

ENVIRONMENTAL SYNOPSIS

The Chairman's Corner

Rep. Scott E. Hutchinson, Chairman



Earlier this month, the Joint Legislative Air and Water Pollution Control and Conservation Committee (Committee) held an informational meeting regarding the Marcellus Shale natural gas industry. The meeting proved to be enlightening on several levels, particularly in correcting some misconceptions and suggesting different points of view than what most folks might see or hear in the mainstream media.

Meetings like this one and public outreach meetings around the state are important because the proper development of the Marcellus Shale industry is important to the future of Pennsylvania. The natural gas believed to be located in the Marcellus Shale formation is having and will continue to have a major impact on Pennsylvania, not only environmentally but also economically, something we learned more about in discussing the impacts of exploration and drilling in the shale.

Consider these statistics. The latest estimate provided by one of the speakers for the potential recoverable gas in the Marcellus Shale is 489 trillion cubic feet, and geologists estimate there is a 100-plus years supply of natural gas at current rates of usage. The lifespan to drill and extract is likely decades. The Marcellus is the largest shale "play" in the U. S. and second largest in the world, with 50-plus companies (and counting) looking at the formation. In 2009, the Pennsylvania Department of Environmental Protection (DEP) issued 6,233 well permits: 1,984 of them were in the Marcellus, mostly in Northeast and Southwest Pennsylvania.

Among those speaking at the meeting were Thomas Murphy of the Marcellus Education Team of the Penn State Cooperative Extension Service, who discussed in detail resource development, community impacts, research implications and collaborative opportunities related to Marcellus Shale. John Hines, DEP Deputy Secretary for Water Management, and J. Scott Roberts, DEP Deputy Secretary for Mineral Resources

Management, provided an overview of Marcellus Shale issues and the state's regulatory programs. Bryan Swistock, a Water Resource Specialist from Penn State, offered valuable information about water quality, groundwater monitoring and brine storage and disposal. The Pennsylvania Fish and Boat Commission's Executive Director John Arway and Director of the Bureau of Policy, Planning and Communications Tim Schaeffer offered some comments on the commission's role and interest in the Marcellus Shale play. Also present to help answer questions and provide input during the discussion were the Marcellus Shale Coalition's President and Executive Director Kathryn Klaber, as well as Steve Rhoades with East Resources, Incorporated.

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Joint Legislative
Air and Water
Pollution Control and
Conservation
Committee

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NOTES FROM THE DIRECTOR

CRAIG D. BROOKS, EXECUTIVE DIRECTOR



The US Forest Service (USFS) has started an open, collaborative process to create and implement a modern planning rule to address current and future needs of the National Forest System. The rule would include restoring forests, protecting watersheds, addressing climate change, sustaining local economies, improving collaboration, and working across landscapes.

The USFS issued a Notice of Intent (NOI) to prepare an environmental impact statement on the land management planning rule it is developing for national forests. The impact statement and planning rule will provide a new framework for the management of national forests and grasslands.

A notice was published in the Federal Register and contains a number of principles for a planning rule, with an invitation for public comment.

There was a formal public comment period on the NOI that ended on February 16, 2010 and the USFS is processing the comments on the NOI. A summary will be posted on their website at <http://contentanalysisgroup.com/fsr/>.

Opportunities for timber harvesting, mining, grazing and other silviculture practices and economic activities are also included in the planning rule, as well as clean air, clean and abundant water, wildlife habitat, carbon sequestration, erosion control and other ecosystem services.

The principles outlined in the Federal Register encourage public participation in developing and

revising forest plans. The notice requests comments on how to foster collaborative efforts, effectiveness and transparency and how to improve administrative reviews.

The principles also look at the idea of extending the planning into neighborhood lands, including other federal lands and private lands.

While working toward a new forest planning rule, the Forest Service also completed a final rule that reinstates the 2000 forest planning rule. The 2000 rule has never been used to amend or revise a plan for a national forest or grassland because of the rule's complexity, according to the Forest Service.

