

ENVIRONMENTAL SYNOPSIS

The Chairman's Corner

Rep. Scott E. Hutchinson, Chairman

If this were the popular TV game show "Jeopardy", this column would fall under the "Potpourri" category. A number of items related to the Joint Legislative Conservation Committee (Committee) and its mission have recently crossed my desk and I wanted to share them with you.



First, the fall legislative session begins this month and so does the special legislative session called specifically to discuss energy issues. Discussions of energy issues are not waiting until the session begins, however. They have begun in earnest already on several fronts.

The House Republican Policy Committee Energy Task Force, of which I am a member, held a series of public hearings and discussions on energy issues across the state. I co-chaired one such roundtable discussion in Pittsburgh recently. The topics have been diverse, ranging from alternative energy sources, energy efficiency and conservation to electric energy, smart meters and bio-based fuels to energy co-ops. The task force sought to build its base of knowledge by hearing from those working in the field every day. The task force has developed legislation, unveiled earlier this month, that seeks to lower energy prices, meet Pennsylvania's energy needs now and in the future, create new jobs and protect the environment.

Among the issues examined:

- *establishing new economically and environmentally stable sources of energy generation;*
- *creating a competitive environment in Pennsylvania where employers can succeed, while creating and sustaining good-paying jobs in the energy industry;*
- *producing energy from Pennsylvania's traditional indigenous fossil fuels in economical and environmentally responsible ways;*
- *lowering energy costs to consumers.*

The task force is not the only game in town, however. The House Consumer Affairs Committee is also holding hearings on energy and utility infrastructure issues. The governor is advocating for his own energy package, and the state Senate is examining energy options, conducting hearings on alternative energy mandates and is expected to offer legislation entitled the "Alternative Energy Investment Act". Earlier this month, Penn State's College of Agricultural Sciences brought experts in the field of "green energy" together at a two-day bioenergy conference. The U.S. Congress is taking testimony about ways to make coal-fired power plants more environmentally friendly and to find new clean coal technologies.

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NOTES FROM THE DIRECTOR



CRAIG D. BROOKS, EXECUTIVE DIRECTOR

I read with some interest recently that widespread acceptance of plug-in hybrid vehicles could significantly reduce U.S. greenhouse gas emissions by 2050. It would be equivalent to removing as many as one-third of today's cars and light duty trucks from the road.

According to a study by the Electric Power Research Institute (EPRI), the United States could cut more than 450 million metric tons of greenhouse gas emissions each year by 2050. This would be equal to removing 82 million passenger vehicles from the roads if plug-in hybrids are in wide use and assuming that the electric power meets more stringent controls on greenhouse gas emissions.

The EPRI study has been distributed as the first comprehensive assessment of whether plug-in vehicles could help curb automotive air pollution and greenhouse gas emissions, or might shift those emissions to electricity generators, including coal-fired power plants. Plug-in hybrid vehicles (PHEV) combine the aspects of both battery electric vehicles and power assisted hybrid electric vehicles. Unlike current hybrid vehicles, the PHEV can be recharged from the electric grid, store significantly more energy in an onboard battery, and has an internal combustion system for propulsion which can serve as a direct replacement for conventional internal combustion engine vehicles.

Is there a future for plug-in hybrid vehicles?

PHEVs leverage much of the existing technology of the hybrid vehicles – the primary difference is the incorporation of an energy battery that allows the PHEV to directly use grid electricity for propulsion.

Plug-in hybrid vehicles, under development by several automotive manufacturers for introduction by 2010, would build on the currently available technolo-

gy by allowing drivers to run the vehicles exclusively on the vehicle batteries for up to 40 miles. Drivers could then recharge the batteries by plugging into a standard 110-volt outlet.

The study suggests that widespread acceptance of such plug-in hybrids would result in small but significant improvements in ambient air quality for most regions of the United States, as well as reductions in specific pollutants such as mercury.

The EPRI study suggests that widespread acceptance of plug-in hybrids would mean small but significant improvements in ambient air quality and reductions in mercury and other specific pollutants

Plug-in hybrids would demand more electricity than the current fleet and therefore trigger some additional air pollution as power generators sought to meet that demand, the study says. However, there would be a net decrease in such pollution given the vehicles could one day outnumber traditional gasoline-fueled vehicles and the emissions associated with those vehicles.

PHEVs are receiving strong federal support. The Energy Policy Act of 2005 contained language supporting PHEVs and directed the Department of Energy to initiate the formation of PHEV research and development.

