



ENVIRONMENTAL SYNOPSIS

The Chairman's Corner

Rep. Scott E. Hutchinson, Chairman



The Joint Legislative Air and Water Pollution Control and Conservation Committee (Committee) has long been a booster of recycling efforts, and this summer had an opportunity to demonstrate its support for recycling in a real hands-on way.

You may recall that in August, the Committee staff joined a group of hundreds of volunteers on the set of the Emmy-winning ABC-TV show *Extreme Makeover-Home Edition*. The episode was filmed in Tilden Township, Berks County, and was televised on October 24.

For those not familiar with the show, the show's cast works with local builders and volunteers to construct a home in one week for a deserving family which the show's producers have selected. In this case the Berks County Homebuilders Association coordinated an army of volunteer skilled labor and enthusiastic (if less skilled) volunteer helpers to demolish a nearly unlivable farmhouse and construct a brand-new English cottage-style home for the Urban family. The new home is complete with windmill, solar panel, gazebo and "critter cottages" for the family's farm animals. The beneficiaries in this "Urban Fairy Tale" episode were single mother Trish Urban and her one-year-old daughter Cora. Trish Urban had lost her husband to a congenital heart condition just hours before giving birth to Cora in February 2009.

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To see photos of the *Extreme Makeover – Home Edition* project site, go to Committee Chronicles on page seven

With that brief history, let's move on to the link to recycling. The Committee volunteers were invited to participate in the show's filming by the Pennsylvania Recycling Markets Center (RMC). The RMC played an important "supporting role" in the show in several ways. The first was by providing technical counsel on selection and use of recycled content building products in the project. The RMC also coordinated the use of Pennsylvania-manufactured recycled content building materials with the show's build team and the Berks Homebuilders Association. The intent was to maximize the use of

(continued on page 8)

NOTES FROM THE DIRECTOR

CRAIG D. BROOKS, EXECUTIVE DIRECTOR



The majority of states are moving forward toward meeting the Environmental Protection Agency's (EPA) deadline for permitting greenhouse gas (GHG) emissions under the Clean Air Act. According to an analysis by the National Association of Clean Air Agencies (NACAA), nearly 80 percent of states will be ready to implement GHG emission permitting requirements by the January 2, 2011 deadline set by EPA. That is the date that GHG permitting under the act's Prevention of Significant Deterioration (PSD) and Title V Greenhouse Gas Tailoring Rule (Tailoring Rule) programs begins.

Of the states that will not have rules in place by the deadline, most are working to incorporate the permitting requirements, but will be delayed due to state legislative or regulatory constraints. A few states will not be able to implement the requirements until 2012.

EPA issued rules earlier this year regulating GHG's under the Clean Air Act, including rules that exempt smaller sources and subject only the largest GHG emitters to permit requirements. In response to calls from states for more time to revise state and local regulations to exempt smaller sources, the agency also delayed the GHG permitting deadline until January 2, 2011.

In December 2009, pursuant to a federal court decision that GHG's are an air pollutant under the Clean Air Act, EPA and the Department of Transportation issued a final rule on April 1, 2010 controlling GHG's from new motor vehicles and engines. Once these become subject to regulation under the Clean Air Act, permitting provisions under PSD and Title V are triggered and implementation of control technologies to abate GHG's will also begin.

The PSD and the Tailoring Rule were promulgated in June 2010 to address concerns about the administrative burden these permitting regulations from

sources emitting only very small amounts of GHG's would create for states and local authorities. The Tailoring Rule raised the thresholds for GHG permitting to include only the largest sources and extended the onset of GHG permitting in order to give states time to revise their own rules to handle the requirements and exempt smaller sources. As the analysis proves, most states are moving forward with legislative and/or regulatory processes to incorporate the Tailoring Rule provisions.

In the final Tailoring Rule, EPA asked states to send letters to the agency by August 2, 2010 with information regarding how the states intend to implement the Tailoring Rule. EPA asked each state to respond by

indicating whether or not the state needs to undertake a regulatory or legislative process in order to incorporate the Tailoring Rule, as well as a timeline for completing such a process.

States were also asked to notify EPA if they did not intend or have the authority to permit GHG's.

The NACAA, the air pollution control agencies in all 50 states, the District of Columbia and Puerto Rico, and over 165 metropolitan areas across the country have reviewed and briefly summarized letters from all applicable states which showed that the majority of states are working quickly to incorporate the Tailoring Rule and prepare for the 2011 deadline. According to NACAA, two states – Nebraska and Nevada – as well as the District of Columbia, have not submitted Tailoring Rule letters to EPA, and Nevada and the District of Columbia do not have approved PSD programs. Only Arizona, Texas and Wyoming have indicated that they do not intend to implement the requirements by January 2, 2011, or at all. They have sent letters to EPA strongly critical of the agency's greenhouse gas regulations and question their legality.

