Episodic Version of Biotic Ligand Model

EPRI's John Goodrich-Mahoney recently met with staff in the Environmental Protection Agency's (EPA's) Health and Ecological Criteria Division to discuss the development of an episodic version of EPRI's Biotic Ligand Model. The current Biotic Ligand Model, which describes what portion of a metal residing in water is available to cause toxicity to fish, is a steady-state model that does not take into consideration fluctuating exposures of different metals in water—especially relevant with stormwater discharges. The episodic model would describe changes in concentration of a metal over time from either point or nonpoint sources. EPA is increasingly interested in nonpoint sources and is considering a variety of methods to regulate these discharges. Although EPA adopted and provided support for the steady-state Biotic Ligand Model, the Agency is not in a position to support the episodic model directly. EPA staff provided positive feedback on the EPRI approach and encouraged EPRI staff to continue development. EPRI plans to continue funding this work and to publish the results in 2011. For more information, contact John W. Goodrich-Mahoney, (202) 293-7516, jmahoney@epri.com.

Program 54: Fish Protection at Steam Electric Power Plants

EPRI Initiates Testing of Fine-Mesh Vacuum Screen

A key research project in EPRI's Fish Protection program has been the evaluation of the performance of various types of fine-mesh traveling screens for protecting early life stages (larvae and juveniles) of fish. Over the past three years, EPRI has evaluated a traditional EIMCO band screen, a Passavant-Geiger rotary screen, and an Intralox molded plastic screen in a laboratory flume. Preliminary test results are reviewed in EPRI report [1020663](#). In 2010, EPRI will examine a fourth screen type, the Beaudrey Water Intake Protection (WIP) Screen, a rotary screen with a vacuum fish and debris removal system. EPRI previously tested a coarse-mesh version of this screen in the field at Omaha Public Power District's North Omaha Station. Results of that successful effort (survival performance >90%) are presented in EPRI report [1018490](#). A vacuum removal system has never before been evaluated for collecting and transporting larval and juvenile fish. EPRI will test a pilot screen with 2.0 mm screen mesh. Results of the testing will be available by the end of 2010. For more information, contact Doug Dixon, (804) 642-1025, ddixon@epri.com.

Program 58: Waterpower

EPRI Seeking More Demonstration Sites for Evaluation of Fish-Friendly Alden Turbine

EPRI is seeking additional potential demonstration sites at existing and new hydropower developments to install and evaluate the fish-friendly Alden turbine. With a grant from the U.S. Department of Energy (DOE), EPRI is currently working on the engineering design of this innovative hydropower turbine, which has features that have been shown to significantly reduce fish injury and mortality. The turbine will be ready for field deployment in late 2011. EPRI is seeking an additional demonstration site to complement a tentatively planned demonstration of the turbine at Brookfield Renewable Power's School Street Project in New York. Applications for companies interested in demo site consideration are available on the [Alden Research Laboratory Inc. website](#). From the applications received, two or three projects will be selected for a detailed feasibility assessment. Based on the results, a final recommendation will be made at the end of 2010 for the site that is best suited for installation and demonstration of the Alden turbine. Future work for the additional demonstration project will focus on site design engineering and installation planning, site construction and turbine installation, and biological and operational turbine testing. EPRI will seek funding from industry and government sources to support these efforts. For more information, contact Doug Dixon, (804) 642-1025, ddixon@epri.com.

Program 51: T&D Facilities & Equipment: Environmental Issues

Project on Oil Spill Adsorbents Under Way

Phase 1 of a project on oil spill adsorbents has begun with the identification of more than 20 materials for evaluation. Researchers will test the basic adsorptive properties of these materials and summarize the findings, along with general information on each material, in a Technical Update to be published in December. Phase 2 of the project, scheduled for 2011, will include a more detailed assessment of the performance and environmental characteristics of materials used. For more information, contact Jeff Clock, (845) 608-0642, jclock@epri.com.

Program 57: ROW: Siting, Vegetation Management, and Avian Issues

EPRI Sponsors June Workshop on Managing Invasive Plant Species

EPRI invites members of the ROW: Siting, Vegetation Management, and Avian Issues program to participate in a workshop on containing the spread of invasive plant species on electric utility rights-of-way (ROWs). The workshop will be held June 29–30 in Milwaukee, WI and hosted by We Energies. The workshop will provide ROW managers with tools to comply, in a cost-effective and practical manner, with regulations pertaining to invasive plant species throughout the United States. Participants will help develop a consensus workshop report offering guidance on

- detecting and identifying invasive plant species,
- conducting ROW maintenance activities where invasive species are present, and
- developing strategies to manage and prevent the spread of invasive species.

