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Utilities have a Vital Role in Advancing Electric Vehicle Infrastructure through the VW Settlement

Phil Jones, Executive Director of Alliance for Transportation Electrification, and Nick Nigro, Senior Advisor to the Alliance and Founder of Atlas Public Policy

The $14.9 billion settlement among Volkswagen, the federal government, and the State of California, approved in October 2016, is the largest environmental settlement in U.S. history and provides a rare opportunity to turn a scandal into a positive outcome—the acceleration of efforts to electrify the transportation sector. The electric vehicle (EV) infrastructure gap needs to be closed for this market transformation to occur. Although there has been recent progress in building out some EV infrastructure, the market still faces significant uncertainty due to business model challenges, a lack of near-term demand, and the quick pace of technology change. Electric utilities and public utility commissioners can play a critical role in addressing this infrastructure gap. Indeed, public utility commissions are in the best position to ensure that utilities in their states consider this important opportunity.

At a high level, it is important to note that states have a great deal of flexibility in designing mitigation plans that comply with the terms of the settlement and its overall goal of putting the state on a path to reduce tailpipe pollutants and carbon dioxide. While this paper focuses on the key role of electric vehicles (or zero emission vehicles, ZEVs), a number of states have opted to use the settlement to focus on "cleaning up" the older, polluting, diesel buses, trucks, and vehicles in their territories through investments in "clean diesel" vehicles. Public utility commissions (PUCs) in states that choose to pursue plans focused on "clean diesel" or other similar solutions, may have a smaller role in managing the use of the VW settlement funds than those that opt to pursue ZEV pathways.

Although this paper focuses on ZEV opportunities, we describe the range of potential programs available to states to present a fuller picture of the options open to state commissions and utilities. We

also note that the state PUCs will play a larger role in overseeing plans that pursue a ZEV strategy that requires the development of substantial EV infrastructure than in mitigating pollution by using the funds to clean up existing sources of pollution.

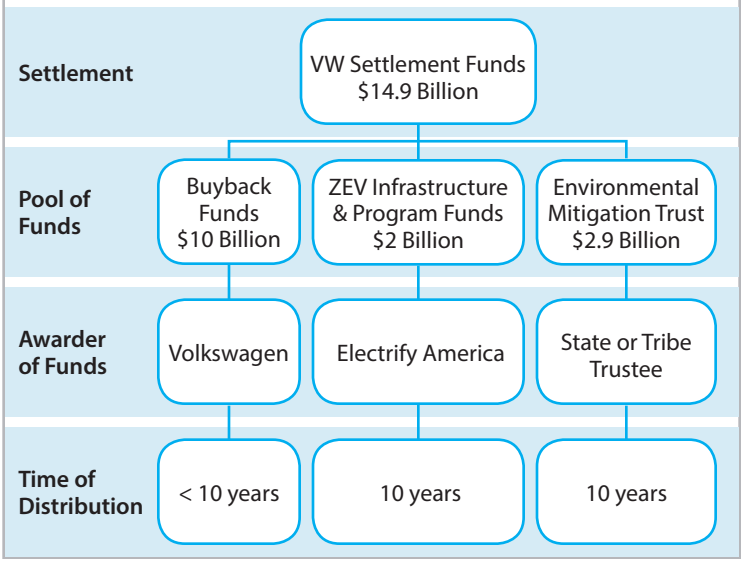
All data from this paper are from the Atlas EV Hub (www.atlasevhub.com) unless cited otherwise.

The VW Settlement & Electric Utilities: The Two Largest Near-term Funding Sources for EV Infrastructure

The $14.9 billion VW legal settlement includes three components: **$10 billion** to buy back or modify diesel vehicles from consumers; **$2 billion** for national and California-specific investment in ZEV infrastructure and programs and brand-neutral media activities aimed at increasing public awareness of ZEVs; and an environmental mitigation trust fund of **$2.9 billion** (see **Figure 1**). At least $2 billion of the settlement will go toward investments in zero emission vehicle (ZEV) technology, primarily EV charging stations.[1] The $2 billion ZEV investment comes from a for-profit endeavor being led by a Volkswagen subsidiary called Electrify America. The $2.9 billion mitigation trust, on the other hand, is led by public agencies (mostly state environment departments) and has spawned a flurry of activity in the states as they plan and execute their funding programs, many of which could include deploying light-duty EV charging stations or medium- and heavy-duty EVs, such as school buses.

