



*Making a Difference for the Environment
Locally and Globally Since 1970*

December 2015

Serving Kent, Portage County and Beyond

Welcome to the December 2015 issue of the Kent Environmental Council newsletter.

→ Water in a Changing Climate: Finding the Good News

The featured speaker for the Third Annual Water Symposium at Kent State University was Richard Alley, Ph.D., a researcher and national expert on climate change from Pennsylvania State University. He is the author of the book and television mini-series *Earth: The Operators' Manual*. He laid out the human causes and destructive effects of climate change and argues that we are the first generation who knows how to use technology to build sustainable energy systems and find ways to improve our standard of living by using the relevant science wisely.



He said that water and energy are linked to each other and referenced various historical scenarios where civilizations (including hunter-gatherers) were overpopulated and outpaced their resources, causing civilizations to fall. Now with a few billion people, we are more overpopulated than ever.

Richard Alley

We grow food, but we are hunter-gatherers of energy. We eat 2,000 calories a day, and we use 240,000 calories a day in energy. But the work is done for us by companies that produce the energy. It's like having 100 serfs to do our bidding.

One square mile of trees per family was burned to make charcoal to fuel a furnace forge to keep our ancestors in iron, but this eventually chased out all the elk, bison, fish, mountain lions and most deer. Then came the rise and fall of whale oil (the first modern oil well) in the 1800s. That generation's total whale-oil production is one week of oil production today. At first, oil was easy to find, but now it is becoming increasingly harder to discover and recover new petroleum resources. Fossil fuel resources will eventually run out. This has to end. The only choice is how long we continue burn fossil fuels. We have to learn to develop and depend on renewable energy sources.

Carbon dioxide and other emissions are changing the climate. We have known this for more than a century, and the evidence is all around us. Sea levels are rising, tropical areas flood faster than they dry up and don't provide as much resilience. Forests are being replaced by more reflective surfaces. Crop production has decreased in areas where people are dwelling, and we have to get food from other places. Droughts and lack of food contribute to worldwide conflicts. And the list of climate change effects goes on and on. We have contrarians about everything but there isn't another side according to the science. For example:

- The temperature of the planet is rising despite our sun getting cooler.
- The size and pattern of the temperature change shows that it is from humans.
- Each degree of heat costs us more.
- The rise in carbon dioxide is getting to a tipping point where we won't be able to stop it.

Can we find a way out of this energy/climate change dilemma? Alley answered with a strong Yes! The good news is that much of the technology needed for a "greener energy" base has already been developed and continues to improve in efficiency as the cost goes down. Alley noted that the National Academy of Sciences was created in Abraham Lincoln's time and that we have a long history with science. When wooden ships became ironclad, it helped the workforce but caused problems with compasses, which are magnetic, so science fixed it. And we can do the same now using science coupled with market-based incentives. For example, wind could supply far more energy than humanity uses today and be profitable for everyone. Farmers in one state were paid to devote 5 percent of their land to wind, and it netted them each \$5,000 per year.

The costs of solar energy have decreased greatly because of the manufacturing efficiencies developed by the Chinese. In the United States, there continues to be an economic incentive to "go solar" where individuals and small industries are able to satisfy their entire energy needs through solar panels; they are still able to place the excess electricity back on the grid, effectively selling electricity to electric companies for what they charge customers. Alley said, however, that we should not expect this incentive to last indefinitely. The electric companies would rather "buy back" electricity from solarized customers at the cost they purchase electricity from other sources, which is less than 40 percent of the price they charge customers.

We need to get better in our hunt for energy and energy efficiency and continue to find ways to create incentive for its use. There is money to be made in addition to helping our grandchildren, the future and the environment. So there is some optimism that we can all be on the same side. Our renewable energy future will be tides, waves (less important here, but important if you live near the coasts), currents, wind and sun. Energy is 5 percent to 10 percent of the economy now. We subsidize fossil fuels much more than other things. If you put a price on carbon, then all of the economy is working to decrease climate change. Alley also suggested using "infill" in cities. By living in cities and producing food as locally as possible, people drive less and decrease their carbon footprint. This, of course, is dependent on sufficient water resources.

Science can solve it, but we need to do what needs to be done in a social and political context--and we should be doing it now!

