June 29, 2019

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Subject: Comments on Volkswagen Beneficiary Mitigation Plan for New Mexico (Revised)

Dear Ms. Bisbey-Kuhen:

Conservation Voters New Mexico Education Fund and the New Mexico Environmental Law Center hereby submit the following comments on the Volkswagen Beneficiary Mitigation Plan for New Mexico (Revised May 31, 2019). We appreciate the opportunity to comment on the Revised Mitigation Plan. Overall, we think the Revised Mitigation Plan is a significant improvement over the original Mitigation Plan of July 24, 2018. We offer the following comments to strengthen the Mitigation Plan and to support the use of mitigation funds for replacing diesel powered vehicles – particularly school buses – with electric powered school buses.

COMMENTERS

Conservation Voters New Mexico Education Fund is a statewide, nonpartisan nonprofit organization committed to engaging the people of New Mexico in protecting our air, land, and water and the health of our communities. The Education Fund advances these goals by mobilizing people to advocate for conservation policy, enhancing the voting process, encouraging people to vote, cultivating conservation leaders, amplifying the voices of those most affected by environmental degradation, and working with communities to address environmental issues affecting their health and quality of life.

The New Mexico Environmental Law Center is a nonprofit public interest law firm that represents environmental and community organizations on a wide variety of environmental issues, including issues related to urban air pollution and climate change. Our clients include
community organizations in New Mexico whose members – and their children – suffer from respiratory problems, such as asthma, due to air pollution.

BACKGROUND

The Revised Mitigation Plan stems from the settlement of litigation against Volkswagen AG and several affiliated car companies that installed in many of their automobiles devices to defeat pollutant emission controls. On January 4, 2016, the United States, on behalf of the United States Environmental Protection Agency (EPA), filed a lawsuit against Volkswagen AG, Audi AG, Volkswagen Group of America, Volkswagen Group of America Chattanooga Operations, LLC, Dr. Ing h.c. F Porsche AG, and Porsche Cars North America, Inc.\(^1\) The complaint alleges that Volkswagen and the affiliated car companies installed in automobiles sold in the United States computer software that detected when an emission test was in progress and automatically reduced the emissions of nitrogen oxides (NO\(_X\)) so as to pass the emission test. NO\(_X\) emissions during an emission test consequently were not representative of – and were considerably lower than – NO\(_X\) emissions during normal operating conditions. The sale of automobiles with such computer software is a violation of the federal Clean Air Act\(^2\) and implementing regulations. The United States complaint sets forth four claims for various violations of section 203(a) of the Act,\(^3\) all related to importing and selling automobiles with devices designed to defeat or bypass emission controls. The State of California filed a similar lawsuit on June 28, 2016 for violations of California law.

On October 25, 2016, the court entered a Partial Consent Decree among the United States, California, Volkswagen AG, and some of the other defendants, and on May 17, 2017, the court entered a Second Partial Consent Decree among the United States, California, Volkswagen AG, and the other defendants. These two decrees embody a partial settlement of the litigation. Under the settlement, Volkswagen and the other defendants have set up a State Mitigation Trust and a Tribe Mitigation Trust, and they have paid a total of $2.925 billion into the trusts. Trust funds must be spent for environmental mitigation projects that reduce the emissions of NO\(_X\) in areas where noncompliant automobiles are or have been operated. The State Mitigation Trust consists of $2,865,635,889.38. This amount has been allocated among the beneficiaries: the 50 states, the District of Columbia, and Puerto Rico. A total of $17,982,660.90 has been allocated to New Mexico under the State Mitigation Trust Agreement.\(^4\)

As a beneficiary to the State Mitigation Trust Agreement, the State of New Mexico must prepare a mitigation plan as a prerequisite to receiving funds from the State Mitigation Trust. Accordingly, the Environment Department prepared the Revised Mitigation Plan to describe how it intends to use the settlement funds allocated to New Mexico under the trust agreement.

