TEXAS COMMISSION ON )
ON ENVIRONMENTAL QUALITY )
VOLKSWAGEN ENVIRONMENTAL )
MITIGATION TRUST )
BENEFICIARY MITIGATION )
PLAN FOR TEXAS )

PUBLIC MEETING
WEDNESDAY, SEPTEMBER 26, 2018

BE IT REMEMBERED THAT at 2:00 p.m., on
Wednesday, the 26th day of September 2018, the
above-entitled matter came on for hearing at the Texas
Commission on Environmental Quality, 12100 Park 35
Circle, Room 201S, Austin, Texas, and the following
proceedings were reported by Janis Simon, Certified
Shorthand Reporter.
MR. DAYTON: I want to go ahead and open it up to public comment. We have about ten or more folks. We have -- are trying to do this in an hour or so. If you try and -- if you can keep your comments to five minutes, I would appreciate it, not that I'm going to be putting up a red button up or anything like that.

I'll try and go -- and also, when you come up, we'll do this like a hearing where we would ask that you state your name and who you represent, if you're an individual or if you're representing a particular entity or a government official or whatever.

And remember that our court reporter is trying to listen. I've asked to her to make sure and speak up if she can't understand what you have said, but I will -- I'll give you either the microphone or you can speak into this mike. Again, I apologize for this setup here. This is how it works. If you would like to face the audience instead of that way, feel free as long as you use the microphone and the court reporter can hear you. Okay.

So, with that, let me first offer to -- Brandon Garcia with Senator Watson's office, if you'd
like to come up and speak first.

MR. GARCIA: Great. Thank you, Steve, and thank you, TCEQ, for having us at this event and being able to comment in this public hearing. I have a letter from Senator Watson here. He couldn't be here, but he did send us to express his concern, particularly about the exclusion of the Austin area in this settlement. I'll just go ahead and read the letter. This was sent out yesterday.

Dear Commissioner Niermann, I am concerned about the exclusion of Austin and its surrounding metro area from Volkswagen Settlement for Texas. While all areas of the state will be eligible to compete for the 31.35 million for electric charging infrastructure, TCEQ is -- is proposing that only five areas of the state -- Dallas-Fort Worth, Houston, San Antonio, El Paso, Beaumont-Port Arthur -- will be eligible for the 169.29 million in funding for vehicle replacement.

Austin's exclusion would mean that this allocation of funding does not conform to the purposes of the fund. As I'm sure you're aware, the stated purpose of Volkswagen Mitigation Fund is to, quote, fully mitigate the total life -- lifeline excess NOx emissions through environmental mitigation projects that reduce NOx emissions in places where VW diesel engine
cars were, are, or will be operated, end quote.

Of the four -- 40,444 affected vehicles in Texas, over 5,000 were registered in the Greater Austin Area. And to pause on this gentleman's questions about the additional penalties for Volkswagen, including Austin now which have over 5,000 cars, Volkswagen cars, would actually be very helpful. This figure translates to 2.39 affected vehicles per 1,000 people in the five-county Austin-Round Rock metro area, a larger number than in eligible counties in the Dallas-Fort Worth area which has 1.37 vehicles per 1,000 people, the Houston area which has 1.36 vehicles per 1,000 people, the El Paso area which has a 1.07 vehicles per 1,000 people, the Beaumont area which has .83 vehicles, and the San Antonio area which has 1.63 vehicles.

The most appropriate and equitable solution is to allocate funding to regions on the basis of how many affected vehicles were used. This method better aligns with the purpose of the fund and conforms with the overall share that the state received from the settlement, which was originally calculated by the number of affected vehicles registered within its boundaries. It should also be noted that TCEQ's reasoning in its fund allocation, which prioritizes areas that are likely to see the greatest benefit, by an
initial or significant event to attain national ambient air quality standards or to remain in ozone attainment for these standards fails to recognize the significant risk that the Austin-Round Rock area faces in falling short of the 2015 ozone standards by the end of 2019. Moreover, Austin's ozone levels are currently higher than one of the five areas proposed for funding, which is the Beaumont-Port Arthur area.