--Lorraine McCarty and Bob Heath

Editor's Note: Just after this conference, I saw a four reports that illustrate Alley's optimism that scientific advances possible now or in the near future can be a way out:

Energy Conservation. The first report is an energy conservation example. QM Power has developed the Q-Sync Smart Synchronous Motor for grocery store refrigeration units that uses 50 percent to 80 percent less energy than current motors and has been designated as an "emerging energy-saving technology" by the Department of Energy. While the motor may have other uses in the future, the company's first target is the grocery store market because the motor is just right for running the evaporation fans that keep food cool. Refrigeration costs are one of the biggest expenses for grocers, whose profit margins are very slim. There is an average of 225 evaporator fans in every grocery store, and soda vending machines, restaurants, bars and convenience stores use them too--amounting to 16 million fans in the United States. About 80 percent of these fans are of a design that dates to the late 1800s and is simple but very inefficient. Running them is very expensive. Another current grocery fan motor is the ECM motor, developed in 1962; however, the Q-Sync still outperforms them. The Oak Ridge National Laboratory estimates that replacing all current fan motors with the Q-Sync could save businesses \$517 million a year. This would reduce demand on the power grid by approximately 600 megawatts and cut carbon dioxide emissions by 4 million tons. The



Joe Flynn_ co-founder and chief technology officer of QM Power

fans are currently being marketed. (Source: [Kansas City Star, September 28, 2015](#))

Fuel Cells. The second report was an announcement by Toyota that they envision eliminating nearly all gas-only cars by 2050, relying instead on hybrid and fuel cells to radically reduce emissions. Fuel cells run on hydrogen and have zero emissions. Toyota's Marai fuel-cell car went on sale late last year. The company has received 1,500 orders in Japan and is just beginning to market it in the United States and Europe. Toyota officials are projecting annual fuel-cell car sales will reach more than 30,000 by 2020. Toyota also vowed to reduce carbon dioxide emissions from production lines during manufacture in 2030 to about a third of their 2001 levels. Other companies also are pursuing fuel-cell vehicles, and the number of hybrid vehicles sold is slowly morphing out the internal combustion engine. According to Tatso Yoshida, senior analyst at Barclays Securities Japan, Toyota's goals aren't farfetched and, "when officials speak out like this, it means they are 120 percent confident this is their scenario." (Source: *Akron Beacon Journal*, October 10, 2015)

Cell Phone Charger. The third report talked about two students at Case Western Reserve University in Cleveland, Sam Crestani and Ian Ferre, who have developed a simple foot-powered pedal that can charge cell phones for millions of villagers in remote areas of the world who have cell service but no power grid. Crestani and Ferre have field tested the pedal in an African village. Even though villagers had to pedal two and a half hours to charge the phone, they were glad that their hands were free to do other things and glad to be able to charge the phone without having to make a six-hour round trip journey to plug into a grid. The cell phone provides villagers with a link to food, medicine, banking and the world. The students were spurred by a seminar on developing projects for the world's poorest people. Their professor, Daniel Lacks, Ph.D., encouraged them to write a grant proposal to the U.S. Environmental Protection Agency's sustainable design program, and they were awarded \$15,000 in 2014 to study the feasibility of the concept and build prototypes. They then received an additional \$75,000 award from a similar program. They now are working on improving the design to make it more durable and waterproof. They have formed Greenlite Technologies LLC and are talking to manufactures, development agencies, and telecommunications companies and are heading to the Philippines to test the device in areas where prolonged electrical outages occur during monsoon season-a time when a phone call can mean survival! (Source: *THINK: The Magazine of Case Western Reserve University*, Fall/Winter 2015)



Foot pedal cell phone charger

Lower-Cost Cleaner Energy. The fourth report noted that governmental and business leaders have pledged billions of dollars to promote technical fixes to climate change through research and development to reduce the cost of cleaner energy. Nineteen governments and 28 world investors from the United States, Saudi Arabia, China and other energy producing and energy consuming countries have signed on so far. This public-private initiative has two parts: The governmental portion, called Mission Innovation, pledges to double its spending on low- or no-carbon energy over the next five years. The current investment is \$10 billion total, with about half coming from the United States. The investor group, Breakthrough Energy Initiative, is led by Bill Gates (the "intellectual architect" of the effort). Gates has pledged \$1 billion of his own money and has signed on the others business leaders who have tied their investments to governments also pledging money. This announcement has given a new boost of energy to the December 2015 Paris conference on climate change. (Sources: *Akron Beacon Journal* and *Record-Courier*, November 30, 2015)

--Lorraine McCarty

→ Kids Say the Darndest Things!