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\(^2\) 42 U.S.C. §§ 7401 to 7671q.

\(^3\) 42 U.S.C. § 7522(a).

\(^4\) Environmental Mitigation Trust Agreement for State Beneficiaries (Oct. 2, 2017).
COMMENTS

The comments of the Education Fund and the Law Center mostly fall into three broad but related and overlapping categories. First, the Revised Mitigation Plan should discuss in more detail the adverse health effects of diesel exhaust. Second, the Revised Mitigation Plan should express a clear preference for replacing diesel-fueled vehicles with electric vehicles and infrastructure. Third, the Revised Mitigation Plan should place greater emphasis on environmental justice concerns. We address each of these categories in turn. We also have a few, mostly minor, miscellaneous comments addressed below.

To facilitate the incorporation of our comments into the Revised Mitigation Plan, we propose specific revised and expanded text that can be inserted into the document. All factual statements in our proposed text are supported with citations to authoritative references. All of the references are available on the internet, but we would be happy to provide you with electronic copies of any or all of the referenced documents upon request.

1. Health Effects of Diesel Exhaust

We recommend that the Revised Plan’s discussion of the health effects of diesel exhaust pollution be expanded with more detail. As currently drafted, the Revised Plan briefly discusses health effects from inhalation of ozone and particulate matter, but it makes almost no mention of the health effects from inhalation of nitrogen oxides (NOX). An expanded discussion of the health effects of these pollutants will help educate the public on the health and environment benefits of phasing out diesel engines. It will also lend support to the Environment Department’s efforts to replace diesel engines.

At pages 3-6 of the Revised Mitigation Plan, we recommend replacing the section entitled “Pollutants of Concern” with the following two sections:

Pollutants Associated with Diesel-Fueled Vehicle Exhaust

Nitrogen Oxides

Nitrogen oxides (NOX) are a family of poisonous, highly reactive gases. These gases form when fuel is burned at high temperatures. NOX pollution is emitted by automobiles, trucks and various non-road vehicles (e.g., construction equipment, boats, etc.) as well as industrial sources such as power plants, industrial boilers, cement kilns, and turbines. NOX often appears as a brownish gas. It is a strong oxidizing agent and plays a major role in the atmospheric reactions with volatile organic compounds (VOCs) that produce ground-level ozone (smog) on hot summer days. EPA has set National Ambient Air Quality Standard (NAAQS) and motor vehicle emission standards for NOX under the Clean Air Act.

5 Volkswagen Beneficiary Mitigation Plan for New Mexico (Revised May 31, 2019), pp. 3-6 (hereinafter Revised Mitigation Plan).
Diesel engines operate at a higher temperature and pressure than gasoline engines. These conditions favor the production of NO\textsubscript{X} gases.

The NMED is using data from the U.S. EPA's 2014 National Emission Inventory (NEI) to identify the state's NO\textsubscript{X} emissions, specifically NO\textsubscript{X} emissions from diesel-powered vehicles. Review of the NEI will assist the NMED in identifying those areas within the state that are impacted by mobile source diesel emissions.

The 2014 NEI estimated that more than 98,970 tons of NO\textsubscript{X} were emitted from mobile sources in New Mexico. Figure 4 illustrates the major NO\textsubscript{X} sources within the state and their percentage contribution. Figure 5 breaks down the statewide mobile NO\textsubscript{X} sources and their percent contribution.

[Figure 4]

Mobile source emissions made up 44% of the total statewide NO\textsubscript{X} emissions. Statewide NO\textsubscript{X} emissions from diesel-powered vehicles and equipment were estimated at 74,000 tons of NO\textsubscript{X}, with on-road heavy-duty diesel making up 44%, or 43,860 tons, of the total. The high percentage of on-road heavy-duty diesel is attributable to the state's classification as a Freight Bridge State. The majority of diesel truck traffic passes through the state in an east-west direction. Figure 6 provides the NO\textsubscript{X} emissions, in tons for 2014, associated with on-road heavy-duty diesel-fueled vehicles and rail by county.