PHEVs were also featured prominently as one of four strategic technologies for the reduction of U.S. petroleum dependence in the Advanced Energy Initiative developed by the National Economic Council.

The EPRI study, "*Environmental Assessment of Plug-in Hybrid Vehicles*" is available at <http://www.epri-reports.org>.

RESEARCH BRIEFS

Each month, the committee's staff researches and prepares a number of "briefs" on several topics relevant to the Joint Conservation Committee's mission. Very often, these briefs include references to reports and further research on the topics so that readers may pursue issues on their own.

Pennsylvania May Lose State Tree and Flower Due to Global Warming

– Tony M. Guerrieri, Research Analyst

Can you name Pennsylvania's state tree? What about the state flower? The answers are the eastern hemlock and the mountain laurel, respectively. In the early 1930s, Governor Gifford Pinchot officially made them the state tree and flower. These plants are such icons of the Keystone State, that it is hard to imagine the commonwealth without them.

However, increasingly warm temperatures could mean the eastern hemlock and mountain laurel could one day find Pennsylvania too hot to call home. That is one of the predictions contained in a report on global warming by the National Wildlife Federation (NWF), which says Pennsylvania's official state tree and flower could move north to other states in a few decades.

The report, *"The Gardener's Guide to Global Warming: Challenges and Solutions"*, suggests that global warming, if unchecked, will slowly cause dramatic landscape shifts across the country – so much so that the official trees and flowers of numerous states, including Pennsylvania, simply will not be able to grow there anymore.

Most landscape professionals, gardeners and foresters are familiar with the U.S. Department of Agriculture's (USDA) Plant Hardiness Zone Map as a standard guide to a plant's cold tolerance. It has been an important tool when selecting trees, shrubs and perennials for the landscape for decades. Based on data collected from 1974 to 1986, the USDA map divides the United States into zones by averaging the lowest winter temperatures, and is used by gardeners to identify trees and flowers that will flourish in a particular part of the country and when they should be planted.

The map divides the United States into nine zones by 10 degree increments, from Zone 2 near the Canadian border to Zone 10 at the tip of Florida. (Zone 1 is found only in Alaska's frigid interior, where minimum

temperatures can go down to minus-50 degrees. Zone 11 is the warmest zone, only in tropical Hawaii, where lows do not drop below 40 degrees). According to the 1990 USDA version of the map, Pennsylvania was almost equally divided between two zones. Pennsylvania's northern tier was in Zone 5, stretching across the central Plains, where low temperatures were between minus-10 to minus-20 degrees. The southern half was in Zone 6, an area from Massachusetts to Kansas, where the lows hovered between zero and 10 degrees below.

Plant temperature zones are on the move... and the hotter zones are moving north

The report compares the USDA Hardiness Zone map with a 2006 map developed by the National Arbor Day Foundation. The Arbor Day Foundation map is based on the most recent data available from the last 15 years. The foundation map, using the USDA map of 1990 as a starting point, tracked some dramatic changes from then to 2006. Nationally, the map shows a northern shift in hardiness zones that reflect a general warming trend and a changing habitat for plants.

The Arbor Day Foundation map indicates that many bands of the United States are a full zone warmer, and a few isolated spots (mostly around the Rockies) are two zones warmer than they were in 1990. For example, all of northern Pennsylvania moved from Zone 5 to the warmer Zone 6 classification. Parts of southeast Pennsylvania have shifted from Zone 6 to Zone 7 (10 to 0 degrees) – the same zone as parts of North Carolina and the Texas Panhandle.

The hotter conditions mean that the eastern hemlock and mountain laurel, used to Pennsylvania's colder weather, might have a harder time. Some states are facing the possibility that trees and flowers that helped define their identities – the Ohio buckeye, the Kansas sunflower, or Maryland's black-eyed susan – may begin to disappear within their borders and move north. Nationally, the report found that by the end of the century, 35 state flowers and trees would go extinct in their home

states under the projected impacts of global warming.

The report offers tips for how gardeners can do their part to combat global warming. Ideas like reducing pesticide use and removing non-native species are not new when it comes to conservation and environmentally friendly gardening. But the report suggests that gardeners can take further action with techniques like: improving energy efficiency; reducing water consumption; incorporating a diversity of native plants in landscapes; and composting.

“Green” gardening practices would undoubtedly have a positive impact on the environment, as the report notes that in 2005 alone, an estimated 91 million U.S. households participated in lawn and gardening activities, spending \$35 billion.

