

# Alert

dvrpc | March 2015

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



## Air Quality Regulations

### US EPA Proposes to Re-designate the DVRPC Region as an Attainment Area for Fine Particle Pollution

On February 17, 2015, the U.S. Environmental Protection Agency (EPA) published a proposal in the Federal Register to re-designate the Pennsylvania portion of the Philadelphia-Wilmington PM<sub>2.5</sub> Nonattainment Area as attaining the 1997 and 2006 fine particle pollution (PM<sub>2.5</sub>) standards. The EPA previously re-designated the Delaware (New Castle County) and New Jersey (Burlington, Camden, and Gloucester Counties) portions of the nonattainment area (NAA) to attainment in 2014 and 2013 respectively.

Mercer County was part of the New York-Northern New Jersey-Long Island PM<sub>2.5</sub> NAA. That NAA was re-designated to attainment for both the 1997 Annual and 2006 24-hour PM<sub>2.5</sub> air quality standards in 2014.

Each state in a NAA is required to submit re-designation requests to EPA separately. Pennsylvania's request was the last portion of the region to receive approval from the EPA. With the final approval of these actions the entire DVRPC region will now be in attainment of both the 1997 Annual and 2006 24-hour PM<sub>2.5</sub> air quality standards. The EPA also approved Maintenance Plans for each of the states in the new attainment areas that will serve as a road map for how the states will continue to meet PM<sub>2.5</sub> standards.

The EPA Region III will be accepting public comment on this proposed re-designation request and Maintenance Plan for Pennsylvania until March 19, 2015. Upon final approval of the attainment re-designation of the PM<sub>2.5</sub> NAAs, the DVRPC region will still be required to demonstrate transportation conformity for the two NAAs for an additional ten years as part of the Maintenance Plan requirements to insure the continued air quality improvements.

In a separate action, in January 2015, EPA designated Delaware County in Pennsylvania, as a nonattainment area for the 2012 Annual PM<sub>2.5</sub> standard. The other eight counties in the region meet this standard and Delaware County will become a one county NAA.

For more information on the proposed re-designation and Maintenance Plan for the PM<sub>2.5</sub> NAAs in Pennsylvania, please visit:

<http://www.gpo.gov/fdsys/pkg/FR-2015-02-17/html/2015-03169.htm>



## Save the Date

**Monday,  
March 9, 2015**

**Philadelphia Diesel  
Difference Working Group  
10:00 am**

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

**Thursday,  
March 19, 2015**

*End of Public Comment  
Period for Pennsylvania  
PM<sub>2.5</sub> Nonattainment Area Re-  
designation Request*

**Friday  
April 9, 2015**

*New Jersey Competitive  
CMAQ Funding Round  
Applications Due*



## Information

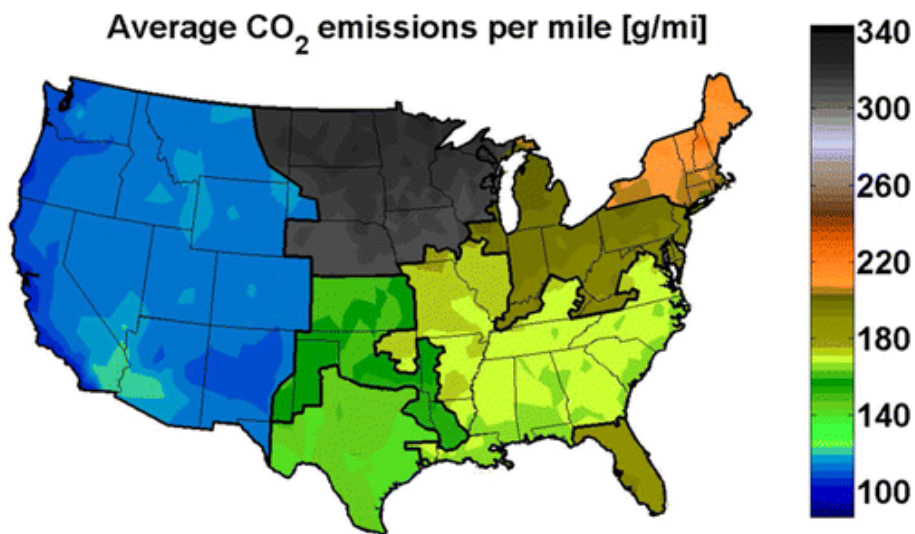
### Study Shows Regional Temperature Differences Influence Electric Car Range, Efficiency, and Emissions from Charging

An article published in the February 2015 issue of *Environmental Science and Technology*, asserts that regional temperature differences have a measurable impact on the range and efficiency of battery electric vehicles (BEV). The study was based on computer models that incorporated energy consumption data from Nissan Leaf drivers. The analysis found that the impacts of extreme heat or cold on battery efficiency, combined with increased energy demands from attendant heater and air conditioner usage, could reduce the range of the vehicle by 30% or more between the coldest day of the year in the Pacific Northwest (the region with the mildest winter temperatures) and the Upper Midwest (the region with the coldest winter temperatures). The study showed that temperatures above 100 degrees Fahrenheit in the Southwest had similar impacts on range and vehicle efficiency.

The researchers went on to correlate the energy usage of the vehicles to the sources of electricity generation in the vehicles' home region in order to develop a value for the average carbon dioxide (CO<sub>2</sub>) emissions per mile generated by the BEV. Results of that analysis, shown on the map below, indicates that the because of the region's climatic impacts on vehicle efficiency, combined with the number of coal-fired power plants providing electricity to the region's grid, CO<sub>2</sub> emissions from charging BEV's is highest in the Upper Midwest and lowest in the Pacific Northwest, which receives very little electricity from coal generation. The authors concluded that emissions attributable to BEV charging can "vary by up to 22 percent due to spatial and temporal ambient temperature variation and its implications for vehicle efficiency and charging".

According to the authors, up to 32 percent of greenhouse gas emissions are attributable to the transportation sector. This study provides valuable data to help evaluate BEVs as a tool to reduce emissions from passenger vehicles.

Source: Tugce Yuksel, Jeremy J. Michalek. **Effects of Regional Temperature on Electric Vehicle Efficiency, Range, and Emissions in the United States.** *Environmental Science & Technology*, 2015; 150224120252009 DOI: [10.1021/es505621s](https://doi.org/10.1021/es505621s)



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