Although the formal comment period has ended, the USFS will be holding public forums and roundtable discussions concerning the proposed planning rule beginning March 29, 2010 in Washington D.C. and continuing through mid-May, 2010. Please visit their website at: <http://fs.usda.gov/> for dates, times and locations. The public is encouraged to participate.

The USFS is also hosting a blog to encourage online discussion of the planning rule and they encourage participation in the process by visiting <http://blogs.usda.gov/usdablogs/planningrule/>.

From late March through mid-May 2010, the blog will follow the discussions of the science forums and roundtables, providing an opportunity for those not at the meetings to share their perspectives.

Public participation in the formation of a modern planning rule for the National Forest System is being encouraged by the U.S. Forest Service

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.

Blame Global Warming for the Blizzards

-- Tony M. Guerrieri, Research Analyst

It seems a paradox at first glance: how could record snowstorms have covered much of the Northeastern U. S. when the climate of the Earth is warming? According to a report by the National Wildlife Federation (NWF), there is some evidence that global warming could in fact make such massive snowstorms more common, even as the world continues to warm.

The report, *"Oddball Winter Weather: Global Warming's Wake-Up Call for the Northern United States"*, suggests that extreme weather will be a hallmark of the changing climate, and in fact may be the most common way in which people experience global warming. It outlines unusual weather events and predicts that in the coming decades, winters in North America will become milder and shorter, but punctuated by record-breaking snowstorms, all because of global warming.

Temperature is one of the most frequently used indicators of climate change. According to the report, on average, spring arrives 10 to 14 days earlier than it did 20 years ago. Since the 1970s, December-February temperature increases have ranged from one to two degrees Fahrenheit in the Pacific Northwest to about four degrees Fahrenheit in the Northeast to more than six degrees Fahrenheit in Alaska.

However, the report also states that, even with milder winters, most snowbelt areas are still experiencing heavy snowstorms. Some places are even expected to have more heavy snowfall events. There is evidence of an increase in lake-effect snowfall along and near the southern and eastern shores of the Great Lakes. Lake-effect snow is produced by the strong flow of cold air across large areas of relatively warmer ice-free water. As the climate has warmed, ice coverage on the Great Lakes has fallen. According to the report, the average December-May ice cover for the lakes has declined by about 17 percent per decade since the 1970s. This has created conditions conducive to greater evaporation of moisture and thus heavier snowstorms.

One particularly revealing index of extremity is the amount of snow cover. Since 1978, according to the report, the amount of snow in the Northern Hemisphere has decreased substantially (between three and nine percent), with especially rapid declines in the western part of the country. Snow cover is an important component of the Earth's climate system and is particularly vulnerable to global warming. The NWF report also says that precipitation falling as snow has declined by nine percent since 1949 in the Western U. S. and by 23 percent in the Northeast.

At the same time, the last few decades have brought fewer seasons with extremely high snowfall levels and more seasons with extremely low snowfall totals. Illustrating the oddball behavior, the report compares the year 2007, when Colorado snowpack levels were 50 percent below normal levels, to just a year later, when Colorado snowpack levels were 80 percent above normal.

The NWF report details "oddball" weather patterns and the effect they might have on winter weather

Tourism and recreation are important aspects of the economy. Increasing temperatures will affect winter activities, with projections of later snow and less snow coverage in ski resort areas, particularly those at lower elevations. These continued impacts may not be good to the estimated \$66 billion contributed to the U.S. economy from snow- and ice-dependent activities including skiing, snowmobiling and ice fishing. All of the combined weather changes listed in the report could add up to shorter seasons for winter recreation areas across the country.

The report states that many ski resorts will be able to cope with the climate change in the short term by increasing their snowmaking capacity. But snowmaking does not come without costs. On top of the tens of thousands of dollars needed for snowmaking machinery, there's the staff needed to run the equipment, the energy required to power them, and the natural resources like water and weather to make them work.