For more information, contact John W. Goodrich-Mahoney, (202) 293-7516, jmahoney@epri.com.

Program 60: EMF and RF Health Assessment and Safety

Visit the EMF and RF Health Assessment and Safety Webpage

Third TransExpo Exposure Assessment Published

Hareuveny, R. et al. “[Exposure to 50 Hz magnetic fields in apartment buildings with indoor transformer stations in Israel](#),” *Journal of Exposure Science & Environmental Epidemiology*, 2010, Apr 21: advance online publication. In this study, average magnetic fields were significantly higher in apartments located above internal transformer stations than in apartments elsewhere in the same Israeli buildings. These findings agree with previously published measurements made in Finnish and Hungarian apartment buildings as part of TransExpo, an international epidemiological study of childhood leukemia. Findings from these studies confirm that distance from an internal transformer station provides reliable information about the magnetic field exposure of apartment occupants. For more information, contact Gabor Mezei, (650) 855-8908, gmezei@epri.com.

EPRI Comments on a Study of Power-Frequency Magnetic Fields and Childhood Brain Tumors in Japan

Saito, T, et al. “Power-frequency magnetic fields and childhood brain tumors: A case-control study in Japan,” *Journal of Epidemiology*, 2010; 20(1): 54–61. EPRI evaluated the strengths and limitations of this epidemiologic study, whose authors report a positive association between magnetic field exposures above 0.4 μ T and risk of childhood brain tumors. [Comments](#) (EPRI Product 1021272) are available on epri.com. For more information, contact Gabor Mezei, (650) 855-8908, gmezei@epri.com.

President’s Cancer Panel Report Includes Exposure to Electromagnetic Fields

President’s Cancer Panel. [Reducing Environmental Cancer Risk: What We Can Do Now](#). 2008–2009 Annual Report, April 2010. Prepared by an advisory board of the U. S. National Cancer Institute for President Obama’s review, this 240-page report devotes 7 pages to electromagnetic fields (EMF) as one of several “environmental exposures related to modern lifestyles” that may be associated with increased cancer risk.

While the report notes that “findings of a lack of association between ELF EMR [extremely low frequency electromagnetic radiation] from power lines or other sources and cancer are consistent among numerous international organizations” ... it also states that “current and potential harms from extremely low frequency radiation are unclear and require further study.” An appendix categorizes nonionizing radiation (without distinction between radio-frequency and ELF EMF sources) as a “suspected” risk factor for brain, breast, and salivary gland cancers, as well as leukemia. For more information, contact Rob Kavet, (650) 855-1061, rkavet@epri.com.

OCCUPATIONAL HEALTH AND SAFETY

Program 62: Occupational Health and Safety

Campleman Gives Invited Presentation at Green Jobs Workshop

EPRI’s Sharan Campleman presented an electric industry research perspective on making green jobs safe and healthy at a National Institute of Occupational Safety and Health workshop conducted during the “Good Jobs, Green Jobs National Conference” held May 4–6 in Washington, DC. The workshop identified actions needed to ensure the safety and health of workers in various sectors of the green economy. The workshop included a panel discussion of case studies demonstrating the value of collaboration among safety and health personnel and management in sectors such as energy, construction, and nanotechnology. For a copy of her presentation, “Transitioning OH&S to Green Jobs: An Electric Industry Research Perspective,” or more information, contact Sharan Campleman, (650) 855-2331, scampleman@epri.com.

New Supplemental Project Opportunities

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

- [Fugitive Emissions from Power Plants](#) (EPRI Product 1021282)

Program 102: Global Climate Policy Costs and Benefits

- [PRISM 2.0—Regional Energy and Economic Model Development and Initial Application](#) (EPRI Product 1021278)

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

New Marketing Communications

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

- [Air Quality and Public Health: EPRI's Comprehensive Research Portfolio, Fact Sheet](#) (EPRI Product 1021346)

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

- [Ohio River Basin Trading Project - Quarterly Update, Spring 2010](#) (EPRI Product 1021365)

Upcoming Events

* denotes EPRI sponsored or cosponsored event

Environment Sector

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

Sep. 27–30, San Antonio, TX. Contact: Marsha Grossman, (650) 855-8760, mgrossma@epri.com.