Today, in the cutest voice, my eight-year-old daughter asked me to start recycling. I chuckled, and asked, "Why?" She replied, "So you can help me save the planet." I chuckled again, and asked, "And why do you want to save the planet?" Because that's where I keep all my stuff," she said.

--Anonymous Email

→ The Human Cost of Pipelines

One byproduct of increased oil and gas production is the greater need for oil and gas transportation and, across much of the United States and beyond, pipelines are a method of choice for transporting oil and gas. Pipelines require little energy to move material from one place to another when both points are on the same landmass, and they tend to be less expensive than other alternatives such as rail, truck, or tanker, especially considering the near constant flow of material through the pipeline. Of course, pipelines are not without their downsides. This article is the first of two articles looking at some of these risks to pipelines as a transportation vehicle for oil and gas. This is not meant to say that pipelines are the only problematic way to move oil and gas from point A to point B or even that pipelines are the worst. The two articles are just examining the issues surrounding pipelines. Obviously, some of these same issues will affect any method of oil and gas transportation, and other forms of transportation may be addressed in the future. For now, considering the possibility of new pipelines being built in Ohio, this article looks at pipelines as their expansion is under discussion and scrutiny.



One concern around pipelines mirrors a common concern around drilling and extraction of oil and gas: property owners trying to protect their property. In northeast Ohio in particular, there have been more than a couple of lawsuits by residents aiming to prevent surveyors from coming onto their land to survey for a potential route for the proposed Nexus pipeline. According to a 2008 Ohio ruling, however, surveying is not considered trespassing, thus making it more difficult to prevent surveyors from coming onto private property. A related concern is property values. Aboveground pipelines typically are not attractive neighborhood improvement projects and tend not to have a positive impact on nearby property values, although the research done on property values around pipelines has been mixed. At the same time, when dealing with issues such as property values--an investment in which many individuals hold significant worth or debt--emotions and fear of loss can also be considerable drivers of behavior.

Underground pipelines are thought to have less impact on property values in the long run, as they are below ground and not visible, and they have less impact on the perception of future property values for this same reason; however, their construction can significantly disrupt the land and create considerable eyesores during and after the construction phase. At the same time, some people have an increased fear of possible ruptures, corrosion and leakage surrounding underground pipelines. These concerns may impact individual buyer-seller interactions and individual sales, but few studies have been done on this situation so it is difficult to make a firm statement of whether underground pipelines do or do not impact property values. As is the case in aboveground pipelines, though, human emotions can play a role in people's responses to the building of a proposed pipeline.

Some of the more concrete risks of pipelines were alluded to in the earlier paragraphs of this article, including the risk of pipeline rupture and the release of material from the pipeline. Whether above ground or below ground, there are very real risks associated with pipelines and the material flowing through them, although the

most dangerous material carried in pipelines today is not oil and gas, but ammonia. In all three of these types of pipelines, unfortunately, there have been pipeline failures ranging from small-scale incidents with little to no risk to the surrounding areas up to breaches that lead to explosions, fires, and/or serious spills and contamination. While the more dramatic of these incidents often make the news, you can track all federally reported pipeline accidents on the website of the National Transportation Safety Board (<http://www.nts.gov/investigations/AccidentReports/Pages/pipeline.aspx>).

--Lisa Regula Meyer



Lake Erie Hazardous Algal Bloom 2015

Assessing the size of an algal bloom from the shore or a boat can be difficult at best and misleading at worst. So it is good to note that algal blooms can now be measured by a satellite known as the Moderate Resolution Imaging Spectroradiometer, or MODIS for short. This satellite monitors a number of wavelengths and, from laboratory measures coupled with ground-truthing, algorithms can be developed to identify particular reflective entities, such as algae.



Using this technology, developed largely at Kent State University, it is possible to distinguish between different forms of phytoplankton.

Cyanobacteria (harmful phytoplankton sometimes called blue-green algae) can be distinguished and quantified from green algae and diatoms, which are useful and serve as the base of a healthy food web. Cyanobacteria have both chlorophyll and other pigments called phycobilins, while eukaryotic algae (green algae, diatoms, etc.) contain chlorophyll but do not have phycobilins. Using these differences it is possible to discriminate between a bloom of cyanobacteria and eukaryotic algae and even to determine the quantities of each in a mixture. NASA is even developing an app for that so individuals can check the size of a bloom before heading to the beach. (For more information about the app, go to http://science.nasa.gov/science-news/science-at-nasa/2015/26jun_algae/.)