The report said the potential effects of erratic winter weather would not be confined to ski operations. Weather will have other impacts on ecosystems, natural habitats and agriculture including:

- **Disease and pest spread:** Extremely cold winter temperatures often inhibit the ability of pests and disease to spread beyond their natural limits. Without such cold, they can flourish, such as pine beetles in the mountainous West, causing massive pine tree die-offs.
- **Crop and plant loss:** Unusually warm weather can lead to premature crop planting and growth, as occurred in the Great Plains and Southeast in the March of 2007. However, when these conditions are interrupted by harsh winter weather, it can spell disaster as it did in April 2007, causing more than \$2 billion in crop losses. On the other hand, some plants – walnuts, peaches, and cherries – flourish with cold exposure and cannot thrive without it.
- **Infrastructure risks:** Government entities will have to plan for both wintertime flood management and roadway snow removal in response to erratic weather conditions.

The National Wildlife Federation's 12-page report is available at: http://www.nwf.org/News-and-Magazines/Media-Center/News-by-Topic/Global-Warming/2010/~media/PDFs/Global%20Warming/Reports/NWF_WinterWeather_Optimized.ashx.

DOD Needs Long-Term Plan to Meet Renewable Energy Goals

-- Craig D. Brooks, Executive Director

The Department of Defense (DOD) has fallen short of federal renewable energy consumption requirements and needs a long-term agency-wide plan to ensure that future targets are met in the face of new energy challenges, according to a Government Accountability Office (GAO) report.

The report, *"DOD Needs to Take Actions to Address Challenges in Meeting Federal Renewable Energy Goals"* also found that the office of the Secretary of Defense has not developed a long-term plan to identify and set strategy to address challenges in meeting renewable energy goals.

The Energy Policy Act of 2005 requires the DOD, which consumes about 60 percent of all energy consumed by federal facilities, to consume at least three percent of its power from renewable sources starting in fiscal year 2007. In addition, the 2007 Defense Authorization Act requires at least 25 percent of the electricity the department uses to come from renewable sources by 2025. In addition, a 2007 Executive Order directs that an amount equal to half of the

statutorily required renewable energy be generated by sources placed into service in 1999 or later. The Executive Order calls for federal agencies to reduce oil consumption, use alternative fuels, curb greenhouse gas emissions, and rely more on renewable sources of energy.

There are five recommendations given to the Department of Defense to improve long-term planning and better meet renewable energy goals

While the department met the goals of the 2005 legislation and the executive order in 2007, in fiscal year 2008 it fell short of the requirements laid out in the 2005 energy law. And, in fiscal year 2007 and 2008, the department overstated its progress toward meeting the goal of the 2007 defense authorization bill, according to the report.

The shortfalls came in the face of three challenges identified by the GAO:

- Renewable energy projects can be incompatible with installations' need to use land for primary mission objectives;
- Renewable energy is often more expensive than non-renewable energy; and
- Working with the private sector can be constrained by the lack of financial incentives and required environmental obligations.

GAO issued five recommendations to the Secretary of Defense in conjunction with the three armed forces secretaries (Army, Navy, and Air Force):

- Develop and issue guidance specifying how to accurately report the department's annual progress toward the 2007 Defense Authorization Act goal, as amended by the fiscal year 2010 Defense Authorization Act;
- Develop and issue guidance to assist the services in determining how to balance the use of land for renewable energy projects with their installations' primary mission;
- Facilitate the successful implantation of alternative approaches;
- Develop a long-term, department-wide plan to allow DOD to effectively and efficiently meet the renewable energy goals over the long term; and
- Develop information systems or processes that will enable the Office of the Secretary of Defense to oversee the department's renewable energy projects.

The DOD report is available at <http://www.gao.gov/new.items/d10104.pdf>.