Energy Sustainability

*** Webcast: Ecomiles and Employee Programs at Northeast Utilities**

Jun. 23, 10 a.m. PDT. Contact: Todd Maki, (650) 855-2162, tmaki@epri.com, or Kitty Vroom, (650) 855-2255, kvroom@epri.com. The webcast is open to members of the Energy Sustainability Interest Group.

*** Environmental Aspects of Renewable Energy Workshop**

Jul. 1, San Francisco, CA. Contact Todd Maki, (650) 855-2162, tmaki@epri.com, or Kitty Vroom, (650) 855-2255, kvroom@epri.com. More information is available at the [event website](#). The workshop is open to members of the Environmental Aspects of Renewable Energy Interest Group.

*** Webcast: Valuing Ecosystem Services Presented by Resources For the Future**

Jul. 7, 10 a.m. PDT. Contact: Todd Maki, (650) 855-2162, tmaki@epri.com, or Kitty Vroom, (650) 855-2255, kvroom@epri.com. The webcast is open to members of the Energy Sustainability Interest Group.

Air Quality

Air & Waste Management Association 103rd Annual Conference & Exhibition

Jun. 22–25, Calgary, Canada. Contact: Naresh Kumar, (650) 855-2990, nkumar@epri.com. More information is available at the [event website](#).

Joint ICACGP–IGAC Conference—Atmospheric Chemistry: Challenging the Future

Jul. 11–16, Halifax, Canada. Contact: Eladio Knipping, (202) 293-6343, eknippin@epri.com. More information is available at the [event website](#).

2010 Joint Conference of International Society of Environmental Epidemiology and International Society of Exposure Science

Aug. 28–Sep. 1, Seoul, Korea. Contact: Annette Rohr, (425) 298-4374, arohr@epri.com.

*** Power Plant Air Pollutant Control “MEGA” Symposium**

Aug. 30–Sep. 2, Baltimore, MD. Contact: Leonard Levin, (650) 855-7929, llevin@epri.com. More information is available at the [event website](#).

9th Annual Community Modeling and Analysis System Conference

Oct. 11–13, Chapel Hill, NC. Contact: Naresh Kumar, (650) 855-8758, nkumar@epri.com. More information is available at the [CMAS website](#).

National Atmospheric Deposition Program 2010 Annual Meeting and Scientific Symposium

Oct. 19–21, Lake Tahoe, CA. Contact: Leonard Levin, (650) 855-7929, llevin@epri.com, or Arnout Ter Schure, (650) 855-2281, aterschu@epri.com. More information is available at the [NADP website](#).

American Association for Aerosol Research 29th Annual Conference

Oct. 25–29, Portland, OR. Contact: Eladio Knipping, (202) 293-6343, eknippin@epri.com.

Air & Waste Management Association Symposium on Air Quality Measurement Methods and Technology

Nov. 2–4, Los Angeles, CA. Contact: Stephanie Shaw, (650) 855-2353, sshaw@epri.com. More information is available at the [event website](#).

American Geophysical Union 2010 Fall Meeting

Dec. 13–17, San Francisco, CA. Contact: Stephanie Shaw, (650) 855-2353, sshaw@epri.com.

**** 10th International Conference on Mercury as a Global Pollutant (ICMGP)***

Jul. 24–29, 2011, Halifax, Nova Scotia, Canada. Contact: Leonard Levin, (650) 855-7929, llevin@epri.com. More information is available at the [event website](#).

**** Air Quality VIII Conference***

Oct. 24–27, 2011, Arlington, VA. Contact: Leonard Levin, (650) 855-7929, llevin@epri.com. More information is available at the [event website](#).

Global Climate

International Agricultural Trade Research Consortium's Public Trade Policy Research and Analysis Symposium—Climate Change in World Agriculture: Mitigation, Adaptation, Trade and Food Security

Jun. 27–29, Stuttgart, Germany. Contact: Steven Rose, (202) 293-6183, srose@epri.com.