This technology is great, even when it brings bad news. Data from MODIS throughout the summer allowed NASA and National Oceanic and Atmospheric Administration to integrate over the season and quantify the size of the hazardous phytoplankton bloom this past summer. They found that as measured by the amount of chlorophyll present and integrated through the season, the bloom in 2015 was the largest bloom (i.e., worst bloom) seen since the 1970s and slightly worse than the big *Microcystis* bloom of 2011, which was highly toxic and produced a large amount of the toxin microcystin (Mcy).

In contrast, the bloom of 2015 was not a very toxic bloom. This shows that two separate issues need to be considered in any attempt to forecast blooms in Lake Erie: how big a bloom may be and how toxic it may be.

Forecasting the size of a phytoplankton bloom seems to be done rather well because one can determine the amount of phosphorus entering the lake from nonpoint sources. Nonpoint sources of phosphorous enter the lake largely from agricultural fields following rainstorms. A regression model, built from observations over the years, is able to forecast the size of summer blooms from the amount of rainfall from April through June. This year's rainy June led to a prediction of a record bloom--and the prediction was correct.

Unfortunately, it is not possible to forecast the toxicity of a bloom. From recent and ongoing studies, it is known that not all *Microcystis* cells carry the genes for production of the toxin Mcy. The potential toxicity of a bloom

depends on the proportion of cells that carry the Mcy genes. But it's not that simple. The genes for Mcy production apparently depend on the presence of large sources of nitrogen (such as nitrate, ammonium and urea). At least for the foreseeable future, it will be necessary to wait to see how toxic a bloom is as it develops by periodically analyzing samples collected from the shore or the side of a boat.

--Bob Heath

→ Supreme Court of Ohio Protects Municipal Land Use Control

The Supreme Court turned Beck down flat--unanimously. The Supreme Court of Ohio unanimously dismissed a lawsuit, without a formal opinion explaining the reasons for the dismissal on November 10. This peremptory action frequently indicates that the justices all agree that the lawsuit is obviously without legal merit and is not worth the effort to explain why it is without merit.



The lawsuit that was dismissed is of critical importance to Ohio municipalities and their ability to control, by zoning, the use of the land within their municipal boundaries. The case is *State ex rel. Beck Energy Corp. v. City of Munroe Falls*, Supreme Court case number 2015-1019. This is a mandamus case, in which Beck asked the Supreme Court to issue an order that Munroe Falls not be able to enforce its zoning law to prevent Beck from engaging in an industrial activity in a part of the city that is zoned residential

Beck argued that the industrial activity in which Beck wanted to engage, drilling a well for oil and gas production, had a special exemption from local zoning arising from Ohio Revised Code chapter 1509. That chapter gives sole authority to issue permits for oil and gas wells to the Ohio Department of Natural Resources. The Supreme Court had ruled earlier, on February 17, that municipalities did not have authority to require a municipal permit to construct an oil or gas well within the municipality. That case is *State ex rel. Morrison v. Beck Energy Corp.*, Supreme Court case number 2015-Ohio-485. In February, the general media reported widely but incorrectly that the decision eliminated municipal land use control concerning oil and gas wells. Beck attempted to use that decision, which eliminated local drilling permits, to claim that local zoning also was eliminated. The Supreme Court corrected that misunderstanding and dismissed Beck's request to disregard Munroe Falls' zoning.

The ability of Ohio municipalities to enforce zoning laws is not limited by oil and gas drillers--yet.

--Christopher J. Mallin, attorney at law

→ Stay Up-to-Date on Drilling in Our Area

The *Akron Beacon Journal* on November 20 stated that two of their reporters have and maintain up-to-date information on drilling in the area with their frequent [online posts](#). The newspaper's archives hold thousands of posts going back to 2011 and includes a long list of websites related to Utica and Marcellus Shale.

--Iris Meltzer



U.S. Water Report Released

Check out the [August 2015 Progress Report to Safeguard Your Drinking Water](#) showing actual and potential fracking zones, major fault lines, and other threats. The report can be found on our face book page <https://www.facebook.com/KentEnvironment> .