[Figure 5]

Ozone

Ozone is formed in the atmosphere from the combination of NO\textsubscript{X} and VOCs in the presence of sunlight. EPA has set NAAQS for ozone.

Two air monitors in southern Doña Ana County (one in Santa Teresa near the border crossing and one in Sunland Park at the Desert View Elementary School) have shown exceedances of the NAAQS for ozone, based on monitor data from 2014 to 2016. These monitors are located near El Paso, Texas, and Ciudad Juárez, Chihuahua, Mexico. All other monitors operated by the New Mexico Environment Department show compliance with the NAAQS; however, ozone levels measured in the towns of Carlsbad and Hobbs, and at Navajo Lake, are close to exceeding the NAAQS.

Particulate Matter
Under the Clean Air Act, particulate matter is divided into two categories: particles finer than 10 microns in diameter but greater than 2.5 microns (PM$_{10}$), and particles finer than 2.5 microns in diameter (PM$_{2.5}$). EPA has set NAAQS for both PM$_{10}$ and PM$_{2.5}$.

Diesel particulate matter (PM, also abbreviated DPM) is a complex mixture of solid and liquid material. There is presently one nonattainment area for PM$_{10}$ within Doña Ana County. An area of Anthony, NM, which lies on the border of Texas and New Mexico, is a PM$_{10}$ nonattainment area. This area was designated nonattainment for PM$_{10}$ by the EPA in 1991. Windblown dust frequently results in exceedances of the NAAQS for PM$_{10}$ and PM$_{2.5}$ in southern Doña Ana and in Luna counties during the spring season. Other areas of New Mexico also can be affected by dusty conditions during periods of high winds.

**Health Effects Associated with Diesel-Fueled Vehicle Exhaust**

The tailpipe exhaust from diesel-fueled motor vehicles contains many harmful pollutants, including nitrogen oxides (NO$_x$), carbon monoxide (CO), particulate matter, benzene, and polycyclic aromatic hydrocarbons. These pollutants are particularly harmful to the health of children and the elderly. According to EPA, chronic (long-term) inhalation exposure to diesel exhaust is likely to pose a risk of lung cancer in humans and is also likely to cause non-cancer harm to lung tissues. Acute (short-term) exposure can cause irritation and inflammation of the lungs. (EPA 2002). More recent studies have linked diesel exhaust to asthma.

Diesel-fueled motor vehicles also emit carbon dioxide (CO$_2$) and nitrous oxide (N$_2$O), both of which are greenhouse gases that contribute to global climate change.

The harmful health effects of some of the individual pollutants in diesel exhaust have been studied extensively.

**Nitrogen Oxides**

According to EPA, exposure to NO$_x$ irritates the lungs and can lead to pulmonary disease and respiratory infection. It exacerbates asthma. Long-term exposure can lead to asthma and chronic bronchitis. (EPA 2016).

**Carbon Monoxide**

According to EPA, carbon monoxide (CO) exposure can lead to cardiovascular disease and respiratory disease. (EPA 2010).
Ozone

According to EPA, short-term exposure to ozone can have adverse respiratory effects, including lung inflammation, decreased lung function, increased susceptibility to lung disease, and asthma. Short-term exposure to ozone also likely has adverse cardiovascular effects. Recent studies also show a causal connection between short-term ozone exposure and mortality. (EPA 2013).

People most at risk from breathing air containing ozone include people with asthma, children, older adults, and people who are active outdoors, especially outdoor workers. Children are at greatest risk from exposure to ozone because their lungs are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure. Children are also more likely than adults to have asthma.