**** 10th Annual IEA-EPRI-IETA Greenhouse Gas Emissions Trading Workshop***

Sep. 20–21, Paris, France. Contact: Adam Diamant, (510) 260-9105, adiamant@epri.com.

Land and Groundwater

Air & Waste Management 103rd Annual Conference & Exhibition

Jun. 22–25, Calgary, Canada. Contact: Naresh Kumar, (650) 855-2990, nkumar@epri.com. More information is available at the [event website](#).

**** Second International Conference on Sustainable Construction Materials and Technologies***

Jun. 28–30, Università Politecnica delle Marche, Ancona, Italy. Contact: Ken Ladwig, (262) 754-2744, keladwig@epri.com. Ken Ladwig will present a paper and chair a session on using fly ash in sustainable construction. More information is available at the [event website](#).

**** MGP Fall Meeting***

Aug. 10–11, West Point, NY. Contact: Jeff Clock, (845) 608-0642, jclock@epri.com, or Jim Lingle, (414) 355-5559, jlingle@epri.com.

**** Power Plant Air Pollutant Control “MEGA” Symposium***

Aug. 30–Sep. 2, Baltimore, MD. Contact: Leonard Levin, (650) 855-7929, llevin@epri.com. More information is available at the [event website](#).

Sixth International Conference on Remediation of Contaminated Sediments

Feb. 7–10, 2011, New Orleans, LA. Contact: Jeff Clock, (845) 608-0642, jclock@epri.com. More information is available at the [event website](#).

World of Coal Ash Conference

May 9–12, 2011, Denver, CO. Contact: Ken Ladwig, (262) 754-2744, keladwig@epri.com. More information is available at the [event website](#).

In Situ and On-Site Bioremediation: The Eleventh International Symposium

Jun. 27–30, 2011, Reno, NV. Contact: Jeff Clock, (845) 608-0642, jclock@epri.com. More information is available at the [event website](#).

*** 10th International Conference on Mercury as a Global Pollutant (ICMGP)**

Jul. 24–29, 2011, Halifax, Nova Scotia, Canada. Contact: Leonard Levin, (650) 855-7929, llevin@epri.com. More information is available at the [event website](#).

*** Air Quality VIII Conference**

Oct. 24–27, 2011, Arlington, VA. Contact: Leonard Levin, (650) 855-7929, llevin@epri.com. More information is available at the [event website](#).

Water and Ecosystems

*** Summer Water & Ecosystem Area Council Meeting**

Jun. 23–25, Whitefish, MT. Contact: Katie Vroom, (650) 855-2417, kavroom@epri.com.

*** Webcast: Ohio River Trading Project Quarterly Update**

Aug. 18, 10 a.m. PDT. Contact: Katie Vroom, (650) 855-2417, kavroom@epri.com.

*** Symposium: Hydrokinetic Electricity Generation and Fish: Asking the Right Questions, Getting Useful Answers**

Sep. 12-16, exact date TBD, Pittsburgh, PA. Contact: Paul Jacobson, (410) 489-3675, pjacobson@epri.com. This symposium will be held as part of the American Fisheries Society Annual Meeting.

*** Webcast: Ohio River Trading Project Quarterly Update**

Nov. 17, 10 a.m. PDT. Contact: Katie Vroom, (650) 855-2417, kavroom@epri.com.

T&D Environmental Issues

*** Containing the Spread of Non-indigenous Invasive Plant Species on Electric Utility Rights-of-Way**

Jun. 29–30, Milwaukee, WI. Contact: John W. Goodrich-Mahoney, (202) 293-7516, jmahoney@epri.com. This workshop is open to members of the ROW: Siting, Vegetation Management, and Avian Issues program (57).

Progress In Electromagnetics Research Symposium (PIERS)

Jul. 5–8, Cambridge, MA. Contact: Gabor Mezei, (650) 855-8908, gmezei@epri.com. More information is available at the [event website](#).

International Society of Arboriculture 86th Annual Conference & Trade Show

Jul. 23–28, Chicago, IL. Contact: John W. Goodrich-Mahoney, (202) 293-7516, jmahoney@epri.com. More information is available at the [event website](#).

*** 2010 EMF Scientific Advisory Committee Meeting**

Aug. 16–17, New York, NY. Contact: Gabor Mezei, (650) 855-8908, gmezei@epri.com.

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