--Eugene Wenninger



Fracking Killing People in North Dakota



John Oliver

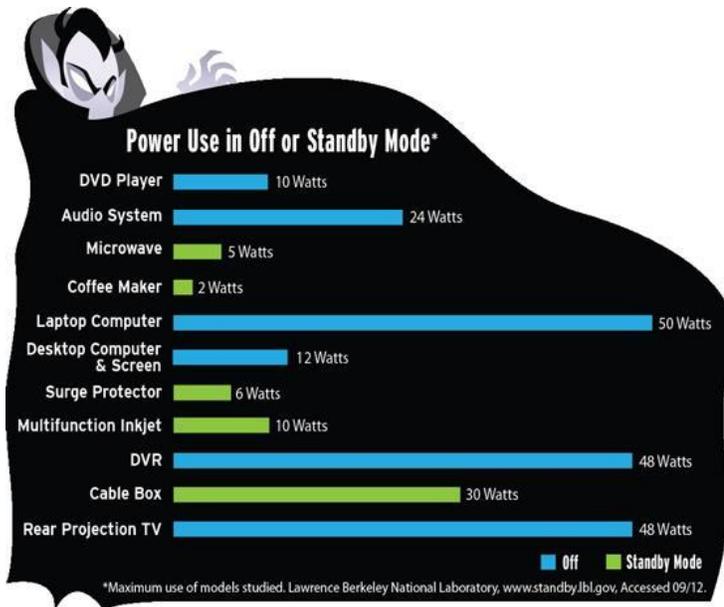
On his *Last Week Tonight* show October 11, John Oliver ripped the fracking industry for the North Dakota Bakken boom killing one person every six weeks. To hear the segment, go to. https://www.youtube.com/watch?v=jYusNNldesc&feature=player_embedded.

Lorraine McCarty



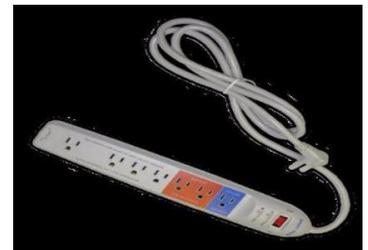
Sustainability Tip

In the October newsletter of the Oberlin College Office of Environmental Sustainability, Bridget Flynn pointed out some energy vampires (also known as phantom loads) in our lives today. See the graphic for a sampling of devices that use energy in off or standby modes.



The solution is to unplug the appliances from the wall or plug them into a power strip that completely turns off when you shut down the equipment or use a smart power strip. Smart strips are advanced power strips that allow you to plug an appliance into a master outlet, which controls the other outlets. For example, you can plug your computer into the master outlet (shown here in blue) and plug speakers, printers and monitors into automatic

outlets (shown here in white) on the strip. When you turn off your computer (master outlet), all of the equipment plugged into



Smart strip

the automatic outlets turn off as well. Smart strips usually also have one or two constant outlets (shown here in red), which allow equipment plugged into those outlets to always stay on unless turned off manually.

For more detailed information on phantom load costs, go to <http://www.takecontrolandsave.coop/documents/PhantomLoad.pdf>

→ Methane Q & A

Question: Methane decays rapidly in sunlight, so why or how is it a greenhouse gas?

Answer: Methane's decay is relatively rapid, but it still lasts for eight years in the atmosphere where it traps heat by absorbing infrared radiation. And it is about 30 times more efficient than carbon dioxide as an infrared absorber.

Source: *Smithsonian*, November 2015

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→ Monarch Butterfly Resurgence Noted

At a recent KEC breakfast meeting, several attendees reported seeing more monarch butterflies this summer. Our speculations were proved to be true by these comments from Walter Finekel in *The Daily Kos* on November 17, 2015:

"Since 1990, almost 1 billion monarch butterflies have vanished. Conservationists in North America began to make safe sections in the U.S. where monarch populations could leave eggs and be safe to on their migrations of the 4,000 kilometers (2,500 miles) from Canada to Mexico--these safe sections are creating a "butterfly highway." Efforts have been underway in Mexico also. And these conservation efforts are quickly showing improvements for the monarchs. 'We estimate that the butterfly population that arrives at the reserve is as much as three and could reach four times



the surface area it occupied last season,' Mexican Environment Secretary Rafael Pacchiano said at a press conference at the Piedra Herrada Monarch Reserve."



We need to keep up with environmental regulation on pesticides and illegal logging and continue to plant milkweeds for the monarchs to use to produce. Mexico wants to see 225 million monarch butterflies returning to Mexico every year and by working together we may be able to eventually reach that. And that means we may continue to see more monarchs in Northeast Ohio. Remember: Plant milkweed!