Particulate Matter

According to EPA, exposure through inhalation of particulate matter can have adverse respiratory effects, including lung inflammation, decreased lung function, increased susceptibility to lung disease, and aggravation of asthma. It can also have adverse cardiovascular health effects, including coronary heart disease and congestive heart failure. Health effects vary depending on the source and size of the particulates. (EPA 2009).

The particles in diesel exhaust are of special concern because, due to their respirable size, they can penetrate deep into human lungs. The composition of DPM includes many species that are known for their adverse health effects, including several carcinogens.

Benzene

According to the Agency for Toxic Substances and Disease Registry (ATSDR), benzene is a known human carcinogen. Inhalation of benzene can cause drowsiness, dizziness, headaches, rapid heart rate, and respiratory irritation. Long-term inhalation of benzene can cause blood disease, including leukemia, and damage to reproductive organs. (ATSDR 2007).

Asthma is associated with many of these pollutants, and asthma is increasingly prevalent in New Mexico. The New Mexico Department of Health reported in 2014 that from 2011 to 2012, 14.3% of New Mexico adults 18 years of age or older reported they had been diagnosed with asthma in their lifetime and 9.6% reported they still have asthma. During the same period, 13.6% of New Mexico children were reported to have been diagnosed with asthma in their lifetime and 9.0% were reported to still have asthma. The current asthma prevalence
estimate equals approximately 150,000 adults and 47,000 children in New Mexico who have the disease. (N.M. Dept. of Health 2014). Moreover, the prevalence of asthma has increased steadily since 2000. (N.M. Coalition on Asthma). Asthma is more common in adults and children from households with low incomes. (N.M. Dept. of Health 2014). Among children, asthma is the leading cause of missed school days due to chronic illness. (N.M. Dept. of Health 2009).

2. Preference for Electric Vehicles and Infrastructure

We also recommend that the Revised Plan state a clear preference for replacing diesel-powered engines with electric-powered motors and infrastructure. Older diesel engines should not be replaced with newer diesel engines. Nor should they be replaced with alternative fuel vehicles, such as compressed natural gas or liquid natural gas, except in exceptional circumstances. We have three reasons for supporting electric vehicles over other alternatives.

First, although natural gas engines are generally less polluting than diesel engines, and newer diesel engines are generally less polluting than older diesel engines, all internal combustion engines emit significant levels of harmful pollutants and greenhouse gases. There is no such thing as “clean diesel.” Electric engines, on the other hand, are free of harmful emissions. Even if the source of the electricity used to charge the vehicle battery is derived from fossil-fuel combustion (e.g., a coal- or gas-fired power plant), the combustion will contribute less air pollution in densely populated urban areas. Ideally, the vehicle batteries can be charged using solar (or wind) energy, which is plentiful in New Mexico, and which does not emit harmful air pollutants.

Second, electric motors are more energy-efficient than internal combustion engines. They have fewer moving parts and require less maintenance. Other than the batteries, electric engines have a longer useful life.

Third, the manufacture of electric vehicles is a developing industry. By giving preference to electric vehicles, the Department can promote and help advance a technology that can reduce the emission of harmful pollutants and greenhouse gases enormously.

We recognize that the Revised Plan, as currently drafted, places greater emphasis on electric vehicles than did the original plan. But it seems to place nearly equal emphasis on alternative fuel vehicles. For example, the original State Mitigation Plan stated one of the Department’s listed goals would be to “[f]ocus on funding projects that repower or replace older diesel-fueled vehicles and engines.”6 This goal would support projects that simply replace older diesel engines with newer model diesel engines. The Revised Plan, in contrast, states that the Department will “[f]ocus on funding projects that repower or replace older diesel-fueled vehicles and engines with those that are all-electric or utilize an alternate fuel.”7 We appreciate this

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6 Volkswagen Beneficiary Mitigation Plan for New Mexico (July 24, 2018), p. 2.

7 Revised Mitigation Plan, p. 3 (emphasis added).
change; it is a substantial improvement over the original plan. But we believe the goal can and should give a clearer preference to electric vehicles and infrastructure.