I appreciate your consideration, and thank you for your service. Sincerely yours, Kirk Watson, State Senator.

Thanks.

MR. DAYTON: Thank you, Brandon.

All right. Next, we have Jeff Coyle with the City of San Antonio. And, again, however you like to speak up here. If you want to use this mike, you can press that button there or --

MR. COYLE: I'll just take the mike.

Thank you. My name is Jeff Coyle. I'm the Director of Government and Public Affairs for the City of San Antonio, and on behalf of the City of San Antonio we just wanted to thank TCEQ for the proposed allocation and, specifically, for the recognition of the -- both the urgency and the unique opportunity that exists in San Antonio. You mentioned the standard being
lowered to 70. San Antonio has been driving down our ozone levels continuously, and we're at a 74 on the three year average, which just this week officially made us non-attainment.

We have less than three years to get out of it, and I say, less than, because this year 2018 is the first of the next three that will be averaged and, of course, the year is coming to a close. So, there's significant urgency to address this problem, fix it now or face more severe regulations in very short order.

The opportunity that exists is that our -- as I mentioned, 2018 would be the first of the three years averaged, and currently we're showing a design value of 72. So, we're now just two parts per billion above the new standard, and all of which is to say that this money would make a significant difference for us in moving the needle and getting back in attainment. And we are -- as a city, we've brought together all of our partners, our -- our transit authority, our local school districts, our airport, our military bases. We're all coordinating together in preparation for the applications, and we intend to put it to very good use.

So, we -- we hope the proposed allocation is what ultimately becomes finalized, and -- and we want to express our gratitude for it. Thank you.
MR. DAYTON: Thank you, Jeff. Next is Justin Henderson with the Capital Metro.

MR. HENDERSON: Good afternoon, and thank you for the opportunity to speak this afternoon on the TCEQ Draft Beneficiary Mitigation Plan for Texas. My name is Justin Henderson. I'm with Capital Metro. I'm the Government Relations Coordinator.

Capital Metro strongly supports the stated goals -- the -- of the draft plan to reduce NOx emissions, reduce exposure to pollutants, prepare for increased and sustained use of zero-emission vehicles and complement other incentive funding programs. We also support TCEQ's decision to involve the relevant units of regional government, such as the councils of government and disbursement of the VW funds. Applied thoughtfully, this funding can help communities meet clean air goals while achieving additional community and sustainable -- sustainability benefits. We encourage the prioritization of projects that meet clean air needs, as well as provide additional community benefits. Capital Metro believes that this is -- this opportunity can be leveraged to support the strong commitments of the coalition of local governments and partners in the Austin-Round Rock metro area.
The governments and the people of Central Texas have worked voluntarily to reduce harmful emissions and maintain a high standard of air quality; however, the Austin-Round Rock MSA is currently at significant risk for violating the 2015 Ozone National Ambient Air Quality Standard by the end of the year 2019 and has ozone levels higher than one of the five areas proposed for funding. This funding is critical at a time when the region is at risk for -- for becoming non-attainment. We urge TCEQ to consider the primary purpose for the trust agreement, that is to mitigate NOx emissions in the communities that likely had additional emissions from the vehicles under the consent decree.

The Austin-Round Rock metro area had the largest number of vehicles under the consent decree per capita, and vehicles in the Austin-Round Rock metro area represent over 12 percent or one in eight of all the affected vehicles. The plan states that funds are intended to mitigate excess NOx emissions from the affected vehicles. And given the large number of affected vehicles in the -- in the Austin-Round Rock metro area, it should be among those areas that -- that receive funds from the trust.

We further urge TCEQ to prioritize public fleets, which would provide community benefits along
with air quality benefits. Support for fleets, particularly public transit fleets, multiply the benefits by providing opportunities for a cleaner bus fleet, as well as providing a clean shared choice for many commuters in the region. Prioritizing projects with a high matching contribution would increase impacts of the funds from the trust and encourage vocal commitment and stewardship of these funds, and we encourage TCEQ to include this as a consideration for projects in the final plan.