--Iris Meltzer and Lorraine McCarty

→ Breakfast Banter

At another recent KEC breakfast, Kent Community Development Director Bridget Susel talked about strategies for managing the boom in student housing that has occurred in Kent in the last few years, not getting ahead of the university's needs, keeping the density near downtown because many students don't drive, and encouraging use of all the new downtown development. She outlined current and possible future development and talked about a new requirement for rental licensing. She acknowledged the need for more senior housing but said that the funding issues for such housing are very complex, and the city has not been able to attract developers. She also shared the link to the [Kent State University Summit Street Project information webpage](https://www.kent.edu/summitstreet), which is updated weekly (<https://www.kent.edu/summitstreet>), as well as two videos: Phase 1

(https://www.youtube.com/watch?v=1VoXZR_-6ug&feature=youtu.be) and Phase 2 (<https://www.youtube.com/watch?v=Ac5ZWocbv0E&feature=youtu.be>), which provide a great visual representation of the work that will be completed in each phase.

Other topics at breakfasts in November included discussion of a meeting to evaluate solid waste proposals to be funded by the Ohio Environmental Protection Agency, how issues of tillage affect farming practices and the environment, what current studies are showing about Lake Erie's health, sustainability issues, and several legal issues we have been following. (See the article on the Monroe Falls decision in this newsletter.) We also looked at a map of Kent's zoning districts, trying to figure out where a potential driller might be able to locate a well. As always, we welcome anyone who wants to attend Fridays at 8 a.m. at Little City Grill.

--Lorraine McCarty



The Environment in the News

Nations Pledge to Limit Pollution

***Akron Beacon Journal* - December 13, 2015 and *Record-Courier* - November 7, 2015**

In the Paris climate-change agreement, nearly 200 nations have pledged to collectively cut and then eliminate greenhouse gas pollution to keep global temperatures from rising another degree Celsius (1.8 Fahrenheit) between now and 2100. Temperatures have already risen by 1 degree Celsius, and above 2 degrees Celsius is when the most catastrophic consequences are expected to occur. "It's a victory for all of the planet and for future generations," said U.S. Secretary of State John Kerry, adding that the pact will "prevent the worst most devastating consequences of climate change from ever happening." The pact is voluntary with no sanctions and still needs to be ratified by 55 countries (including the United States) before taking effect, but at least everyone has agreed on what they ought to be doing. The pledges aim to limit the amount of greenhouse gases emitted by human activity (at some point between 2050 and 2100) to the same levels that trees, soil and oceans can absorb naturally. The pact also set an "aspirational goal" of limiting changes to 1.5 degrees Celsius above preindustrial levels by 2100, which could cut in half the projected 280 million people whose homes will eventually be submerged by rising seas. This reduction would involve a complete transformation of how we get energy and many activists worry that countries are not ready to make such profound and costly changes.

Obama Nixes Keystone KL to Boost Climate Leverage

***Akron Beacon Journal* - November 4, 2015 and *Record-Courier* - November 7, 2015**

President Barack Obama declared that any other decision would have undercut the climate change efforts of his administration to protect the environment and to be a global leader on the issue. This decision was a victory for environmental activists who have worked hard to stop the pipeline. Proponents of the pipeline believe that this move will make energy independence more difficult to achieve and hurt jobs in the United States.

Ohio Files Against Air Rules

***Akron Beacon Journal* - October 24, 2015**

Ohio joined 23 other states in challenging President Barack Obama's Clean Power Plan, which aims to reduce greenhouse gas emissions, claiming that the policy oversteps the president's authority. Ohio Attorney General Mike DeWine says that new plans "hits Ohio hard" and "will dramatically increase Ohioans' electric rates while at the same time offering less reliable service and few tangible environmental benefits." The administration and environmental groups counter that the rules are necessary if the country is to cut carbon emissions in an effort to curb the worst impacts of climate change and the rise in sea levels. Proponents also argue that the plan will spur new jobs in the renewable energy sector. The new rules require Ohio to decrease the use of coal power and fossil fuels by 37 percent below 2005 levels over the next 15 years. Ohioans get more than half of their energy from coal. Gina McCarthy, U.S. Environmental Protection Agency administrator, says, "the Clean Power Plan

has strong scientific and legal foundations, provides states with broad flexibilities to design and implement plans, and is clearly within the EPA's authority under the Clean Air Act."