Most states are moving forward to meet the greenhouse gas emissions permitting requirements set by the Environmental Protection Agency

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.

74 Miles Per Gallon for Internal Combustion Engine Vehicles by 2035?

-- Tony M. Guerrieri, Research Analyst

With all the hype surrounding electric cars and plug-in hybrids, you could be forgiven for thinking the familiar gasoline-powered internal combustion engine is an endangered species. While few doubt that alternative technologies are an inescapable part of the car future, a report by the Energy Foundation suggests that improving the efficiency of combustion engine technology is the most immediate cost-effective means of reducing dependence on foreign oil and cutting tailpipe emissions of carbon dioxide.

The report, *"A Fuel Efficiency Horizon for U.S. Automobiles"*, examines how far fuel economy can be taken if it becomes a priority in product planning. It argues that if automakers start making combustion engines super-efficient, they can meet much higher fuel efficiency standards.

Recently, the U.S. Environmental Protection Agency and the U.S. Department of Transportation began the process of setting fuel economy standards for the 2017-2025 window. For now, they are envisioning cars in 2025 that get between 47 and 62 miles per gallon (mpg).

With nearly 100 percent of vehicles powered by gasoline, improving the fuel efficiency of combustion engines is the first step. The report examines the rate of technology increase from the time fuel economy standards were first passed in 1975 through today. Combining increases in both fuel economy and performance, the rate of technological improvement in internal combustion engines had been about 3.8 percent a year. The report argues that if all this improvement went into fuel economy, and horsepower were held to current levels, it would be possible to reach over 70 mpg by 2035.

Optimizing combustion engines plus increasing adoption of hybrids will enable new fleet efficiency to reach 52 mpg by 2025 and 74 mpg by 2035, the report predicts. Compared to a federal 2005 average new car fuel economy 25 mpg baseline, that is a tripling of fuel economy.

In the report's scenario, it projects the average car in 2035 would save 5,254 gallons over its lifetime compared to a similar 2005 vehicle, and would emit 47 tons less carbon dioxide.

The report projects a large percentage of conventional "grid-free" hybrid cars on the road by 2035. It does not factor in the electrification of the auto fleet with plug-in hybrids or all-electric cars.

The report identifies emerging trends for what it terms "efficiency compatible" design strategies, enticing buyers away from horsepower and toward smart technologies, intelligent safety features and styling. Amenities like Bluetooth connectivity, on-board Internet, and other information technology enhance customer value with minimal demands on power.

As cars grow friendlier from a passenger standpoint, they should also grow smarter under the hood. For one, reduced engine size and overall mass is an easy way to increase efficiency. The report indicates that for every 10 percent of reduction in weight, you get a 6.5 percent increase in fuel efficiency, and the inertial recovery of regenerative brakes on hybrids can push the efficiency even higher. Add in an optimized powertrain and efficiency increases further.

Cars will need to grow friendlier from the passengers' point of view as well as smarter under the hood

Moreover, some concept cars have been experimenting with lightweight body materials like composites, increased aluminum and magnesium content, and carbon fibers that further reduce weight without reducing size, meaning more efficient but still full-sized cars.

Layer that with better aerodynamic designs, reduced tire drag, smarter transmissions, and leaner, lighter engine blocks – a real contributor to mass – and pretty soon you've got a smarter power source pushing 20 percent less weight (760 pounds for light fleet vehicles, or 30 pounds per year over the 25 year horizon).

Materials have to be safety rated, technologies proven, and – perhaps more importantly – customer appeal retained. The challenge is finding the right combination of features and technologies to build the cleanest, consumer-friendly car on the road while keeping costs under control.

Such fuel efficiency improvements will not come free, so the next question is what will it cost to build super-efficient cars that use gasoline more frugally. The report estimates suggest that if the 74 mpg benchmark is reached, it could elevate the sticker price of every vehicle by as much as \$4,200 (in 2010 dollars). But, to be fair, the flip side is that with more efficient cars consumers can save at the pump. For example, if one assumes a price of \$2.80 a gallon for gasoline in 2035, the savings would be \$14,700 over the lifetime of the vehicle. Since gasoline is very likely to cost more in 2035, the actual savings would probably be greater.

The Energy Foundation Report, *"A Fuel Efficiency Horizon for U.S. Automobiles"*, is available at: <http://www.hybridcars.com/files/fuel-efficiency-horizon.pdf>.

