

**An Analysis of the Volkswagen Settlement
How Much Will Arizona Get and What Should It Be Used For
October 19th, 2016**

**Southwest Energy Efficiency Project
Arizona PIRG Education Fund**

Background on Volkswagen's Emissions Scandal

The Environmental Protection Agency (EPA) found Volkswagen installed "defeat devices" on some 567,000 "clean" diesel cars in the U.S. market to avoid emission control laws. As many as 11 million cars worldwide are equipped with the "defeat device."

These devices are elaborate software that turn on emission controls during testing and turn them off during regular driving, emitting as much as 40 times the legal limit of NO_x, a major smog-forming pollutant.

These "clean" diesel cars were marketed as vehicles that could meet clean air standards while also maintaining high levels of fuel economy and performance. Unfortunately, the only way these vehicles could meet the marketed fuel economy and performance standards was by disabling the emissions controls.

Consumer Reports tested 2015 and 2011 Volkswagen TDI diesel vehicles in "cheat" mode to assess fuel economy and performance. They found a noticeable decline in fuel economy for both models. Their testing also showed reduced acceleration with the 2011 model.¹

Health and Environmental Impacts

According to the EPA, high concentrations of NO_x contribute to ground level ozone and fine particulate matter and can have both a negative health and environmental impact. For example, NO_x contributes to acid rain, nutrient pollution in coastal waters and contributes to hazy air.²

In addition, NO_x poses a serious threat to human health. "Breathing air with a high concentration of NO_x can irritate airways in the human respiratory system. Such exposures over short periods can aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing), hospital admissions and visits to emergency rooms. Longer exposures to elevated concentrations of NO₂ may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with asthma, as

¹ Jake Fisher, [Consumer Reports Tests VW Diesel Fuel Economy, Performance in "Cheat" Mode](#), Consumer Reports, October 9, 2015.

² Environmental Protection Agency, [Basic Information about NO₂](#),

well as children and the elderly, are generally at greater risk for the health effects of NO₂.”³

Impacted Models⁴

Volkswagen Beetle, Beetle Convertible (2013-2015)	Audi A3 (2010-2015)	Porsche Cayenne (2014-2016)
Volkswagen Golf (2010-2015)	Audi A6 Quattro (2014-2016)	
Volkswagen Golf SportWagen (2015)	Audi A7 Quattro (2014-2016)	
Volkswagen Jetta, Jetta SportWagen (2009-2014)	Audi A8/A8L (2014-2016)	
Volkswagen Passat (2012-2015)	Audi Q5 (2014-2016)	
Volkswagen Touareg (2009-2016)	Audi Q7 (2009-2016)	

Recent Settlement

When Volkswagen was caught systematically cheating on emissions tests, the U.S. Department of Justice (DOJ) filed suit for violations of the Clean Air Act. The company and the DOJ have reached a partial settlement, which will be approved by a federal judge by October 25th. The settlement includes approximately \$10 billion in compensation to owners of noncompliant VWs, but also includes \$4.7 billion dollars that could help to accelerate the adoption of electric vehicles.⁵

The \$4.7 billion is distributed in two ways:

1. \$2.7 billion to an Environmental Remediation Fund, designed to reduce emissions of nitrogen oxides (NO_x). This is distributed to each state by a formula based on how many VW diesel cars were registered in that state.
2. \$2 billion to a Zero Emission Vehicle Fund with investments proposed by VW and approved by the EPA. Of this \$2 billion, \$800 million is earmarked for California, leaving \$1.2 billion for the rest of the country.

The Environmental Remediation Fund

The Environmental Remediation Fund is distributed to each state by a formula based on how many VW diesel cars were registered in that state. Each state may decide how they want to allocate the money within a set of allowable uses.

³ Ibid

⁴ Jeff Bartlett and Michelle Naranjo, [Guide the Volkswagen Emissions Recall](#), Consumer Reports, July 25th, 2016.

⁵ Environmental Protection Agency, [Volkswagen Clear Air Act Partial Settlement](#)

Up to 15% of the funds may be used to build out the electric vehicle charging network. The other allowable uses are primarily focused on replacing older diesel trucks and buses with vehicles with much lower NOx emissions.

It will be up to the Governor in each state to designate a lead agency, which must then develop a plan describing how the state will spend the Environmental Remediation Funds. Funds will be available starting in mid-2017 and can be spent over no less than 3 years and no more than 10 years.

How Much Do Southwestern States Receive

Arizona	\$53.0 million
Colorado	\$61.3 million
Nevada	\$22.3 million
New Mexico	\$16.9 million
Utah	\$32.4 million
Wyoming	\$7.5 million

How Should the Environmental Remediation Fund Be Used in Arizona?

These Volkswagen vehicles emitted pollutants by as much as 40 times the legal limit. Arizonans who thought they were driving cleaner cars were actually pouring huge amounts of pollution into our air every time they drove. It is critical that 100% of the funds be invested in the cleanest options available.

Therefore, we are calling on the state to invest the maximum 15% allowed into electrifying the Arizona highway system with a network of electric vehicle charging stations and spend the rest of the funds on electrifying our bus system. This approach maximizes the longterm benefits to Arizona's air quality and creates a fundamental market transformation towards electrifying transportation.

Investing in Electric Highways

One of the biggest challenges to electric vehicle adoption is the lack of charging infrastructure. Even though most daily trips are easily within the range of an EV, most people want to know that they can take longer trips across the state.

