

A!ert

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Alert is a monthly update on transportation and air quality planning activities in the Delaware Valley.



Air Quality and the Economy

Study Finds that Shale Gas, Not Regulations, Is Responsible for Decline in Coal Burning for Energy

Researchers at the Great Lakes Energy Institute at Case Western Reserve University have found that inexpensive shale gas produced by fracking has driven the decline in coal production in the United States during the last decade.

Power plants, which use 93 percent of the coal produced nationally, have been operating under the same Federal Environmental Protection Agency (EPA) regulations signed into law by President Bush in 1990. Proposed new rules since then have all been challenged in court and were not implemented until June 2016, when the EPA's restrictions on mercury and other toxic emissions were approved by the U.S. Supreme Court.

Consumption of coal continued to grow under those 1990-era EPA rules until 2008, and then went into steady decline, dropping by 23 percent from 2008 thru 2015.

The data show the drop in those years to be correlated with the advent of fracking and abundant and inexpensive natural gas extracted from shale formations. Between 2008 and 2015, natural gas production increased by a factor of more than 10 and its price dropped in half. Due to the continuing, and in some cases accelerating, technological and economic advantages of gas over coal, the decline in coal is expected to continue for decades into the future.

Mingguo Hong, associate professor of electrical engineering at Case Western Reserve University and co-author of the study, stated that "We can't say that the EPA rules have no impact as, for example, discouraging the building of new coal power plants because of the expectation that tougher air quality rules will clear the courts. The data say the EPA rules have not been the driving force (in reduced coal use)."

The authors expect that more affordable sources of renewable energy such as wind and solar will continue to make coal an unattractive fuel for energy generation for economic as well as environmental reasons. The researchers note that since 2010, the cost of utility-scale solar power has declined 68 percent and onshore wind has declined by 51 percent, making them close to, or already competitive with coal.



Save the Date

**Thursday,
November 3, 2016**

**Air Quality Partnership
Board Meeting
10:00 am**

*Location of Meeting:
DVRPC Pennsylvania Room
8th Floor
6th and Race Streets
Philadelphia, PA*

**Thursday,
November 10, 2016**

**Healthy Communities
Task Force
9:30 am**

*Location of Meeting:
DVRPC Conference Center
8th Floor
6th and Race Streets
Philadelphia, PA*

The article, published in the September issue of *The Electricity Journal*, did not explore the implications of this switch in fuels from coal to natural gas on air quality or climate change but does provide a case study of the economics of the energy industry that can provide regulators with tools to influence cleaner fuel choices for the industry moving forward.

For more information on the article “Coal’s Decline Driven by Policy or Technology”, please visit: www.energy.case.edu/coals-decline-culver-hong



Air Quality Information

Nearly Two Hundred Nations Sign Historic Agreement to Reduce Production of Hydrofluorocarbons

On October 15, 2016, the United States joined 196 nations in Kigali, Rwanda to amend the Montreal Protocols on Climate Change to agree to phase down emissions of hydrofluorocarbons or HFCs. HFCs are powerful greenhouse gases that contribute to global climate change as well as destroy the ozone layer in the stratosphere that protects the earth from harmful ultraviolet rays. HFCs are used in refrigeration and air conditioning and can have warming impacts hundreds to thousands of times more potent than carbon dioxide.

The Montreal Protocols are an international treaty aimed at combatting global climate change caused by emissions of greenhouse gases. This amendment to reduce HFC emissions is projected to avoid a full half-degree centigrade rise in global temperatures by the end of this century.

The agreement largely hinges on the use of alternative refrigerants. In the United States, this means that the use of HFCs will be phased out and in some cases banned when safe, alternative chemical refrigerants are available.

For more information on the Kigali Agreement, please visit: www.epa.gov.

Los Angeles gets Serious about Cutting Greenhouse Gases

Faced with a catastrophic natural gas leak last winter, the worst ozone pollution problem in the nation for three summers in a row, and damage to the coastline from rising sea levels, the Los Angeles City Council took an important step toward getting 100 percent of the city’s energy from renewable sources by ordering the Department of Water and Power to study how the city could reach that goal.

Currently, the city now gets only about a quarter of its energy from renewables, mainly wind. To get to 100 percent, it would need to convert a power grid that relies on coal and gas power plants that can adjust their supply to meet demand into one that can handle the vagaries of solar and wind power.

Eighteen other cities around the country have committed to the 100 percent goal. San Francisco has pledged to reach it by 2020; Boulder, Colorado, by 2030; and Salt Lake City by 2032. Other cities, like Chicago and Denver, are considering making similar commitments, as cities across the nation come to the realization that it is easier to act locally than to push legislation through Congress, which has recently been reluctant to address climate change or enact stricter environmental regulations.



DVRPC, 8th Floor
190 N. Independence Mall West
Philadelphia, PA 19106-1520
Phone: 215.592.1800 | Fax: 215.592.9125 | Web: www.dvrpc.org