Canadian Review Finds No Basis to Ban Offshore Oil, Gas Activity

-- Craig D. Brooks, Executive Director

Following the explosion of British Petroleum's Deepwater Horizon in April 2010, reactions to offshore drilling around the world have been many and varied. However, according to a recent Canadian study and review, there is no basis for a temporary or permanent ban on offshore drilling and natural gas operations in Canada. But, says the review, any future offshore drilling must be carefully monitored, regulated and controlled, particularly in Arctic waters.

The review, prepared by the Canadian Senate Energy, Environment and Natural Resources Committee (Committee) reviewed the country's regulatory system for offshore drilling and concluded that while offshore drilling is inherently risky and costly, there is a need to balance the risk factors with the need for energy security and other economic factors. The review suggests that over-regulation and excessively rigid safety requirements could discourage investment, and that evidence suggests that striking a risk-reward balance is the way to proceed.

The Committee makes the following six recommendations with regard to offshore oil and gas drilling:

1. Do not ban current offshore drilling either permanently or temporarily while Canada's government re-evaluates the regulatory regime, safety measures and contingency plans in light of the Deepwater Horizon oil spill.
2. Explore in greater detail the structure and role of offshore petroleum regulatory agencies to determine whether there may be in fact a material conflict between regulator roles.
3. Have a thorough discussion between regulators and industry respecting whether and under what circumstances relief wells should be prescribed. As was the case

in the Gulf of Mexico, a relief well can take several months to complete and appears inadequate to maximize oil spill containment and minimize environmental damage.

4. There should be greater collaboration between all those responsible for responding to an oil spill in developing, preparing and practicing in advance of an event.

5. All offshore operators should be required to organize spill response drills at regular intervals.

6. Conduct a comprehensive review of the issue of liability, including whether the thresholds should be adjusted to reflect current economic realities.

According to the review, the Committee heard sufficient evidence to assure Canadians that their offshore oil and gas industry is well regulated and monitored and could not justify any temporary or permanent ban or moratorium on current offshore operations.

The review is available at <http://www.parl.gc.ca/40/3/parlbus/commbus/senate/com-e/enrg-e/rep-e/rep08aug10-e.pdf>.

Report Theorizes Climate Change May Mean More Extremes in Oregon

-- Tony M. Guerrieri, Research Analyst

A report by the Oregon Climate Change Research Institute (OCCRI) warns of the potentially significant environmental and economic changes the state may experience as a result of climate change and greenhouse gas emissions. Created by the 2007 Oregon legislature, the OCCRI prepared the report to examine how greenhouse gases could impact the state in the next half-century.

The *"Oregon Climate Assessment Report"* attempts to spell out the likely statewide effects of projected warmer temperatures and sea level increases, exacerbated by expected population growth.

The report notes that a changing climate is nothing new. Around 700 million years ago, for example, there may have been ice sheets near the equator, while 100 million years ago, plants that could be killed by a hard frost lived at the Arctic Circle. But the warming trend of recent decades, according to the report, is greater than at any time in roughly the last 120,000 years.

Oregon has been and will continue to be affected by a gradual warming. The report suggests that human activities (mainly the burning of coal, oil and natural gas) are partially responsible for the observed 1.5-degree (Fahrenheit) increase in 20th century temperatures. Climate models suggest likely future temperature increases of 0.2 degrees to 1 degree a decade in Oregon and the

Northwest, with hotter, drier summers and total warming of 2 degrees to 10 degrees through 2100. The Northwest, including Oregon, appears to be particularly susceptible to the effects of climate change.

In Oregon, no other effect of climate change is as significant as how it impacts the state's snowpacks and fresh water supply. According to the report, summers will become drier. A compilation of different models suggests the state's average summer precipitation will decline by about 14 percent by the year 2080.

Also, by the mid-21st century, Cascade Range snowpacks are projected to be less than half of what they were in the 20th century, with lower-elevation snowpacks (which drive water supply in the summer) most vulnerable. As a result of these changes, the report foresees problems with summertime water supply in some areas as Oregon's population keeps rising.

The decrease in the water supply will coincide with an increase in irrigation demands. Each 1.8 degree rise in temperature is predicted to increase irrigation demands by 10 percent, the report says. However, warmer weather may create new opportunities for agriculture with a longer growing season creating the potential for greater yields and different crops. Wine growers, for example, already have seen the length of the frost-free period increase from 17 to 35 days. But warming would not be so good for Pinot Noir, Oregon's main variety, and growers would have to plant other wine grapes.

Wildfires are projected to increase in all forest types in the coming decades because of warmer, drier summers and an increase in fuel. Large fires could become more common in Western Oregon forests.

