

ENVIRONMENTAL SYNOPSIS

The Chairman's Corner

Rep. Scott E. Hutchinson, Chairman

We have recently been beset by the mania over the Super Bowl, which I think - football fans or not - we are all glad is now over. However, I recently read about another nationwide contest mania that is much more educational and will reap tangible benefits for America, and would like to share some information about it with you.



In This Issue...

- The Chairman's Corner p. 1
- Notes From the Director p. 2
- Research Briefs p. 3-6
 - ✓ Whither Green Businesses?
 - ✓ Global Energy Use Still on the Rise
 - ✓ Ranking Greenhouse Gas Emissions
 - ✓ Diverting the Waters of the Great Lakes
- On the Horizon p. 7
- Committee Chronicles p. 7

It is "RecycleMania" and the 2008 competition is underway. RecycleMania is a friendly competition between American college and university recycling programs (no BCS involved, thank goodness) which provides participating campus communities with a fun, proactive contest aimed at boosting waste reduction and recycling. The institutions compete in several categories, including the largest amount of recyclables per capita, largest amount of total recyclables, least amount of trash per capita and the highest recycling rate. There is a "Grand Champion" and a winner of the "Gorilla Prize", as well as award winners in targeted recyclables including paper, food service organic, corrugated cardboard, and bottles and cans. A winner is also declared in the "Waste Minimization" category.

Over a 10-week period (much like a college football season), campuses compete in the above categories for recycling supremacy. And, I'm happy to say the competition is catching on. RecycleMania began in 2001, when Ohio University and Miami University went head to head. By 2004, 17 schools were included and the contest had partnered with the U.S.

Environmental Protection Agency's "WasteWise" program, winning a National Recycling Coalition Outstanding Recycling Innovation Award. By 2006, 93 schools had signed up and in 2007, that jumped to 201. Now in 2008, there are 400 colleges and universities in 46 states. The only states without an entrant are Montana, Nebraska, Kansas and Alaska.

Now, can you guess which state has the largest number of colleges and universities participating? If you said Pennsylvania you would be right. The Keystone State has 34 participants, narrowly edging California (with 32) and New York (with 30). Pennsylvania's entrants include institutions both public and private, rural, suburban and urban schools, and several members of the State System of Higher Education.

RecycleMania is more than just competition, however. It is intended to increase student awareness of campus recycling and waste minimization, and, of course, to actually produce a reduction in the amount of waste discarded and an increase in the recycling level of the institutions and the respective states in which they are located.

(continued on page 8)

NOTES FROM THE DIRECTOR

CRAIG D. BROOKS, EXECUTIVE DIRECTOR

From Canada to Argentina, the Western Hemisphere produces more than 70 percent of the world's ethanol. Although Brazil and the United States are the leaders, Canada and Central and South America are ramping up their ethanol production capacity. While most ethanol is consumed in the same country in which it is produced, the past few years have been witness to an increase in trade from other countries, especially Brazil.

With many nations seeking to reduce petroleum imports, boost rural economies and improve air quality, world ethanol production rose to over 13 billion gallons in 2007. In fact, fuel ethanol accounted for more than 75 percent of world production. Once considered a niche market in the Midwestern United States, ethanol is now an important part of today's worldwide and national fuel market.

World ethanol production rose to over 13 billion gallons in 2007, and fuel ethanol accounted for more than 75 percent of world production

Passage of the Renewable Fuels Standard (RFS) has resulted in greater enthusiasm for the contribution our domestic ethanol industry can make to meeting consumer demand for transportation energy. Ethanol is now sold across the country and is blended in 30 percent of the nation's gasoline. Many existing producers are considering expansions as the industry gears up to meet the 7.5 billion gallons per year RFS requirement in 2012. It appears that the consumer appetite for energy may well create a greater demand for ethanol than is required under the law.