Thank you very much for your time this afternoon.

MR. DAYTON: Thank you very much.

Next is Gerald Daugherty with the Travis County.

MR. DAUGHERTY: Thank you, Joe -- Steve and Joe. Thank you very much. My name is Gerald Daugherty, and I'm the Precinct 3 Travis County Commissioner.

Yesterday we had our Commissioners Court meeting, and we were trying to figure out who was going to come and speak. You know, I suggested that we send the best looking person.

(Laughter)

Actually, I would have probably lost.
That's -- they said, why don't we send you, Gerald, because you're the lone Republican on the Commissioners Court, and I said, that would be great. I'm more than happy to come.

Recently, the Texas Commission on Environmental Quality released its draft plan for spending 209 million allocated to Texas as part of a nationwide settlement for Volkswagen from their widely publicized diesel emissions cheating scheme. Volkswagen Environmental Mitigation Trust is to help mitigate the effects of the excess of the NOx emissions from the affected VW vehicles, particularly in areas impacted by ground level ozone as a result of these -- these emissions. But somehow, TCEQ's Draft Mitigation Plan, none of the 169 million proposed for designated priority areas is planned for the five county Central Texas region.

Central Texas is ignored in the plan despite the fact that 12 percent of the affected cars registered in Texas were registered in this region. In fact, Travis County had the second largest number of affected vehicles of any county and by far the highest per capita number of affected vehicles. Fairness and equity requires that the Central Texas region receive a proportionate share of these funds.
While I understand and I recognize that the priorities from TCEQ is to deal the money to the non-attainment areas, I mean, I would like to at least pitch this: Those of us in Central Texas that have tried so, so hard for so many years is the only reason that we are in attainment. And I think that there needs to be some consideration, no disrespect to Bexar County and to the other counties that quite frankly have, you know, a sizable amount of these dollars, I do not think that it would be, you know, out of question to ask that you take an area that barely stays in attainment -- and, again, we do that because we try so darn hard in this community. I think that it is only right that the Commission consider some -- I mean, as I told my court yesterday, I said, certainly somebody is willing to perhaps throw us a bone and give some money out of $209,000,000. I know that Central Texas is certainly willing and understanding of the communities that have been in non-attainment for quite some time, but I don't think it would be too much to ask the Commission to consider Central Texas and what we have done.

So, Steve and Joe, I hope that you-all take that back, and I'm sure that the Chairman and the Commissioner is listening to this. But I appreciate the time and the effort that you-all put forth. I know
this -- these are tough decisions, but from the Travis County Commissioners Court we do hope that we get some consideration. And I'm prepared to leave some of the comments to the two of y'all. And, as a matter of fact, I'll leave you a couple of extras for the Commission.

MR. DAYTON: Sure.

MR. DAUGHERTY: Thank you.

MR. DAYTON: Commissioner, thank you.

And, yes, please leave any of the written comments you'd like to leave. And I would say we appreciate the participation of Austin and the Travis County in our TERP programs over the years, too. Y'all have been a -- a good partner with our program.

MR. DAUGHERTY: Thank you very much.

MR. DAYTON: All right.

Next is Michael Osborne with TxEatra.

I'll -- I'll learn how to pronounce this eventually as -- as we work with y'all.

MR. OSBORNE: Hi, everybody. I've got a little croup cough. So, if I start coughing, please pray for me.

So, I'm with TxEatra. I'm the Chairman -- Chairman of the Board of the Texas Electric Transportation Resources Alliance, and I know it's a lot of words. But I was looking for TETRA, and it was
taken. And TxETRA was available, so that's our Website, TxETRA.org.