Solar, Wind Power Surge

***Akron Beacon Journal* - October 13, 2015**

Production of fossil fuels is dropping in the United States as fossil fuel prices drop, making drilling less profitable. U.S. crude oil production dropped by 120,000 barrels a day in September 2015, and the slide downward is expected to continue at least through 2016. Likewise, coal is in a downward spiral. Meanwhile, solar is joining wind as a cheaper alternative, and their generating capacity is expected to see double growth in 2016 as solar expands from home rooftop panels to major utility-scale production. And the generating cost for wind and solar continued to drop, so the cost comparison between renewable energy and fossil fuels are much more competitive.

House OKs Bill to Export U.S. Oil

***Akron Beacon Journal* - October 10, 2015**

The House of Representatives voted to end the 40-year-old ban on exporting American oil to foreign nations, which was the American response to the Arab oil embargo in the 1970s. The Senate must still pass the bill, and President Barack Obama is threatening to veto the bill. While some Democrats did vote with the Republicans, there are not enough supportive votes to override a presidential veto. The White House believes that Congress should be focusing on supporting the country's transition to a low-carbon economy, which it could do by ending the billions of dollars per year in federal subsidies to oil companies and shifting the money to investing in renewable energy and energy efficiency to meet America's energy needs. Some refiners in America argue that global competition for American shale oil would force them to pay more and hurt their industry. Environmentalist fear ending the ban would lead to increased drilling and undermine climate-change efforts.

Report: Ethanol Has Hurt Ohio's Economy

***Akron Beacon Journal* - November 6, 2015**

An Ohio-focused report by the Center for Regulatory Solutions in Washington, D.C., says that 2005 federal mandates that required a 10 percent ethanol mix in the nation's fuel supply have added 2.2 million tons of carbon dioxide to the atmosphere and raised prices. Both industry and environmentalists agree that it has not worked and that it may be time to end the requirement, although there is still a powerful corn-ethanol lobby in Washington. Ethanol produces only two-thirds the energy of gasoline, resulting in higher fuel costs for Ohioans. Corn ethanol production also uses more water to grow corn and has other farm impacts while adding polluting volatile organic compounds and nitrogen oxide to the air, which increases unhealthy ozone.

Diesel Fuel from Weed

***Akron Beacon Journal* - November 28, 2015**

Scientists at the University of Nevada, Reno, are on the verge of producing diesel fuel from curly top gumweed, the sticky cousin of the sunflower, which is found along highways in Nevada's high desert. Gumweed, which requires only about a fifth as much water to grow as alfalfa, does not compete for acreage with animal feed or food crops like the corn or soybeans that are used to make ethanol.

Columbiana to Get Gas-Fired Power Plant

***Akron Beacon Journal* - October 9, 2015**

This new \$1.1 billion 1,100-megawatt power plant is part of a trend to burn natural gas instead of coal to produce energy that is compliant with new clean air rules. Construction will begin in late 2017, and the plant will be operational by late 2019 or 2020. It will be the sixth new gas-fired power plant in Ohio. The plant is being built by South Field Energy LLC, a subsidiary of Boston-based Advanced Power AG, the same company that is building a 750-megawatt natural gas plant in Carroll County. FirstEnergy still has no plans to switch its 1,700-megawatt Hatfield Ferry plant in Pennsylvania from coal to natural gas. FirstEnergy produces 8 percent of its electricity with natural gas. In April this year, the United States for the first time reported that natural gas

is producing more electricity than coal (31 percent natural gas versus 30 percent coal, with nuclear power coming in at 20 percent).

New Rules for Drilling in Parks

***Akron Beacon Journal* - October 20, 2015**

The Cuyahoga Valley National Park and 11 national parks will be affected by upgraded rules that are now being finalized. The aim is to better protect the national parks from drilling for oil and natural gas. The rules will be published in the Federal Register and then enter into a 60-day comment period. The revised rules will set clear standards to boost protections, will update financial assurance requirements, and will recover permitting costs. Drillers will need to pay the full cost of reclamation from drilling. The rules will bring any existing wells up to current standards and apply to any future oil and gas operations in the park system and any that are currently exempt. The Cuyahoga Valley National Park Service owns about 18,768 acres, with the remaining 14,182 acres owned by metro park districts and private interests, which are not under federal control. But the National Park Service owns mineral rights on only 5 percent of its acreage because the land for the park would have been too expensive in the 1970s when it was acquired. Therefore, as many as 32,000 acres could potentially be drilled. At this time, there has been no indication of anyone wanting to drill under the Cuyahoga Valley National Park. Older wells in the park are older vertical wells.