Nuclear Power: Too Little, Too Late

-- Tony M. Guerrieri, Research Analyst

According to the U.S. Department of Energy (DOE), nuclear power produces about 19 percent of the electric power consumed in the U. S. That's behind coal which generates about 50 percent and natural gas with 21 percent. The DOE predicts the demand for energy in the country will grow by more than 20 percent by 2030. As the country looks for ways to reduce carbon emissions, there is a push for more nuclear plants. There are currently 104 nuclear reactors spread across 31 states.

But is nuclear energy the only way to meet America's future energy needs and reduce harmful greenhouse gas emissions that cause global climate change? The answer is no, according to a report by Environment America. The report, *"Generating Failure: How Building Nuclear Power Plants Would Set America Back in the Race Against Global Warming"*, analyzes the role, under a best-case scenario, that nuclear power could play in reducing global warming pollution.

The issue is not so much with what nuclear reactors could do, but rather the cost and time to build them and get them working

Nuclear power advocates in the U. S. have championed the idea of constructing at least 100 new nuclear power plants by 2030 as a strategy against climate change. The report argues that launching a nuclear power industry nearly from the ground up is too slow and expensive a process. Energy efficiency standards and renewable energy options are a better solution, the report concludes.

To avoid the most damaging consequences of global warming, America must cut power plant emissions roughly in half over the next ten years.

According to the report, nuclear power is too slow to contribute to this effort. Currently, no new nuclear reactors are under construction in the country, and no U.S. power company has ordered a nuclear plant since 1978. All orders for nuclear facilities after fall 1973 were eventually canceled, according to the report.

Meanwhile, building a reactor would probably take around a decade – 2016 at the earliest, the

report suggested. Without an existing infrastructure, manufacturing reactor parts with the scarcity of trained personnel would be difficult.

Construction delays are a huge cost. In Finland and France, nuclear power projects are way behind schedule and over budget, suggesting potential delays and other problems for new U.S. plant construction.

Advocates of nuclear power frequently portray it as an important part of any solution aimed at reducing greenhouse gas emissions. But even if the nuclear industry managed to build 100 reactors by 2030, the total power produced would reduce total U.S. emissions by only 12 percent over the next 20 years, which Environment America deems "far too little, too late."

DOE predicts energy demand will grow by more than 20 percent by 2030

In contrast, energy efficiency and renewable energy can immediately reduce global warming emissions. Energy efficiency programs are already cutting electricity consumption by one to two percent annually in leading states, and the U.S. wind industry is already building the equivalent of three nuclear reactors per year in wind farms. In fact, the report states that America has vast potential to do more.

The \$600 billion upfront investment necessary for the 100 reactors (which could leap to \$1 trillion) would slice out twice as much carbon pollution in that period if invested in energy efficiency and clean, renewable energy instead, according to the report. And given the cost of running a power plant, clean energy could deliver five times as much progress per dollar in lowering pollution.

Environment America accepts that nuclear energy is a climate-friendly source of electricity. The organization's complaint is with the cost and time. By 2018, nuclear power will be among the least cost-effective options for reducing global warming pollution.

Environment America is a federation of state-based, citizen-funded environmental organizations working for clean air, clean water and open space.

The Environment America report is available at: <http://cdn.publicinterestnetwork.org/assets/3962c378b66c4552624d09cbd8ebba02/Generating-Failure-Environment-America-Web.pdf>.

Study Finds Demand for Electric Cars in NYC Could Outstrip Supply

-- Craig D. Brooks, Executive Director

The potential pool of New York City residents willing to switch to electric vehicles is large enough that demand could outstrip supply by 2015, according to a new study. The study projected that by 2015, up to 16 percent of all new vehicles purchased by city residents could be electric.

The study, *"Exploring Electric Vehicle Adoption in New York City"*, was commissioned as a part of the long-term plan for environmental sustainability. The study added, however, that despite strong interest from early adopters, only limited numbers and types of electric vehicles are expected to be offered in the New York region to meet the projected demand.