Our basic mission statement is to guide and accelerate the adoption of electric transportation in all of its forms in the most cost effective way providing maximum benefit to all the citizens of Texas. Right at this point we're kind of a baby in diapers right now. We're just beginning to learn to crawl. We're about 100 transportation professionals and utilities execs, car and truck manufacturers, academics -- we've got a good group of those, and we're all working together to come up with a statewide charging plan, as well as deal with issues like we did with our renewable energy work that we did 25 years ago when we determined what we needed to do in order to have a statewide plan.

We have got a -- a good subcommittee put together with five or six utilities on it and two or three car manufacturers and some charging companies. We've also got some -- some academics on that from the University of Texas who are working with them. And they are meeting quite often right now trying to come up with a -- when is the next meeting, Stacey?

MS. ABEL: October 3rd.

MR. OSBORNE: Yeah, we've got a meeting on
October 3rd. So, we're working very hard to come up
with a -- you know, a fairly well thought out -- fairly
well thought out recommendations. But just our
preliminary recommendations are, you know, maybe every
50 miles having super -- supercharging stations.
There's -- on the interstates. There's 3200 miles of
interstate in the state right now, and so that would be
about 64 stations, which would actually eat up about
30 million if it did that.

We think that there needs to be some sort
of urban/suburban component there based on ownership
of -- of EVs. Location with a power line capacity is
adequate, as you were saying, to locate complementing
other charging networks like -- like Electrify America
and in locations so they are accessible and attractive
to a wide variety of consumers, such as big gasoline
retailers, restaurants, et cetera, and accessible to
all.

And then, finally, we think it's really
important that there be an equity component. Tom Smith
is one of our -- well, he's our interim executive
director right now, and in the -- in the policy world,
when I'm working on generation plans for the city and
other utilities, let me tell you, it's -- this electric
thing, we need to make sure that -- that it's available
to all because there's a lot of folks who really feel like it's just going to be a rich man's toy, and we need to make sure that there's equity.

And so one of our recommendations is that 25 percent of this -- of the settlement funds be set aside for multifamily and public facilities in low-income communities because we think that's important, because as more and more used electric cars come on -- come on the market -- which they're coming on now because we're, you know, seven or eight years now into, you know, real electric cars out there. And so the LEAFs are coming out and -- and the Prius's are coming, and there's some great old Volks, you know, that you can buy right now. And those are, actually, underpriced cars of similar age of gas driving cars, and they have the extra benefit of being much cheaper to run. So, we think it's important that there be an equity component.

Anyway, thank you so much for an opportunity to chat, and remember the name. You're going to see us some more.

MR. DAYTON: I'll -- I'll learn it here, eventually.

MR. OSBORNE: (Laughing)

MR. DAYTON: Thank you, Michael.
J.S. McDowell with Quantum IDC.

And I would ask, are you able to hear everything okay?

THE REPORTER: (Nodding)

MR. McDOWELL: Hi, I'm Mac McDowell. I am with Quantum Industrial Development Corporation, and we are working on a project with Texas A&M University, San Antonio. I know this is UT territory. Don't shoot daggers at me. I'm a Virginia Tech grad, so I'm neutral.

But we have a -- we have a drive train that we are developing, and I want y'all to think about this when I say it, that it will get 100 miles to the gallon and reduce NOx tailpipe emissions by 90 percent. I can see on some of your faces, that's not possible. How is that possible? Because we're throwing away the internal combustion engine, and we're using an external combustion engine called a sterling cycle engine. NASA has loaned us this engine. We're going to put it in a prototype vehicle or a proof of concept. Once that is completed, we will then redesign the engine so it's more compatible with smaller vehicles and provide for the world a template to mass produce these vehicles.

We are not a car company. We're an IP company, and A&M and I, and now the Army Research Lab,
are very, very interested in the results of this project. I would like to enter into the record an article that ran in the American Thinker very recently and a project summary, which I won't bore you with, but perhaps you can enter it into the record.

MR. DAYTON: Yeah, we'll add it.

MR. McDOWELL: Thank you very much.