Shale Investors Flood Ohio

***Akron Beacon Journal* - November 19, 2015**

The past several months of 2015 have seen an increase of \$5.2 billion in investments, or a 20.4 percent increase, since last spring--despite low commodity prices and a natural gas glut that hurt some drillers. The biggest factors in Ohio's Utica Shale boom are in the infrastructure of pipelines and natural gas processing plants and natural gas power plants to generate electricity, along with a regional testing facility, a training facility, and hotels catering to workers--all midstream and downstream development and not the actual leasing and drilling of wells.

Nuclear Plants Dip into Dismantling Funds for Waste

***Record-Courier* - October 26, 2015**

Closed nuclear reactors in Vermont, Wisconsin, California and Florida have been given permission to use decommissioning funds to pay for onsite storage of highly radioactive waste. While this violates Nuclear Regulatory Commission rules, the NRC is granting the exemptions from those rules every time it is asked because the federal promise to take spent fuel from nuclear plants is still unfulfilled. The question is whether there will be enough money to dismantle the plant when the time comes.

Climate Change Could Mean 100 Million Poor

***Akron Beacon Journal* - November 9, 2015**

Disruption to agriculture and the spread of malaria and other diseases could push millions of people into extreme poverty by 2030, according to a World Bank report. The world's poor are unprepared to deal with climate shocks such as severe droughts and rising seas. They have fewer resources and support to help them cope and adapt. The report was based in part on surveys of 1.4 million people in 92 countries. When asked, people reported three categories leading to their falling into poverty: "Agricultural shock, including increases in food prices; natural disasters such as floods, droughts, storms; and health issues, including malaria, diarrhea." Studies show that climate change could result in global crop-yield losses of 5 percent by 2030 and 30 percent by 2080. Also noted were studies showing that warming temperatures could increase the number at risk for malaria by 150 million. The report was released in the hope that its shocking statistics will help the Paris climate change accord attendees be more sensitive to the issue and help poorer communities be more resilient to a changed climate.

U.S. Youths Suing to Push Government on Climate Change

***Record-Courier* - November 3, 2015**

The Oregon-based nonprofit Our Children's Trust has been leading nationwide efforts "to file lawsuits or administrative petitions in every state and against the federal government" on behalf of the youth, who feel their generation will bear the worst effects of global warming and that governments are obligated to protect natural resources to protect future generations. Suits have been filed against every state and the federal government. Some have been dismissed, and some are pending. "The courts so far have not wanted to set climate policy."

Ohio River's Algae Bloom a Warning for Water Suppliers **Record-Courier - October 20, 2015**

This August, a toxic algae bloom covered 600 miles down the Ohio River from Wheeling, West Virginia, past Cincinnati and Louisville, setting off warnings about boating, fishing and swimming in the river. The size and level of toxins detected in some parts of the river were well above the levels found recently in western Lake Erie. The Ohio River bloom is beginning to fade, and the toxins did not contaminate any municipal water supplies along the river, which provides drinking water to about 5 million people; however, cities that obtain their water supply from lakes, rivers and manmade reservoirs need to be ready and have a plan in place. The Ohio River bloom did cost more money than usual to achieve a positive outcome. The toxins can cause rashes, diarrhea, vomiting and breathing difficulty. Rivers usually run too fast for the bloom to be serious, but heavy early summer rains washed algae feeding pollutants downstream, then low rainfall for months in late summer dried up the area, causing the river to really become a series of small lakes, which allowed more sunlight to penetrate the water and fuel the algae growth. Gina McCarthy, administrator of the U.S. Environmental Protection Agency, has called harmful algal blooms one of the nation's most serious and growing environmental challenges.

California Fines Water Suppliers for Failure to Cut Back **Associated Press - October 30, 2015**

Fines of \$61,000 have been imposed on Beverly Hills, Indio, Redlands and the Coachella Valley Water District for failing to meet a mandated 25 percent reduction in water usage to battle the state's drought conditions. Meanwhile, Californians as a whole have cut back water consumption by more than the 25 percent since last June. "Drought shamers" have taken and posted videos online of water being wasted, and some cities have added a link on their website for reporting water wasters. The massive drought for the past four years has resulted in a massive tree die-off.

--Summarized by Lorraine McCarty

Save the Date

Friday, June 3, 2016

7 p.m.-9 p.m.

Second Annual Edith Chase Symposium

Topic: Groundwater Resources



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