The 40-page National Wildlife Federation report, *“The Gardener’s Guide to Global Warming: Challenges and Solutions”*, is available at: http://www.nwf.org/gardenersguide/Gardeners_Guide.pdf.

U.S. Carbon Emissions Decline in 2006

– Craig D. Brooks, Executive Director

U.S. emissions of carbon dioxide fell 1.3 percent in 2006, triggered in part by last year’s cooler than normal summer and a warmer winter that helped to cut overall energy use, according to the Energy Information Administration (EIA). Emissions of carbon dioxide generated by the combustion of fossil fuels such as oil, gas and coal declined from 5,955 million metric tons in 2005 to 5,877 million metric tons in 2006.



The decline in carbon dioxide emissions was largely the result of the 0.9 percent dip in total U.S. energy demand last year, according to the EIA report, *“U.S. Carbon Dioxide Emissions from Energy Sources: 2006 Flash Estimate”*. The EIA is the statistical arm of the Energy Department. According to the report, the 1.3 percent decline in emissions is an indication that the national approach to cutting greenhouse gases – which ranges from international partnerships with China, India and other nations to increased support of clean coal and alternative technologies – may be working.

In 2006, according to the report:

- ✓ **Commercial CO2 emissions declined 1.0 percent;**
- ✓ **Energy-related industrial CO2 emissions declined by an estimated 1.2 percent;**
- ✓ **Transportation emissions declined slightly – by 0.1 percent;**
- ✓ **Emissions from the electric power sector decreased by 2.0 percent;**
- ✓ **Non-fossil generation increased as hydro, wind, nuclear and biogenic waste power increased; and**
- ✓ **Residential CO2 emissions fell by 3.7 percent.**

However, 2006 was only the third year since 1991 in which the U.S. emissions of carbon dioxide from energy use have declined, with the previous declines in 1991 and 2001 largely attributed to economic downturns that depressed energy demand. Even after taking into account those declines, the cumulative increase since 1990 in U.S. carbon emissions from energy is nearly 18 percent, according to EIA figures.

Carbon dioxide emissions from U.S. energy use are projected to increase steadily over the next three decades, at 1.2 percent a year through 2030, as growing energy demand will likely be met. Carbon dioxide emissions are expected to increase as the nation increases its reliance on fossil fuels to meet increasing demands, according to the report. Fossil fuels are expected to provide 26 percent of the nation’s energy in 2030, up from 23 percent in 2005.

The Energy Information Administration report, *“U.S. Carbon Dioxide Emissions from Energy Sources: 2006 Flash Estimate”*, is available at <http://www.eia.doe.gov/oiaf/1605/flash/flash.html>.

Pennsylvania Ranked 14th in Energy Efficiency

– Tony M. Guerrieri, Research Analyst

To many, the answer to the problems of global warming and energy independence is inventing new energy technologies and building new, cleaner power plants. But there is a faster, cheaper and surer way, and almost no one does it better than the states of California, Connecticut and Vermont. These three states led the United States in energy efficiency in 2006, according to a report by the American Council for an Energy-Efficient Economy (ACEEE).

The ACEEE report, *“The State Energy Efficiency Scorecard for 2006”*, is a comprehensive ranking of

state-level energy efficiency policies. It grades each state and the District of Columbia on actions they have taken in the race to adopt energy efficiency policies, programs, and technologies.

States play an increasingly active role in driving energy policy. The report indicates that states spend three times as much money on energy efficiency programs as the federal government. They are also far ahead on appliance standards and building codes.



The ACEEE report documents best practices and recognizes leadership among the states. Past versions of the report ranked states on utility-sector energy efficiency spend-

ing only. The 2006 report expands the criteria to include eight energy efficiency policy categories, such as spending on public energy efficiency programs by utilities, with the highest score being 15 points; energy efficiency resource standards, five points possible; combining heat and power, five possible; building energy codes, five possible; transportation policies, five possible; appliance and equipment efficiency standards, three possible; tax incentives to boost energy efficiency, three possible; and state leading by example and research and development, three points possible. States can achieve a maximum possible score of 44 points.

According to the report, based on combined scores, three states, Vermont, Connecticut, and California, lead the nation in energy efficiency policy, all tying for the top spot, with 33 points each. Rounding out the top ten energy efficient states are Massachusetts (29 points), Oregon (28 points), Washington (27 points), New York (25 points) and New Jersey (22 points) in spots four through eight, respectively, and Rhode Island and Minnesota tying for ninth (each with 20 points).

