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Alert

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

Air Quality and Transportation

Exports of Used Cars Contribute to Global Air Pollution

On October 26, the United Nations released a report on the impacts of the second-hand car market on global air quality. The report investigated the health and safety implications of older cars and trucks from the United States, Japan, and the European Union being sold in third-world nations.

The report found that while the United States, Japan, and the European Union have strict safety and air pollution regulations for vehicles sold in their countries, many of the nations receiving these vehicles have no such standards. Furthermore, the report found that many of the vehicles sent to these nations do not meet basic safety or air emissions standards in the sending countries and may even have had the air emissions control systems removed before export.

“What we found is not a pretty sight,” said Rob De Jong, an author of the report and head of the United Nations Environment Program’s Sustainable Mobility Unit. “Most of these vehicles are very old, very dirty, very inefficient and unsafe.”

The report states that there are about one billion cars on the road globally. That number is projected to double by 2050, with much of the growth coming from sales of second-hand vehicles in lower-income countries. Transportation already accounts for one-quarter of humanity’s carbon dioxide emissions. In many African cities, cars and trucks have become a dominant source of outdoor air pollution.

The report looked at 146 countries that import used cars and concluded that 86 of them had “weak” or “very weak” laws around the age or environmental performance of used vehicles entering their markets. While the report’s authors don’t call for a ban on the trade of used cars, they do recommend that countries do more to coordinate on minimum standards.

Some nations are setting maximum age standards on vehicles being imported into their countries. For example, Kenya prohibits the import of any vehicle over five years old in order to address safety and pollution concerns, but many more countries have not enacted these types of regulations for fear that the regulations would drive up the costs of cars beyond their citizens’ ability to purchase them.

If managed properly, the trade in market for second-hand vehicles could be a boon for efforts to fight climate change. In the United States and Europe, automakers are currently ramping up production of cleaner hybrid and

Save the Date

Tuesday
December 1, 2020

Application Deadline for Pennsylvania’s Driving PA Forward Heavy-Duty Truck and Bus Rebate Program

For more information, please visit:

http://www.depgis.state.pa.us/DrivingPAForward/

Friday
February 26, 2021

Application Deadline for Pennsylvania’s Driving PA Forward Electric Vehicle Charging Station Rebate Program

For more information, please visit:

http://www.depgis.state.pa.us/DrivingPAForward

electric vehicles. Once these cars trickle through wealthier markets, they could become increasingly affordable options for developing countries, too.

“If we get these policies right,” said Mr. De Jong, “it could have massive benefits for air pollution and climate change worldwide.”

To learn more about the United Nation’s report on the global second-hand vehicle market and its impacts on air quality and safety, please visit: https://www.nytimes.com/2020/10/26/climate/used-car-export-pollution.html

Air Quality and Health

Study Shows a Connection Between School Absences and Air Quality

Researchers at the University of Utah report a correlation between levels of air pollution and school absences in the Salt Lake City School District. The study notes that elementary school students show a higher sensitivity to air pollution levels than middle and high school students.

According to co-author Cheryl Pirozzi, assistant professor in the Division of Respiratory, Critical Care, and Occupational Pulmonary Medicine at the University of Utah, "Children are particularly susceptible to the health effects of air pollution, and it is possible that health effects, such as respiratory tract infections or asthma exacerbations, may lead to them missing more school, which can have long-term consequences for them."

The study, which was published in the journal *Environmental Research Letters,* on October 9, 2020, claims that there is evidence for an increase in school absences at a rate of 1.04 absences per $\mu g/m^3$ increase in particle pollution levels and a similar increase of 1.01 absences per one part per billion (ppb) increase in ozone pollution levels, even at levels of air pollution that aren't considered harmful. The worst increase in absences happened the day after high pollution exposure. On days after low, yet still elevated, pollution, absences continued to rise on the third, fourth, and fifth days of exposure.

Additionally, the researchers write that there may be a disparity between eastside and westside schools in the district. Schools on the west side, with a higher proportion of residents from minority groups, already have a higher rate of absences than the comparatively more affluent east side and are slightly more affected by the same level of pollution. The disparity isn't yet statistically significant, and the authors hope that an interdisciplinary team can further study these socioeconomic factors.

The authors acknowledge that there may be more factors at play that could account for some of the absences. Poor air quality days in the winter tend to be colder days, for example, and some children might stay home to stay out of the cold. Salt Lake City, unlike Philadelphia, experiences poor air quality in the winter because the city sits in a valley that promotes pollutant build-up during thermal inversions.

This kind of neighborhood-level air quality modeling requires a network of research-quality air sensors, and such a network has been building in the Salt Lake Valley over the last several years, operated by the University of Utah and by the state Division of Air Quality. That network includes mobile sensors on light rail trains as well as stationary research and regulatory grade sensors.

Absences come at a cost to schools, families, and the larger economy. As part of the study, the researchers tried to estimate those costs. Often a child staying home from school means a parent staying home from work. At an average hourly wage of $23.74, an absence can cost an hourly worker close to $200 a day. For families who receive free or reduced lunch, the cost of food then reverts to the family on days home.

And there are costs to the larger economy as well. Factoring in lost wages, lost taxes, and lost productivity due to absences, reducing air pollution by 50 percent could save Utah’s economy around $426,000 per year just from reducing absences in the Salt Lake School District. This result, the authors say, shows how reducing school absenteeism can and should be considered a benefit of improving air quality in the Salt Lake Valley.

To learn more about the impact of air quality on school absences, please visit: https://attheu.utah.edu/facultystaff/air-absences/

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