The principle of supply and demand applies to the usage of electric vehicles in the future in the Big Apple

Because the city has unique driving and parking patterns, the study focused on ways that residents can prepare for expected increases in the use of electric vehicles and on ways to encourage residents to make the switch from gasoline powered vehicles. To help in the transition, the study urged early policy actions tailored to educate consumers on benefits and challenges and offer them a convenient and easy process to install necessary charging equipment.

The report found that if there is sufficient demand, auto manufacturers appear willing to dedicate a number of electric vehicles to markets like New York. Neither high-density public charging infrastructure nor local tax incentives seem necessary for early adopters to switch to electric vehicles, the study said.

While the average driver may be concerned about the availability of retail and curbside charging locations, the study suggests that the earliest buyers of electric vehicles are strongly committed to the environmental benefits of changing their driving habits, behavior and parking locations.

The study also found that buyers are willing to pay a premium to purchase a vehicle, and local sales tax incentives or dealer rebates may only serve to subsidize early buyers who have already made the decision to purchase an electric vehicle, rather than attracting additional demand.

The projected growth level for electric vehicles in the city should not burden the electricity grid as long as most charging is set up to take place during off-peak hours, the study said. Ongoing coordination could alleviate the need for new infrastructure, the study suggested, recommending a partnership between the city and auto manufacturers, such as the Con Edison electric utility. Because many city residents don't own vehicles, the study suggests that the city investigate data on exactly how many city residents would purchase electric vehicles before implementing a plan for their use.

The study may assist city officials in evaluating the nuts and bolts of how government, auto manufacturers, utilities and others will support a new type of vehicle on city streets.

The report, *"Exploring Electric Vehicle Adoption in New York City"*, is available at http://www.nyc.gov/html/planyc2030/downloads/pdf/electric_vehicle_adoption_study_2010-02.pdf.

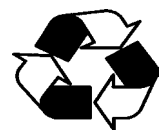


Check Out Our New Website

Visit Us at <http://jcc.legis.state.pa.us> To See Our New Look

The Committee's redesigned website is up and running. Please visit the new website at <http://jcc.legis.state.pa.us>.

We are hopeful that you will find it easier to navigate the site and make use of it, and that you will find the new look more attractive.



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ON THE HORIZON...

A LOOK AT UPCOMING EVENTS

✓ Wednesday, April 7, 2010, 9:00 a.m. to 12 noon, Mahanoy City Downtown Center, Second Floor, 1 West Centre Street, Mahanoy City, PA – Public Hearing – The hearing topic is “The Future of Anthracite Coal in Pennsylvania.”

✓ Monday, April 19, 2010, 12 noon, Room G-50, K. Leroy Irvis Building, Capitol Complex, Harrisburg, PA – Environmental Issues Forum – PA Cleanways and the Center for Rural Pennsylvania will provide an Earth Day program focusing on PA Cleanways’ illegal dumping survey and survey analysis, as well as plans for the Great American Cleanup.

Please call the Committee office at 717-787-7570 if you plan to attend any of these events. Also, check the Committee website at <http://jcc.legis.state.pa.us> for events that may be added to the schedule.

A REVIEW OF SOME
MEMORABLE COMMITTEE
EVENTS

COMMITTEE CHRONICLES...

The topic of the Joint Legislative Air and Water Pollution Control and Conservation Committee’s first Environmental Issues Forum of 2010, held in February, was advances and development of the scrap tire and rubber recycling markets.

The guest presenters were George Soukas and John Aten, President and Vice-president of sales respectively for Regupol America of Lebanon, PA. Regupol America, founded in February 2008, is a manufacturer of recycled rubber products with both a national and international sales presence and customer relationships in more than 80 countries. Its key products are health and fitness flooring, flooring underlayment, sound dampening products, and commercial rubber flooring. Regupol America has installed the latest rubber processing equipment in its two relatively new facilities and is on the industry’s cutting edge.



Committee Chairman Rep. Scott Hutchinson (center) chats with the guest speakers, George Soukas (right) and John Aten upon completion of their presentation.