In addition to the dollars provided by the settlement, the electric utility industry itself has emerged as a major player in building out EV infrastructure in recent years, as companies have recognized the promise that EVs can improve grid asset utilization and expand electricity markets into new spaces. Marrying these two initiatives—the VW settlement and burgeoning electric utility programs—could create the momentum needed to build out a robust EV infrastructure network for passenger vehicles, trucks, and transit buses in metro regions and along highway corridors.

Figure 1: Simplified Illustration of VW Settlement Fund Distribution



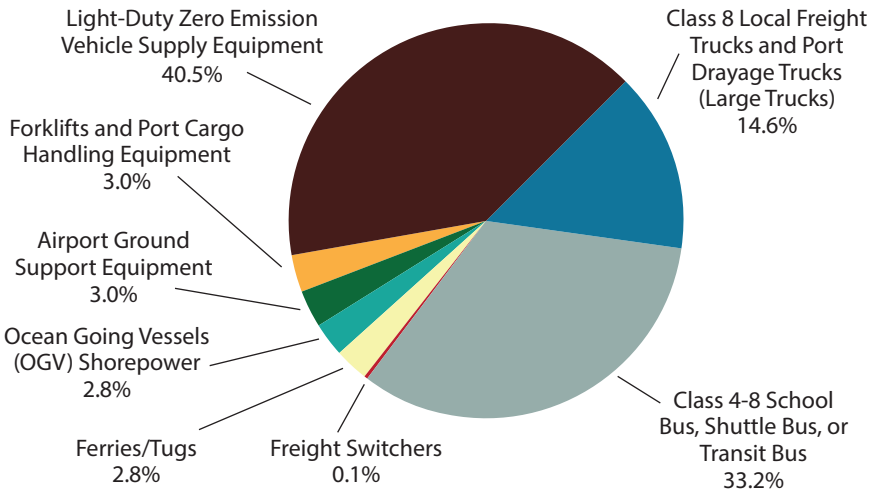
Explaining the Environmental Mitigation Trust

The funding provided by the Environmental Mitigation Trust and Electrify America's work will result in significant investments across the country in EV charging infrastructure, electric trucks and buses, and consumer education. The $2.9 billion trust will be distributed to states and tribal nations in amounts proportionate to the number of vehicles affected in each jurisdiction, with California receiving the largest amount ($800 million) and each other

1 The U.S. Environmental Protection Agency and the Federal Trade Commission filed a civil complaint against Volkswagen that claimed the automaker installed software in some of its diesel models that enabled emissions controls only when the vehicles were being tested. This software resulted in greater vehicle performance on the road, but also an average on-road emissions 9 to 38 times the U.S. limit. The complaint resulted in a settlement whereby Volkswagen agreed to spend $14.9 billion, a U.S. record for an environmental protection action. The settlement also includes a civil penalty of $1.45 billion. See *Volkswagen to Spend Up to $14.7 Billion to Settle Allegations of Cheating Emissions Tests and Deceiving Customers on 2.0 Liter Diesel Vehicles,* https://www.justice.gov/opa/pr/volkswagen-spend-147-billion-settle-allegations-cheating-emissions-tests-and-deceiving.

jurisdiction receiving at least $8.125 million. To be eligible to receive this funding, a state must solicit public input and establish a Beneficiary Mitigation Plan outlining how it will spend the funds. Each state plan must include specific objectives, such as criteria for air and greenhouse emission reductions. The funds must be invested in one of 10 possible "mitigation actions," including transitioning medium and large trucks, school and transit buses, shore power, airport ground support equipment, and light-duty zero emission vehicle supply equipment to electricity, as well as plans to limit the emissions of currently in place equipment.