The top 10 states earn the highest scores due to their records of spending on energy efficiency programs, building codes and appliances standards, and other programs that work to increase investment in energy efficiency.

The ACEEE report suggests that the states with the

strongest and most diverse efficiency policies offered residents reduced risk of price increases, lower energy bills, reduced risk of blackouts and lower greenhouse gas emissions.

Pennsylvania is a middle tier state, trailing moderately behind the top 10 at number 14.

The next 15 states' scores trail fairly moderately behind: all score more than 10 points, up to 17.5 points. The 15 middle tier states all have policies to increase efficiency in state-owned facilities, and most are committing funds to energy efficiency programs plus adopting codes and standards.

Pennsylvania is in the middle tier, ranked 14th overall among all states - scoring 16 points in the ACEEE's rating system. Pennsylvania earned three points for energy efficiency resource standards, four points for combined heat and power, four points for energy-efficient building codes, and four points for transportation policies.

Pennsylvania did lag in a few categories, including utility spending on energy efficiency with zero out of 15 points. Vermont earned the most points of any state in utility spending on energy efficiency. Its utilities spend over \$22 per capita while Pennsylvania utilities spend only \$0.28 per capita to improve energy efficiency.

Pennsylvania also received no points for appliance standards or tax incentives but did earn one point for leading by example (new and existing state building targets and energy efficient product procurement).

There was a wide gap between the top 25 (24 states and the District of Columbia) and the lower 26 states. No state scored zero points, though North Dakota did come close. Mississippi (one point), Wyoming (one point) and North Dakota (0.5 points) were at the bottom of the list.

The report was financed by a grant from the U.S. Environmental Protection Agency. The ACEEE, a Washington, D.C.-based nonprofit research and advocacy organization that promotes energy efficiency, conducts the scorecard each year. The full report, "*The State Energy Efficiency Scorecard for 2006*", is available at: <http://aceee.org/pubs/e075.pdf?CFID=605466&CFTOKEN=15380051>.

Public Administrators Group Urges EPA to Address Runoff

– Craig D. Brooks, Executive Director

A National Association of Public Administration (NAPA) panel urged the Environmental Protection Agency (EPA) to bring its programs to control non-point sources of pollution up to par with its point source programs to restore the large number of impaired waters.

NAPA found that the agency's wastewater and storm-water programs can be applied almost anywhere. In contrast, however, the EPA programs dealing with runoff, either stormwater or agricultural, are mostly experimental and often optional even when they do exist.

EPA estimates that there are about 40,000 impaired waters, of which about 70 percent might be degraded due to non-point sources of pollution such as nitrogen, phosphorus and sediment runoff from soil erosion, tree removal and land-paving activities.

The NAPA panel suggests that the agency's challenge is to ensure that both programs, non-point and point source, are broadly applied to accelerate the rate of restoration of impaired waters. Currently the rate of restoration is about 250 waters per year, according to the panel's report, *"Taking Environmental Protection to the Next Level"*.

To attack non-point source pollution, EPA should partner better with states, municipalities and non-governmental organizations, particularly when it comes to non-regulatory programs

NAPA recommended that EPA establish a more holistic intergovernmental approach through partnerships with states, municipalities and non-governmental organizations in cleaning up impaired waters that have been degraded mostly due to non-point sources of pollution. This approach would bring the non-point source program up to par with the point source program, the report suggests. It also emphasizes that EPA should establish more effective partnering in non-regulatory programs.

NAPA cites the Chesapeake Bay as an example of how EPA should approach water quality problems. The report says that the Chesapeake Bay partnerships at the interstate, state and local levels illustrate the type of

relationships that are needed to tackle the problems of impaired waters. NAPA acknowledges that water quality programs at the national, state and regional levels suffer from funding constraints and it urges EPA to seek more adequate and sustainable financing services.

NAPA further suggests that EPA broaden the purpose and revenue sources of the Clean Water State Revolving Fund (SRF). The SRF provides low-interest loans mostly for wastewater upgrade. Some loans are also provided for conservation and non-point source programs.

NAPA suggests that more SRF loans need to be given to communities to tackle issues of urban runoff. In 2006, EPA reported that wastewater treatment plants have received \$50 billion to assist with upgrades and repairs since the SRF program began assisting communities in 1988. That represents about 94.1 percent of the total of \$52.7 billion in revolving fund money that has been spent between 1988 and 2005.