In fact, a recent poll indicates that nearly three out of four Americans want increased renewable fuel use and production. According to the national poll, 74 percent of Americans believe we should increase our use of domestically produced renewable fuels like ethanol. In addition, 87 percent of Americans maintain the federal government should actively support the development of a renewable fuels industry in this coun-

try and 77 percent think Congress should encourage oil refiners to blend more ethanol into their gasoline products.

Additional poll findings include:

- Seventy-seven percent (77 %) of Americans want the government to provide incentives to encourage refiners to reduce their use of oil and increase use of renewable sources of energy.
- More than three-quarters (78%) maintain that increasing domestic ethanol production will help create new jobs and improve the economy in rural America.
- Fifty-eight percent (58%) believe more use of domestically produced ethanol will help reduce our dependence on foreign oil.
- Three-quarters (75 %) of Americans view ethanol as somewhat important in reducing greenhouse gas emissions, with 41 percent viewing ethanol as extremely important in reducing greenhouse gas emissions.

While the production of ethanol appears to be at the root of rising food prices, the poll found that 84 percent of Americans believe that something other than ethanol production is behind rising costs. Specifically, higher oil prices (46%), increased global demand (15%), and adverse weather conditions like drought (14%) were deemed to have a greater impact on food process than ethanol production. The poll was conducted in October 2007 and was commissioned by the Renewable Fuels Association. The poll surveyed 1,000 adults with a margin of error of +/- 3.1 percent.



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.

The State of Green Business in 2008: Are We Swimming, Treading or Sinking?

– Tony M. Guerrieri, Research Analyst

Although U.S. companies tout their commitment to the environment on a daily basis, a report by Greener World Media, an environmental media and business consulting company, found that the results of corporate "greening" efforts have been mixed at best. In its inaugural *"The State of Green Business 2008"* report, Greener World Media set out to measure progress toward more environmentally friendly policies in the business world.

The report contains the GreenBiz Index, a set of 20 indicators measuring various aspects of green business, ranging from alternative fuel vehicles to carbon intensity and from clean technology investing to pesticide use. The report then assigns each indicator a "sink", "swim" or "tread water" grade to represent progress: a "swimming" icon indicates progress is being made; a "treading" symbol shows an indicator is holding its own; and a "sinking" symbol means a measure is losing ground.

The report found business is making progress (swimming) in just eight areas: disclosing carbon emissions, clean technology investments and patents, energy efficiency, green office space, paper use and recycling, quality of management, and reducing toxic emissions.

According to the report, one of the areas in which American businesses are showing the most environmental progress is clean technology. Clean technology investments in the U.S., for example, soared to more than \$48 billion in 2006, largely driven by a 132 percent increase in venture capital dollars going toward renewable energy, waste reduction, resource management and other activities that fall within the loosely defined area of clean technology. Related patents shone, too, with U.S. clean technology patents accounting for nearly half (46 percent) of those issued worldwide.

The growth of commercial green building is also highlighted, with a 500 percent increase in the amount

of Leadership in Energy and Environmental Design-certified (LEED) office space between 2005 and 2007.

In addition, there are significant positive shifts in the paper industry taking place, both in terms of how much paper is being used, and how much is being recovered and recycled. Even as the economy continues to grow, as more businesses conduct more transactions of all kinds, total paper use seems to have hit a plateau. And the amount of recovered paper in the global supply is growing faster than overall paper use.

Businesses are swimming in eight areas, treading water in 10 and sinking in two

In half the measures, the verdict was "treading," as progress was lacking or at least too slow to keep up with the magnitude of environmental challenges. For example, U.S. businesses nearly doubled their purchases of hybrids and other alternative fueled vehicles from 2006 to 2007. But those 31,000 alternative fuel vehicles amounted to just one percent of the more than 2.8 million new commercial vehicles bought during that period. Other indicators that are "treading" include green power use. Generation of electricity from wind, solar and other renewable sources has grown steadily, from 81 billion megawatt-hours in 2000 to 96 billion in 2006. But overall electricity consumption has grown, too, with the result being that renewable sources represent slightly more than two percent of overall U.S. electricity generation, about the same percentage as in 1995.