A number of other states have tackled this by investing in fast charging along their highways, giving travelers range confidence –and getting much higher uptake of EVs.

The VW settlement is an opportunity for Arizona to invest in a network that can make EVs practical for trips anywhere in the state, by locating fast chargers at 30-50 mile spacing. Fast chargers can “fill the tank” of an EV 80% full in 20-30 minutes.

Based on the maximum of 15% of the settlement funds that may be used for EV charging stations Arizona could invest \$7.5 million towards this end. This would be a major expansion of funding available in the state and would make major progress on building out the fast charge network across the state.

A typical station that combines fast charging with multiple level 2 (slower) chargers will cost approximately \$150,000 to install. Thus, these funds could cover 60 locations or more if other public or private funds are leveraged.

There is strong evidence that increased investment in charging leads to greater adoption of EVs. A study from Cornell University found that a 10% increase in charging leads to as 11% increase in EV sales⁶. Another analysis by the International Council for Clean Transportation also found strong correlations between public charging density and EV uptake⁷.

Arizona could go even further by working with surrounding states to collectively build out fast charging infrastructure along the connecting corridors, and in national parks and key attractions, to enable residents of the southwest to have confidence in their ability to travel anywhere across the region in an EV.

Electrifying Public Transit

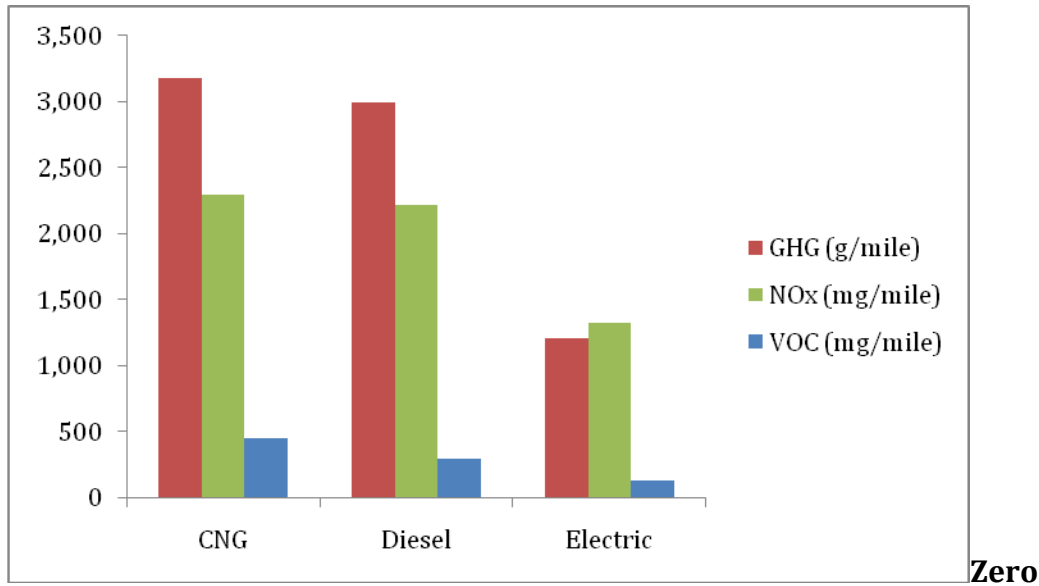
The most significant way to meet the Environmental Remediation Fund's goal of reducing NOx emissions would be to invest a significant share of the rest of the funds in Arizona in replacing existing older, diesel transit buses with new electric buses. This investment would also more effectively reduce VOCs and greenhouse gases.

While new diesel and CNG transit buses offer some emissions reductions, the most significant emission reductions would come from electric transit buses. In addition, because bus routes often run through dense areas with high volumes of pedestrians, reducing the noise and emissions from diesel buses has a big benefit to those neighborhoods.

⁶http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2515037

⁷<http://www.theicct.org/blogs/staff/ev-incentives-chargers-sales>

Comparison of Arizona Emissions from New Transit Buses by Technology, 2016



Emission Vehicle Fund

In addition to the Environmental Remediation Funds, VW will also have to commit \$2 billion dollars to a Zero Emission Vehicle fund. Of this, \$800 million will go to California and \$1.2 billion to the rest of the country. This will go to building out charging infrastructure and to other activities that promote the sales and use of zero emission vehicles.

VW will propose the investments and the EPA will have to approve their plans.

Arizona should begin discussions with VW now to maximize the likelihood of significant, well-targeted investments in expanding zero emissions vehicles infrastructure and sales across the region.

Conclusion

Volkswagen's reckless decisions resulted in 567,000 Americans purchasing a "clean" diesel vehicle that emitted pollution up to 40 times the legal limit. VW was caught and is being held accountable.

We have no way of clawing back the unnecessary and damaging pollution that spewed into Arizona's air. Therefore, we need to ensure that any money that VW pays in settlements is invested in the cleanest form of transportation. Focusing this investment in electrification is an important step in market transformation towards near zero emission transportation.

Arizona is expected to receive \$53 million from an Environmental Remediation Fund. 15% of that money should go to build out an electric vehicle charging station grid along our highways and the rest to replace older diesel buses with electric buses.

In addition, Arizona should actively compete for additional funds from the \$1.2 billion available in the Zero Emission Vehicle Fund.