The report attempts to describe the likely statewide effects of warmer temperatures and sea level increases heightened by population growth

Oregon's coastal region will be subjected to more intense storms and higher waves, creating greater risk of flooding. The North Pacific winter storm track could shift northward in the 21st century, meaning slightly fewer, but more intense, storms and more coastal flooding. It is "nearly certain" that the sea level will rise, possibly 2 to 4 feet by 2100, and the rate of sea level rise will surpass the vertical land movement taking place through geological processes along the Oregon coast by the mid-21st century.

In a warmer climate, plant and animal species could shift to higher elevations or to the north. Rare or endangered species could become less abundant or extinct, and insect pests and invasive species could increase.

In addition, increases in ocean temperatures and acidification likely will further disrupt marine ecosystems and could lead to more hypoxia and so-called "dead zones" in normally productive near-shore waters, along with harmful algae blooms and challenges for shellfish and other sea creatures.

A key variable to these and other changes are global greenhouse gas emissions that will influence Oregon's future climate. The key drivers of emissions are population, consumption and the emission intensity of the economy.

Because of Oregon's relatively small population and its reliance on hydroelectric power, which produces no greenhouse gases, the state's overall carbon footprint – the amount of carbon emissions from residents and businesses – is smaller than in many other states, the report said.

Per capita, Oregon emissions are the 11th lowest nationally and 20 percent lower than the national average. However, internationally the state does not stack up as well. According to the report, the state's emissions are nearly double the European community average and almost three times higher than the global average.

The 400-page comprehensive report is available online at: www.occri.net/ocar.

EPA Releases Draft Clean Water Strategy

-- Craig D. Brooks, Executive Director

The Environmental Protection Agency (EPA) has released a draft clean water strategy that outlines plans for new rules and other initiatives to prevent water quality degradation, better manage runoff from animal feeding operations, expand coverage of municipal stormwater permits and promote green infrastructure. EPA says that it would use bold, new, creative and more effective ways to implement the Clean Water Act by applying existing regulatory authority and enforcement programs in a more strategic way and using voluntary approaches and market-based incentives.

The draft document, *"Coming Together for Clean Water: EPA's Strategy for Achieving Clean Water"*, reflects in part the realization that although the clean water program has traditionally focused on controlling point source pollution from industrial plants, some of the most significant factors in water degradation today are attributed to agriculture, stormwater runoff, habitat and hydrology. EPA's strategy must now meet these shifting priorities.

According to the draft strategy, improving the assessment and classification of waters to provide a baseline is a key element to the plan. Specifically, the plan calls for EPA to complete the first set of five Aquatic Resource Surveys that will provide a more complete picture of the condition of all water body types across the nation.

The draft strategy lays out a plan to focus on five broad areas:

- ⇒ systematically assessing U.S. waters to provide a baseline for tracking progress;
- ⇒ enhancing the agency's ability to restore degraded waters and ecosystems;
- ⇒ increasing the focus on protecting healthy waters;
- ⇒ reducing new pollution; and
- ⇒ enhancing the resiliency of watersheds.

Among the specific regulatory actions outlined in the draft is an EPA initiative to propose changes to federal water quality standards that would clarify regulations that would protect high quality waters. The document provides details on a proposed rule to help reduce the rate of new water quality impairments and increase the rate of water quality improvements. The proposal would focus on providing tools that protect high quality waters and clear a pathway for restoring impaired waters.

In the draft strategy, EPA says that it wants to ensure that regulatory agencies are applying anti-degradation policies effectively in National Pollutant Discharge Elimination System (NPDES) permitting. Also, EPA says it intends to strengthen the NPDES program to significantly reduce pollution entering the U.S. waters. For example, EPA plans a proposed rule to streamline the regulatory authority to designate animal feeding operations as concentrated animal feeding operations, or CAFO's.

The agency has struggled with its efforts to regulate CAFO's over the years and in November 2008 issued a final rule requiring CAFO owners and operators that proposed to discharge wastewater to apply for a permit. In more recent developments, EPA earlier this year agreed to issue a new proposed rule to require all CAFO's to submit details to the agency about their operations and to update the information every five years. In May 2010, EPA issued guidelines designed to help owners and operators perform assessments of their feedlots and to assist in compliance.

The document also says that EPA would promote green infrastructure more broadly, ensure that municipalities would separate stormwater system permits, use more cost-effective green infrastructure approaches, include green infrastructure in long-term control plans for combined sewer overflows, and consider incorporating green infrastructure alternatives in enforcement orders and consent decrees.