Other examples of indicators treading water include pesticide use on U.S. farms, which has not changed much since 1999. The number of teleworkers is slowly increasing but there has not been much progress in getting employees to abandon their solo commutes to work. While publicly traded companies are more likely to publish corporate responsibility reports, the number of companies reporting totaled only 253 in 2007, less than a 50 percent increase over five years.

On the other side of the ledger, the report identified greenhouse gas emissions and electronic waste as two areas where business deserves a failing (or sinking) grade.

Companies have in fact started to reduce their output of carbon dioxide and other greenhouse gases that contribute to global warming, with total U.S. greenhouse gas emissions falling by 1.5 percent in 2006. But that is nowhere near enough to halt global warming, in the opinion of the report's writers. They wrote, "According to many scientists, greenhouse gases need to decrease a sky-high 80 percent by 2050. At current rates, the U.S. will never get there."

Meanwhile, although the number of electronics recycling programs is growing, the piles of discarded computers, monitors, cell phones and other e-waste are growing even faster. Many of the items contain toxic materials that present a potential health hazard if not disposed of properly. And no one is verifying whether used electronic equipment that is sent to developing nations for dismantling and reuse is being handled safely, the report said.

The report also features a second section highlighting the top ten green business trends of 2007. They include the greening of transport – planes, trains, trucks and ships – that move people and goods around the world; the rapid growth of green computing, as makers of chips, PCs and other devices vie to be the most energy efficient and major companies partner to help capture e-waste; and how banks are launching an impressive array of initiatives to support clean energy, climate change mitigation, green building, and other things. The 64-page Greener World Media report, "State of Green Business 2008" is available at: <http://www.stateofgreenbusiness.com>.

Global Energy Use Likely to Rise 60 Percent

– Craig D. Brooks, Executive Director

Worldwide demand for energy is expected to grow by almost 60 percent between 2004 and 2030 according to the U.S. Energy Information Administration (EIA). The most rapid energy demand will be in developing nations, where economic growth is predicted to be the main driver, and not in industrialized countries. EIA's "International Energy Outlook" predicts that global energy demand will continue to grow steadily over the next two decades despite high oil and natural gas prices.

Among the key predictions in the EIA report, it is suggested that the demand for energy in developing nations will exceed the energy needs of the nations that make up the Organization for Economic Cooperation and Development (OECD). The growth rate for global demand will be approximately 1.8 percent annually,

however non-OECD countries will grow at 2.6 percent annually and industrialized nations will only increase by 0.8 percent annually. Because energy demand depends largely upon economic and population growth, demands for energy will be highest in China, India, Africa and the Middle East.

According to the report, world use of petroleum and other liquid fuels is predicted to grow from 83 million barrels per day in 2004 to 97 million barrels per day in 2015 and 118 million barrels per day in 2030 (more than 35 million barrels per day higher than in 2004). The report predicts that liquid fuels will remain the most important transportation fuel because there are currently no alternatives that can compete widely with petroleum-based liquid fuels. On a global basis, the transportation sector accounts for 68 percent of the total projected increase in liquid fuels use from 2004 to 2030.

The global energy demand is expected to grow steadily over the next two decades, with the greatest demand to meet economic growth needs in developing nations

Natural gas consumption has increased on average by 1.9 percent per year, totaling 99.6 trillion cubic feet in 2004. The report suggests that this will increase to 129.0 trillion cubic feet in 2015 and 163.2 trillion cubic feet in 2030. Rising world prices for oil after 2015 will increase the demand for and then the price of natural gas, as it will be used to displace the use of liquids in the industrial and electric power sectors. Although natural gas processing varies by region, the report predicts that higher natural gas processing after 2015 will make coal more cost competitive, especially in the electric power generating sector.