Figure 2: Funding allocations dedicated to zero emission technology



Source: Atlas Public Policy, "Atlas EV Hub," *Atlas Public Policy*, September 2018, http://www.atlasevhub.com, accessed September 11, 2018.

A special carve out of up to 15 percent has been set aside to deploy "light-duty zero emission vehicle supply equipment," which can include the acquisition, installation, operation, and maintenance of EV charging infrastructure. States can also use up to 100 percent of these funds for any other eligible mitigation action; for example, funding the partial or full cost of a medium- or heavy-duty electric vehicle and associated charging infrastructure.

As of July 2019, 50 states and the District of Columbia (D.C.) had issued beneficiary mitigation plans (BMPs), totaling $2.68 billion of the total $2.9 billion in the trust. More than $680 million in 47 of these states and D.C. is dedicated to funding zero emissions technology. Light-duty infrastructure accounts for over 40 percent of these funds, followed by class 4-8 school buses, shuttle buses, and transit buses (see **Figure 2**). In addition, more than three-quarters of total funds have either been dedicated to or are eligible for ZEVs. Ten of the 47 states and D.C. have dedicated zero emission funding allocations to areas other than light-duty infrastructure. A few states have mentioned hydrogen fuel cell technology in their plans, although most have focused on battery electric vehicles for the ZEV funding.

Thirty-two states have decided to pursue funding for either conversion of older diesel fleets to clean diesel or to ZEV fleets. Three states have decided against using the 15 percent set-side for light-duty EV infrastructure. Although more than $430 million of the allocations in the plans submitted have been earmarked for these purposes, states may change their BMP after its initial submittal, and can move from one approach to another.

The examples that follow illustrate the different approaches to developing mitigation plans.

- Arizona has awarded $31.9 million of its $56.6 million allocation as of July 2019, with nearly 90 percent of the funding going to new diesel school buses.

- Iowa awarded $4.6 million of its $21 million allocation in June, 2019. Grants include school buses, transit buses, freight trucks, and non-road vehicles, with 64 percent of the funds going to new diesel vehicles, 32 percent going to propane school buses, and the remaining 4 percent going to electric off-road vehicles.

- New Mexico announced an award of $5.9 million for seven projects in December 2018. Most projects are replacing older diesel vehicles with newer ones, with $1 million of the funds going to compressed natural gas vehicles and electric airport ground support equipment.

- Wisconsin has awarded $32 million of its $67 million as of July 2019, with more than 55 percent of funds initially directed to diesel technology. Wisconsin amended its plan in July to allocate the full 15 percent to EV charging.[2]

Utility Engagement in these Investments is Critical

Electric utilities regulated by state PUCs play a critical role in ensuring that the distribution grid can transform into a system capable of integrating EV infrastructure and other distributed energy sources and performing this transformation reliably and cost-effectively. State PUCs can incent this behavior by focusing on the settlement and its uses. As more EVs connect to the grid at ever increasing power rates,[3] the utility will be an essential partner in ensuring that EVs achieve their potential to deliver lower operating costs and environmental benefits. As mitigation trust funds are disbursed by state agencies, state PUCs should be actively involved in ensuring that these funds are deployed in the optimal locations (planning), have a reasonable rate structure (rate design), and that the EV infrastructure is operated efficiently (grid operations).

A lack of robust utility involvement could be a wasted opportunity, since more than $1.1 billion in programs in 21 states have been approved, with another $1.5 billion under consideration. Some of the potential utility programs to date have included rebates for home charging stations, the development of utility-owned public fast charging sites, fleet advising, consumer education, and special EV charging rates. Because utility regulations and policies differ greatly by state, the agencies in each state, including PUCs, need to take these factors into consideration and develop programs that fit those needs.

The states' beneficiary mitigation plans have allocated funds to build out fast-charging networks (e.g., Virginia and Maine) and created dedicated pilot programs to demonstrate new medium- and heavy-duty electric vehicle technology. For example, Minnesota dedicated 15 percent of VW funds to a heavy-duty electric vehicle program. Georgia is planning to use all of its funds to repower and electrify transit buses and airport shuttle buses. Illinois plans to promote ZEVs in two ways: first, by dedicating 10 percent of funds for all-electric school buses, and second, by funding charging infrastructure. Illinois will also use the settlement for vehicle conversion, where required, to support all-electric projects (of which 65 percent of off-road projects and 20 percent of medium- and heavy-duty vehicles are eligible).