The report says the remaining 5.9 percent has been spent on projects to control pollution from non-point sources and includes projects that use best management practices to control stormwater and agricultural runoff in urban and rural areas.

The NAPA report is available at http://www.napa-wash.org/pc_management_studies/EPA_FULL_Report_April2007.pdf.



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The newsletter examines timely issues concerning environmental protection and natural resources.

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ON THE HORIZON . . .

A LOOK AT UPCOMING EVENTS

- ✓ Thursday, October 4, 9 a.m. – 12 noon, Room 8E-A, Capitol East Wing, Harrisburg, PA - Public hearing on E-waste recycling
- ✓ Monday, October 15, 12 noon, Room 205 Matthew J. Ryan Building, Capitol complex, Harrisburg, PA - Environmental Issues Forum. The Pennsylvania Environmental Council will discuss its “Pennsylvania Climate Change Roadmap” report
- ✓ Thursday, October 25, 10 a.m., Penn Stater Conference Center Hotel, Executive Conference Room 2, State College, PA – Sewage Task Force meeting

Environmental Issues Forums are open to the public. Please call the committee office at (717) 787-7570 if you would like to attend.

COMMITTEE CHRONICLES . . .

REVIEW OF SOME MEMORABLE COMMITTEE EVENTS

This summer, the Committee joined with Keep Pennsylvania Beautiful in a “Roadside Aesthetics” workshop involving several state agencies, community organizations and speakers from other states.

The large crowd (photo at right) heard first from three PennDOT representatives about existing programs related to roadside aesthetics programs in Pennsylvania. Following these presentations, there was a facilitated discussion on “Sponsor a Landscape”, focusing on Pennsylvania’s points of entry, and a broader discussion on other ideas and issues.



The keynote address was offered by Charles Adams (photo at left), director of the Office of Environmental Design in Maryland’s Department of Transportation.

Meanwhile, Pennsylvania continues to look to expand its own use of alternative energy sources under the renewable energy portfolio adopted some time ago.

Suffice it to say that you can expect a lot of energy to be expended on energy this fall. It is an important issue and one deserving of the serious discussion it is getting.

* * *

Recycling, which has its own place in the energy debate, continues to be a topic of interest for the Committee. That's why the Committee is holding a public hearing into the recycling of electronic wastes, better known as e-wastes. The hearing will be held on Thursday, October 4 at 9 a.m. in Hearing Room 8E-A of the Capitol East Wing. Topics of discussion at the hearing will be current e-waste recycling proposals in Pennsylvania, and e-waste recycling programs offered in other states.

**The Committee will hold a public hearing on
e-waste recycling on Thursday, October 4, 9 a.m.
in Hearing Room 8E-A, Capitol East Wing**

Outdated, unwanted electronics in Pennsylvania and the United States comprise the fastest growing portion of our waste stream. Currently 400 million units per year of consumer electronics are being disposed of nationwide, and that is increasing. Rapid advances in technology mean that electronic products are becoming obsolete more quickly, and in addition, the Federal Communications Commission has mandated transition to digital television in February, 2009. This will increase the pace at which electronics are being disposed. The goal of the hearing is to seek out ways to develop an e-waste recycling program in Pennsylvania.

* * *

On another recycling front, it was recently announced that \$1 million is being made available to manufacturers to buy equipment to increase the use of recycled content in finished products. Applications for these Recycling Markets Infrastructure Development grants will be accepted until November 1. For more information on the grants program, or to obtain a grant application, visit the PA Department of Environmental Protection's website at www.depweb.state.pa.us, keyword: market development.

* * *

The Committee's Forestry Task Force welcomes and looks forward to working with Pennsylvania's new state forester, Daniel A. Devlin, who was appointed to that position by the Department of Conservation and Natural Resources (DCNR) earlier this month. Devlin, who has worked in a variety of positions for 26 years in the department's Bureau of Forestry, succeeds Dr. James Grace, who is now DCNR's deputy secretary for state parks and forestry. Devlin is a Penn State grad with a bachelor's degree in forest science, a minor in forest resources and a master's in wildlife management.



How to Contact The Joint Conservation Committee

Phone:
717-787-7570

Fax:
717-772-3836

Location:
Rm. 408, Finance Bldg.

Internet Website:
<http://jcc.legis.state.pa.us>

Mail:
Joint Conservation Committee
PA House of Representatives
P.O. Box 202254
Harrisburg, PA 17120-2254