We therefore recommend that the first numbered goal be rewritten as follows:

Focus on funding projects that repower or replace older diesel-fueled vehicles and engines with those that are all-electric or utilize an alternate fuel, but with a clear preference for all-electric vehicles and engines and associated infrastructure.

We further recommend that a new paragraph be added after the numbered list of goals to make some of the same points we make above:

The first item on the list states a preference for electric vehicles and infrastructure; it does so for several reasons. First, all internal combustion engines emit significant levels of harmful pollutants and greenhouse gases. Electric engines, by contrast, are free of harmful emissions. Even if the source of the electricity used to charge the vehicle battery is derived from fossil-fuel combustion (e.g., a coal- or gas-fired power plant), the combustion will contribute less air pollution in densely populated urban areas. Ideally, the vehicle batteries can be charged using solar (or wind) energy, which is plentiful in New Mexico, and which does not emit harmful air pollutants. Second, electric motors are more energy-efficient than internal combustion engines. They have fewer moving parts, require less maintenance, and (other than the batteries) have a longer useful life. Third, the manufacture of electric vehicles is a developing industry. Giving preference to electric vehicles helps advance a technology that can reduce the emission of harmful pollutants and greenhouse gases enormously.

3. Environmental Justice Considerations

We also recommend that the Revised Plan give greater consideration to environmental justice concerns. We appreciate that the Revised Plan lists “environmental justice areas” as priority areas for mitigation projects, and that it recites the EPA definition of “environmental justice.” These passages should be expanded, however, with more specific discussion.

We recommend that the following new numbered goal be added to the list at the end of page 2:

5. Prioritize projects located in environmental justice areas where low-income communities, Tribes, Pueblos or people of color have been disproportionately affected by air pollution.

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8 Revised Mitigation Plan, pp. 2, 16-17.
We also recommend that the section on Environmental Justice under High Priority Areas be expanded as follows:

*Environmental Justice*

The EPA defines Environmental Justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies. Meaningful involvement means that: (1) potentially affected populations have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment or their health; (2) the public’s contribution can influence the regulatory agency’s decision; (3) the concerns of all participants involved will be considered in the decision-making process; and (4) the decision-makers seek out and facilitate the involvement of those potentially affected. (EPA 2015).

Environmental justice areas commonly include communities or populations that are more adversely, disproportionately, or historically impacted by environmental issues than other communities because of geography, poverty, discrimination, limited political power, or similar factors. Environmental justice areas are often located within and adjacent to high pollution areas.

Environmental justice areas in New Mexico include low-income rural Hispanic communities, such as those in Rio Arriba and McKinley Counties in northern New Mexico; indigenous communities such as the pueblos and the Navajo and Apache reservations; and Hispanic, African American, and Asian urban communities, such as the International District and the South Valley in Albuquerque.

4. Miscellaneous Comments

We have a few additional comments that do not fall into any particular category, but are nevertheless important.

In the discussion of the Beneficiary Mitigation Plan, the amount of the state mitigation trust funds allocated to New Mexico, $17,982,660.90, is not specified. It should be. The amount that has already been committed for approved projects should also be specified.

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9 Revised Mitigation Plan, p. 1.
The Environment Department proposes to use 15% of the allocated funds, the maximum amount allowed under the Trust Agreement, for light-duty zero-emission vehicle supply equipment.\(^\text{10}\) This category would include electric vehicle charging stations. We support this proposal. The number of electric vehicle charging stations in New Mexico is inadequate.

Finally, the following list of references should be added at the end of the last page of the document:

REFERENCES


N.M. Department of Health 2009. Managing Asthma in New Mexico Schools.

\(^{10}\) Revised Mitigation Plan, p. 14-15.
Thank you for your consideration of our comments. Please do not hesitate to call or email either of us if you have any questions on these comments.

Sincerely,

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