According to the report, world coal consumption is projected to increase from 114.5 quadrillion Btu's in 2004 to 199.1 quadrillion Btu's in 2030. This averages out as a rate of 2.2 percent per year. World coal consumption increased sharply from 2003 to 2004, largely because of a 17 percent increase on a Btu basis in non-OECD China and India. Coal's share of total world energy use is projected to increase from 26 percent in 2004 to 28 percent in 2030. The electric power sector accounts for about two-thirds of the world's coal consumption throughout the projection period and the industrial sector accounts for the remainder. China's industrial sector is projected to account for about 78 percent of the total net increase in industrial coal use worldwide. China has an abundant coal supply but limited oil and gas reserves.

Electricity generation from nuclear power is projected to increase from 2,619 billion kilowatt hours in 2004 to 3,619 billion kilowatt hours in 2030. Higher fuel prices, energy security concerns and improved reactor designs are expected to improve the prospects for new nuclear power capacity in many parts of the world. The report suggests that a number of countries are expected to build new nuclear power facilities, and installed nuclear capacity will grow from 368 gigawatts in 2004 to 481 gigawatts in 2030.

EIA's *"International Energy Outlook 2007"* can be found at: <http://www.eia.doe.gov/oiaf/ieo/index.html>.

How Many Countries Does It Take to Equal Pennsylvania's Emissions?

– Tony M. Guerrieri, Research Analyst

A report by the environmental advocacy organization National Environmental Trust (NET) demonstrates that many U.S. states individually emit more greenhouse gases than hundreds of developing nations combined. The report, *"Taking Responsibility: Why the United States Must Lead the World in Reducing Global Warming Pollution"*, compares annual state emissions data to that of developing and developed nations, illustrating the scope of individual U.S. states' contributions to global warming.

Because greenhouse gases stay in the atmosphere for centuries, NET researchers analyzed historical data. The report shows that between 1750, when industry began, and 2005, the United States, the nations of Europe and Russia, and Japan, Canada, and Australia emitted 73.3 percent of all cumulative fossil fuel emissions. Among these countries, the United States' share is the largest - 27.8 percent of all gases from fossil fuels – over the period.

In contrast, all developing nations' emissions combined during that time account for approximately 23 percent of fossil fuel emissions.

The United States is not only the world's biggest carbon polluter in terms of volume, according to the report, but it is also among the highest in terms of per capita emissions of greenhouse gases. In 2006, its 302 million people emitted 19.46 tons per person, compared with 1.92 tons per person in 148 developing countries which are home to 3.835 billion people. The average Chinese emits 3.90 tons of carbon dioxide (CO₂) per year, less than a fifth of U.S. levels. At current growth rates, China's historic CO₂ emissions will not catch up to the United States until mid-2051, according to the report.

Many individual U.S. states release more greenhouse gas emissions than entire groups of developing nations. For example, 42 U.S. states individually emit more CO₂ than 50 developing countries combined, and three states (Texas, California and Pennsylvania) individually emit more CO₂ than 100 developing countries. Even Wyoming, the most sparsely populated state in the U.S., with only 510,000 people, emits more CO₂ than 69 developing countries that are home to 357 million.

The top ten U.S. states, in terms of greenhouse gas emissions, are compared to blocks of developing nations, with millions upon millions more people, as well as some of the most prosperous developed nations in the world. For example, first-ranked Texas, a state that's home to 24 million people, emits 696 million metric tons (mmt) of CO₂ per year, more than the United Kingdom, whose 60 million people emitted 578 mmt. For that matter, Texas also emits more than Italy or France. California, the second largest emitter among U.S. states (395 mmt), which has a population of 37 million, releases more greenhouse gas pollution than Brazil (352 mmt), a nation with five times the population (187 million).

The report compares greenhouse gas emissions of individual states to developing and developed nations

Pennsylvania is the country's third largest greenhouse gas emitting state behind Texas and California. The report shows that Pennsylvania, with a population of 12 million, produced more CO₂ (290 mmt) in 2006 than Poland, with 38 million people (285 mmt). Other states in the top 10 are Florida, Ohio, Illinois, New York, Indiana, Louisiana and Michigan. Vermont came in 50th, releasing the least amount of harmful gases into the air (6.77 mmt). More examples of state-to-country comparisons can be found on page six of the report.