MR. DAYTON: Thank you.

Next is Bay Scoggin with TexPIRG.

MR. SCOGGIN: Thank you, Steve. How y'all doing? Everybody doing all right? I think we're almost done, hopefully.

MR. DAYTON: Can you say the full name and your organization --

MR. SCOGGIN: Ah, that's my -- hi, I'm Bay. Nice to meet you. It's B-a-y S-c-o-g-g-i-n, and I am the State Director of the Texas Public Interest Research Group, or TexPIRG for short. So, I spoke in Arlington already, and so I'll be very brief.

I wanted to make it clear that 15 percent for ZEV infrastructure is fantastic, and from a public interest standpoint that is obviously a big win.

Once -- since Steve has given us carte blanche to talk for as long as we wanted without playing the music and getting the hook, I just wanted to tell you one quick
thing about our organization; and that is that we don't take any money from corporate sources, and so I think the only reason I want to tell you that is because when I'm up here you can actually trust what I'm having to say because I don't make any money based on anything that happens from this plan.

And I'm on the record as saying that the plan right now is concerning based on the decision criteria about where the money goes. For example, if we do use a first-come, first-serve basis and diesel engines are all the first-comes, then we will not realize any of the benefits that are possible to be realized. So, that right there is problematic.

And the second problem is that, in your second criteria for selection under a cost benefit analysis or cost effectiveness analysis, right now the typical categories that are supplied by compressed natural gas engines, like long -- long haul freight truckers are favored in that cost effectiveness analysis at about a nine to one rate. So, for example, the long haul freight truckers are considered somewhere around 10,000 cost per ton reduction; whereas, school buses, which affect our children's health and currently pollute across the nation at far greater rates than any of the others that we're looking at are considered about 97,000.
cost effectiveness for -- for cost per ton.

So, again, when we're looking at this all of a sudden from a public interest standpoint we're worried that the money is not going to go to things that actually clean up the air. Now, where the money goes, that seems like everyone can chomp at the bit for that. But from a public interest standpoint, we must include some criteria that incentivizes people to go towards electric, to go towards hydrogen, to go towards actually cleaning up the air.

And the last thing that I want to end with, since nobody in this world seems to knows what public interest means anymore, let me put it in a different perspective. And -- and I'm wondering if, for one day, I was actually Texas NDRG, and I was the National Defense Resource Group, the -- the Pentagon is very clear that their biggest strategic challenge going forward is climate change. And when you look at an area like San Antonio that has a number of large bases, they will be leading the charge in terms of air quality and in terms of fighting against climate change in the very near future.

Now, we can part of that, if and only if, we're willing to make choices that move towards cleaner air that pollute less than we're currently doing. If we
spend this money on diesel engines and compressed natural gas engines, we won't be doing that. So, I'm asking you, please, please include some sort of priority for zero-emissions vehicles and clean technology. Thank you.

MR. DAYTON: Thank you, Bay.

Next is Dale Bulla, representing yourself.

MR. BULLA: Thank you for this opportunity.

I took delivery of the -- the first Nissan LEAF in Austin, except, of course, for Lance Armstrong. He got his first for making his commercial. When I was coming out today, I've never been to this facility, but I didn't know there were so many buildings. So, I looked on my PlugShare to find out where the electric charging station was. There is no public charging station here, so maybe some of that money could be used to put some public charging stations here at the environmental agency of the state. That's my suggestion.

It seems to me that the City of Austin has spent millions of taxpayer money, millions of dollars related to our public utility to encourage people to move to electrification. We've spent lots of money on charging stations, lots on rehabbing homes, insulation,
air conditioning subsidies to try to reduce our carbon footprint. It seems to me that a city that's willing to spend that kind of money should have some consideration when this money is doled out.

I really think that there's been a blind spot for some reason for Austin, and I'm just here to say that Austin is here. We're not doing -- from what has been said already, we're not -- we're not non-attainment, but we could be very close. And I think communities that want to make good use of this money, look at the places that are already doing that, and then you get a better bang for your buck. It would be great to allocate some of the resources based on the number of vehicles.