So, what did we learn? First and perhaps foremost, we learned the importance of education. Whether one is a property owner, a legislator, an industry executive, a regulator or just a citizen, it is vital that we educate ourselves about the entire process of "opening up" the Marcellus Shale formation. Education is key to understanding what is really true and what is not true...how to develop the industry while protecting the environment...how to protect one's property rights and learn what the rights are of companies seeking to lease and explore the land. We learned not to always believe what we hear, and the importance of facts as opposed to emotion.

For example, the DEP representatives and others pointed out that gas migration issues are not problems related primarily to Marcellus Shale, but rather to Pennsylvania's numerous old abandoned gas wells or conventional gas wells. Similarly, pollution problems from "frac fluids", the water/sand/chemical mixture used to fracture shale to allow the gas to be collected, are most often caused by above-ground mistakes (i.e., a leaking truck or hose or a spill from a truck or container on the ground), as opposed to the piping and drilling below ground. Deputy Secretary Roberts emphasized that spill prevention was key.

We learned that drilling for natural gas in the Marcellus has impacts in areas one might not have considered. For example, there are housing issues, as workers are imported to work sites and need places to live, and what that might do to rental prices and housing availability. A large industry such as this means new and more complex responsibilities for local elected officials, and new opportunities but also new problems for local banks and businesses. Workforce training may be needed to supply trained employees for drilling operations. There are land use issues related to pad sites and pipelines. These are in addition to obvious issues such as water quality, environmental disturbances and restoration.

We learned that major problems are not as prevalent as might have been thought. There was general agreement that of the 19,165 wells drilled (both conventional and Marcellus Shale) in Pennsylvania in the last five years, less than one percent have had major problems. And the vast majority of those were erosion and sedimentation issues above ground on the drill pad site – not underground. Another major area of concern – and a high profile one - is road use, damage and restoration. Heavy trucks carrying fluids and equipment can damage local roads, and road use agreements with local municipalities are becoming more common. Increased use of piping to carry water is lessening road use in a number of cases.

We learned that forewarned is forearmed. In addition to education, the time to plan ahead for possible problems and avoid them is during the lease negotiation process. Don't wait until after a lease is granted and exploration or drilling has begun to wish "if only" or ask "what if". Take care of that in advance.

We learned that Marcellus Shale exploration is a developing, growing process, creating new opportunities and concerns as it progresses. As more leases are granted and wells drilled, new issues that do arise must be and are being dealt with. DEP, for example, is emphasizing more modern standards for casing and cement in drill holes, and is developing new regulations to address issues concerning total dissolved solids in water. The Senate Environmental Resources and Energy Committee recently reported out legislation to require regulations for oil and gas wells to minimize the threat of damage to water supplies and better protect public safety. Bryan Swistock noted that Penn State is conducting a research project to intensively monitor water wells near Marcellus drilling operations and to take a broader look at post-drilling issues. The Fish and Boat Commission is working on disinfectant protocols. DEP believes mineral ownership may well become a new legislative issue related to the Marcellus play. In short, it is a fluid situation – no pun intended.

The Committee anticipates that the discussion over Marcellus Shale will be an ongoing one. That's one reason we toured a brine treatment plant and also held an Environmental Issues Forum later this month on the subject. As one of the speakers noted, the Marcellus represents a real change in Pennsylvania's energy future; one we need to be prepared for and educated about.

How to Contact The Joint Conservation Committee

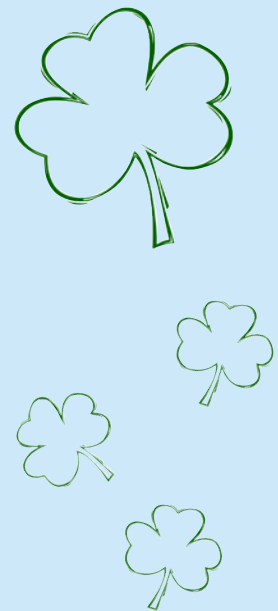
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