Despite being a major contributor to the problem, the United States lags behind other nations, including China, in targets for reducing greenhouse emissions, according to the report. The European Union's fuel efficiency standard for passenger cars is 48.9 miles per gallon (mpg) by 2012; Japan's is 46.9 mpg by 2015. The United States fuel efficiency standard is 26.3 mpg by 2011.

Other nations have set ambitious targets for using renewable energy: 21 percent for the European Union by 2020, and 16 percent for China by 2020. The United States has no national standard, although individual states have set targets. For example, Pennsylvania

has created renewable energy and energy-efficiency standards and vehicle emissions reduction goals.

The full 99-page NET report, *"Taking Responsibility: Why the United States Must Lead the World in Reducing Global Warming Pollution"*, is available online at: http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Global_warming/taking_responsibility_report.pdf.

Wildlife Federation Calls on States to Adopt Water Diversion Ban

– Craig D. Brooks, Executive Director

A report by the National Wildlife Federation is calling on each of the eight Great Lakes states to adopt an agreement that would ban water diversions outside the basin. The report, *"Climate Change and the Great Lakes Water Resources"*, suggests that current laws intended to protect Great Lakes water resources from being diverted to areas beyond the basin and from overuse within the basin, are not up to the challenge posed by climate change. The report illustrates the effects that climate change is having and will have on water levels in the Great Lakes due to higher average temperatures, lower precipitation and greater evaporation.

The Great Lakes constitute the largest system of surface fresh water on Earth, containing about 20 percent of the world's surface fresh water. According to the report, the Great Lakes region must consider the potential water crisis that climate changes may bring to the basin in the form of surface and groundwater reductions. Water levels in four of the Great Lakes, Erie, Michigan, Huron and Ontario, are expected to drop by roughly four feet by 2050.

According to the report, the following key findings when taken collectively present a major challenge to the Great Lakes region:

- Spring and summer temperatures in the Great Lakes region may increase by as much as 9.0 degrees and 7.2 degrees Fahrenheit, respectively;
- Lake levels in lakes Michigan and Huron may drop by as much as 4.5 feet due to the combination of decreased precipitation and increased air temperature and evaporation;
- Groundwater will be impacted as aquifer levels and recharge rates are expected to drop;
- Lower lake levels and rising temperatures will significantly impact fisheries, wildlife, wetlands,

shoreline habitat and water quality in the Great Lakes region;

- Tourism and shipping, which are critically important to the region, become especially vulnerable to climate change impacts; and
- Water shortages in other regions will ultimately raise the threat of any Great Lakes water diversions.

Consequently, the report recommends that the states adopt a compact that was signed by the governors of Illinois, New York, Ohio, Michigan, Indiana, Minnesota, Pennsylvania and Wisconsin in 2005 that would control consumption of water and conditionally ban new diversions of water outside the Great Lakes basin. However, it would not take effect until the legislatures of all eight states have adopted it and Congress has given its consent.

Nearly two years after the agreements were signed, Michigan and Illinois are the only states that have adopted the compact. Currently, Pennsylvania, Indiana, Michigan and New York have bills awaiting action. Ohio and Wisconsin have not introduced any legislation to date. According to the report, however, lawmakers of the states surrounding the Great Lakes are very supportive of the compact even though there are laws, treaties and charters such as the Water Resources Development Acts of 1986 and 2000, that give states the authority to veto water diversions and guard against overuse. The report suggests that these measures are inadequate and would not withstand a legal challenge because they do not identify standards or criteria under which diversions can be prohibited.

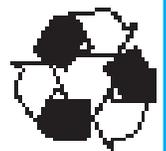
The National Wildlife Federation report is available at <http://www.nwf.org/nwfwebadmin/binaryVault/2007-11-27ClimateChangeandGreatLakesWaterResourcesReportFINALAffiliates.pdf>.