The utility company will play a vital role in each of these programs to ensure that infrastructure and vehicles are deployed successfully. For example, utilities will help with charging station siting, especially siting of high-powered charging infrastructure, by identifying places with suitable power capacity or estimating the costs of installing equipment. This assistance will be an essential part of a publicly funded program. For medium- and heavy-duty vehicles, utilities will again play an important role in infrastructure deployment and can assist school districts, mass transit agencies, and other funding recipients with their proposals.

Utilities can also help ensure that transportation electrification programs related to the settlement benefit a broad cross-section of the public. Many state plans have cited the desire to focus funding on disadvantaged communities and those disproportionately burdened by pollution from mobile sources. For example, Tennessee created the Disproportionate Burden Index to ensure that funding is distributed to the most distressed and

2 Jane McCurry, "Governor Evers Signs Budget Designating VW Money to Electric Vehicle Charging Stations!," *Renew Wisconsin,* July 3, 2019, https://www.renewwisconsin.org/evers-signs-budget-designating-vw-money-to-charging-stations, accessed July 29, 2019.

3 Although the norm for maximum power of DC fast charging until now has been 50 kilowatts, technology is advancing to higher speed charging, reaching 150 and 350 kilowatts in the near term.

vulnerable populations. Utilities are uniquely qualified to assist with these programs, given their extensive experience with improving access to electricity to people of all incomes.

The Role of the State Commission

State PUCs will play an important role in the coordination and oversight of these proposals. The state commission's primary role is to ensure that the distribution grid performs reliably, and that the plant in service assets in the grid are prudently incurred and well utilized. It also must ensure that the rates have a reasonable rate design that meets the just and reasonable standard, and that where costs are shifted among rate classes, that shift is reasonably connected to cost-of-service and is consistent with the relevant public policies of the state, including environmental and economic policies. The VW settlement funds present a one-time source of funding that can be leveraged with other traditional sources of funds to make certain projects more economic. Accordingly, it is important for the state commission to be aware of and oversee utility efforts to engage with potential partners for the mitigation trust plans. We provide some ideas about this role:

- Where regulated utilities are engaged in the planning efforts, the state commission should be aware of and monitor these plans, particularly as they relate to the overall transportation electrification planning for that utility;

- The state commission could schedule a workshop, or recessed open meeting, and invite its sister agencies, such as the DEQ and state energy office, to receive a briefing on the mitigation plan. This would be a good opportunity to hear from the utilities as well.

- In terms of planning for transportation electrification either separately or in the context of an Integrated Resource Plan process, the state commission may want to institute a process by which the expected increased loads from EVSE, including temporal and location considerations, are included in planning efforts. California, Oregon, and Minnesota have already begun such efforts, with the Oregon PUC instituting a formal rulemaking. Hearing about these plans in advance will help the utility to develop a process so that the state commission will have a greater awareness of these projects and EV infrastructure opportunities. This awareness will help the state commission's review of cost recovery issues, including a prudency determination and will give them a better foundation of information on these new technologies and new actors.

- Finally, the state PUC should consider the scalability of EV infrastructure overall, including the VW settlement funding for projects, in its general oversight and coordination responsibilities. As EV penetration rates increase—both for light-duty and heavy-duty vehicles—the costs of infrastructure should come down as well. Greater scale and increased availability of EV charging stations across all types, together with smart charging rate design, should provide significant benefits to both ratepayers and EV owners across all potential consumers.

About the Authors

Philip Jones is a former commissioner with the Washington Utilities and Transportation Commission for 12 years, from 2005 to 2017, and Past President of NARUC from 2012 to 2013. He presently serves on a number of advisory bodies, such as the Electric Power Research Institute Advisory Council, board advisor to Energy Impact Partners, and an advisor to Dragos, Inc. He is a graduate of Harvard College and a resident of Seattle, Wash.

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