In addition, plans call for the development of requirements for publically owned treatment works to fully address sanitary sewer overflows, expand municipal stormwater permitting coverage to currently unregulated areas and establish performance standards for stormwater discharges from newly developed and redeveloped sites that result in reduced discharges.

The strategy covers a variety of topics as it seeks new ways to implement Clean Water Act provisions

According to EPA, the restoration of impaired water bodies will be critical, and it plans to work with states to implement more effective pollution reduction strategies, including total maximum daily loads and watershed non-point source plans. EPA will also seek solutions and implement programs to address invasive species and emerging contaminants entering the waterways.

According to EPA, by approaching the most significant clean water challenges facing the nation from a more holistic perspective and using resources creatively, the agency will undertake a range of actions to implement a better understanding of the nation's waterways and expand the work of the Clean Water Act.

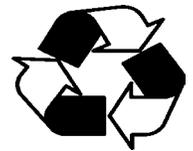
The draft strategy is available at <https://blog.epa.gov/waterforum/wp-content/uploads/2010/08/Coming-Together-for-Clean-Water-Disc-Draft-Aug-2010-FINAL.pdf>.

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Readers are also reminded that the *Synopsis* is available on the committee website each month after the *Synopsis*' printing. The website address is <http://jcc.legis.state.pa.us>.



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ON THE HORIZON ...



- ✓ **Monday, January 24, 2011, 12 noon, Room G-50 Irvis Office Building, Capitol Complex, Harrisburg, PA – Environmental Issues Forum** – Marci Mowery, president of the PA Parks and Forests Foundation, will present a program on the Goddard Legacy Project, a campaign celebrating the accomplishments of Maurice K. Goddard, considered to be the “Patriarch of PA State Parks,” and his vision and values regarding the conservation of PA’s natural resources.
- ✓ **Tuesday, February 15, 2011, Capitol East Wing, Capitol Complex, Harrisburg, PA – PA Recycling Industries Congress 2011**, organized by the PA Recycling Markets Center and the PA Waste Industries Association. All day event with evening reception. Visit www.parmc.org or e-mail info@parmc.org for more information.

Please call the Committee office at 717-787-7570 if you plan to attend the Environmental Issues Forum.

A REVIEW OF SOME MEMORABLE COMMITTEE EVENTS

COMMITTEE CHRONICLES ...

Pictured below are scenes from the Berks County site of the *Extreme Makeover–Home Edition* television show, where staff from the Joint Legislative Air and Water Pollution Control and Conservation Committee (Committee) served as volunteers.

The photos depict the home under construction and completed, and an example of the “critter cottages” that were constructed for the family’s farm animals.

Read the Chairman’s Corner article on page one for details about the project and the role of the Committee and the PA Recycling Markets Center.



recycled content products and also to maximize the use of Pennsylvania recycled products.

As a result of the RMC's efforts, more than 20 companies donated recycled content building products and materials management services to the project, while more than 300 organizations participated in the build. Among the building products from Pennsylvania recycling collections used in the build were manufacturing ingredients of steel, paper, aluminum, glass, plastic, compost, soil and rubber.

For those who are into numbers, the weight of the reused, recycled and recovered materials used in the project came to 90.09 tons. According to the RMC, that's roughly equivalent to the weight of one Boeing 757 aircraft. And, the RMC had a number of success stories working with Pennsylvania companies.

To learn more about the Pennsylvania Recycling Markets Center and its programs, visit its website at www.parmc.org

The second part of the RMC's task, and where the Committee staff played a direct role, was in how to manage the debris generated during this project – which involved 40,000 spectators and 2,500 volunteers working three shifts over a seven-day period – in order to maximize reclaiming and recycling of waste. RMC had to develop and oversee an integrated materials management solution that covered the demolition, construction and site-support areas. The Committee staff worked with the RMC staff to help carry out the materials management plan.

The volunteer team did pretty well. According to the RMC, the project generated 99 tons of debris. Of that, here's the recycling/reuse scorecard:

- 65.93 percent of the materials generated were reused or recycled;
- 25.07 percent of the materials were recovered for alternative energy generation; and
- only nine percent of the materials were disposed of.

As is often the case, recycling took a back seat to the home's construction in the public eye, but was an important part of the project. Congratulations to RMC on its successful efforts to introduce recycled content building materials into the project. I think I can speak for the Committee staff when I say they were pleased and proud to be able to play a part in seeing to it that as much waste as possible was saved and recycled or reused.

The experience was both fun and beneficial for everyone involved. It was a positive and public step forward for recycling in Pennsylvania.

*On a final and unrelated note to the above,
please allow me to wish all our readers a
very Merry Christmas and Happy New Year.*

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