News to Use in the Environmental Synopsis... share it with a friend

The *Environmental Synopsis* is issued monthly.

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

If someone you know would like to receive a copy of the *Synopsis* each month, please contact the Committee office at 717-787-7570.



Printed on Recycled Paper

ON THE HORIZON . . .

A LOOK AT UPCOMING EVENTS

- ✓ **Monday, March 17, 12 noon** - Environmental Issues Forum featuring Northampton Generating Company L.P. to speak about its use of waste tires for fuel and alternative fuel sources
- ✓ **Thursday, April 17, 10 a.m.** - Sewage Task Force meeting, Conference Room 109, Penn Stater Conference Center Hotel, 215 Innovation Boulevard, State College
Please call the Committee office if you would like to attend.

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



The most recent Environmental Issues Forum held by the Joint Legislative Air and Water Pollution Control and Conservation Committee (Committee) featured Kathleen Cowles Paul, the Director of the Pennsylvania Center for Environmental Education (PCEE), who is pictured at left.

Ms. Paul provided an update on services provided by PCEE, and discussed its current focus and projects presently under development. In the photo below she is discussing the center's services with Committee Chairman Rep. Scott Hutchinson (left) and Sen. John Wozniak (right).



PCEE was created through executive order in 1997 to "support and facilitate environmental education on a statewide basis." The center is located at Slippery Rock University and is administered by the Pennsylvania State System of Higher Education. PCEE serves all of Pennsylvania primarily as a "virtual" center, reaching out to citizens through its website, monthly electronic newsletter and conference presentations.

The PCEE website is www.pcee.org.

Other benefits are the learning experience provided for young people, improvements in waste management programs, the economic benefits of recycling and reusing waste products, and the sense of community that sharing in a common goal produces.

**To learn more about the RecycleMania competition,
go to www.recyclemaniacs.org and see if your
alma mater is participating**

College campuses are good places for RecycleMania because certain areas – dining halls and residence halls come to mind – are prime sources of waste and present prime opportunities for recycling. A significant number of individuals can also participate and contribute at one time, as opposed to single-family residences, for example. When Bowling Green University won the competition in 2003, it recycled 52.5 pounds of waste per student. That's a significant number. As participation has increased, the total amount of waste recycled has risen from thousands of pounds recycled to 41.3 million pounds.

For those of you who may be wondering, one must participate in both the per capita and waste minimization segments of the competition to have a shot at being "Grand Champion." The 2007 Grand Champion, with an enviable recycling rate of 59.4 percent, was Cal State-San Marcos. Leading the way for Pennsylvania was Villanova University, which finished 35th overall and recycled at a rate of 26.79 percent.

In the 2007 per capita competition, Wilson College was the top Pennsylvania school, finishing 15th overall and recycling 48.9 pounds per person. The national winner was the Lamont-Doherty Earth Observatory of Columbia University which had a recycling rate of 101.12 pounds per person.

The "Gorilla Prize" goes to the school which has the highest gross tonnage of recyclables, regardless of the size of the campus. In 2007, that happened to be Rutgers University, which

collected 2.7 million pounds of recyclables, nearly twice as much as the Scarlet Knights' closest competitor, Stanford University. Top finisher for Pennsylvania was Temple University with a cumulative total of 385,004 pounds.

As you can see, there is room for improvement here in Pennsylvania.

Winning schools receive various awards, certificates of participation and trophies, with the Grand Champion trophy itself made out of recycled materials. Society wins as well as less waste is tossed away, the pressure on landfills is reduced, more products are recycled and awareness of the benefits of recycling is increased. Go to www.recyclemaniacs.org to see what schools are participating and if you don't see your alma mater there, make the call to urge them to be a part of the RecycleManiacs competition.



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

Joint Legislative
Air and Water
Pollution Control and
Conservation
Committee