I think you'll find that Central Texas has more electric vehicles than anybody else. So, I think that shows where the interest is. That's where the infrastructure would most benefit the people, and I think that ought to be a consideration as well. So, thank you for your time.

MR. DAYTON: Thank you very much.

Okay. Next is Martin Gutierrez with the San Antonio Chamber of Commerce.

Feel free to stand behind --

MR. GUTIERREZ: Okay.
MR. DAYTON: -- or wherever you want.

MR. GUTIERREZ: Okay. My name is Martin Gutierrez, Assistant Vice President of Public Policy at the San Antonio Chamber of Commerce, and I'm here to read a letter that we submitted to Commissioner Niermann.

As you know, on July 18, the Environmental Protection Agency designated Bexar County as a non-attainment area under the new Federal Air Quality Standards passed in 2015. This is an especially devastating blow to a low-income community like San Antonio where the designation is expected to result in an economic loss of 3.2 billion and 27.5 billion overall. What made the designation feel particularly unjust, as well, was that San Antonio has a better track record than any other major metropolitan area of voluntarily complying with the new air quality standards.

Twice before Bexar County has been in danger of running afoul of federal air quality standards. Such standards were lowered to 80 and then 75 parts per billion. Each time Bexar County brought ozone levels into compliance despite the fact, as well, is that only 20 percent of ozone emissions in Bexar County are from local sources. In fact, Bexar County
has reduced ozone levels over the last 20 years from 93 parts per billion in 2003 to 73 parts per billion in 2016.

The silver lining, however, is that Bexar County, because of its track record and because of the marginal nature of its non-attainment, has a real chance of getting out of non-attainment by 2021. The proposed allocation of 73.5 million to Bexar County to reduce the nitrogen oxides in the environment in Bexar County might just be the measure that tips the scales. A $73.5 million measure that averts 3.2 to 27.5 billion in economic losses to one of the fastest growing metropolitan areas of the state ought to be a financial and political no-brainer. We at least have not heard of a more compelling way to invest the Volkswagen funds anywhere in the state that would achieve a -- achieve a higher return on investment.

Further, in Bexar County the Volkswagen monies would complement a range of efforts that the community has undertaken to voluntarily reduce emissions. Its own municipally-owned utility, CPS Energy, now leads the state in solar generation and is one of the largest buyers of wind-generated electricity in the nation. CPS has also closed several local-coal fired power plants. VIA Metropolitan Transit has
transitioned half of its fleet to clean burning compressed natural gas.

Three of San Antonio's largest manufacturers -- Toyota, Buzzi Unicem, and Alamo Cement -- have all voluntarily sought and achieved Energy Star certifications. All of the above, taken in combination with Bexar County's neat track record of working as a community to improve its air quality, make our community the most impactful place to invest the Volkswagen funds. Additionally, we support AACOGs recommendations dated March 28, 2018 for the use of these funds. Given Bexar County's diverse and successful emissions reductions programs over the years, we support flexibility and local discretion in how such funds are allocated, as well as the ability to share funds between over- and undersubscribed programs. As technology advances, such flexibility is an important way to ensure that funding continues to grow where it can be most impactful.

MR. DAYTON: Thank you. And like I said, I think we have a copy of that letter.

Okay. Stacey Abel or Able with TxETRA. I know I -- I will keep messing up this name. Is it Abel or Able?

MS. ABEL: Abel.
MR. DAYTON: Okay. Abel.

MS. ABEL: Like Cain and Abel.

Hi, I'm Stacey Abel with the Texas
Electric Transportation Resources Alliance, also called
TxETRA.

Texas has more roads that any other state,
and as you know we also have the benefit of having our
own electricity grid. With our huge transportation
network and resources, we believe Texas can be a leader
in the same way we were in the renewable energy in the
'80s and '90s. Transportation is electrifying at high
speeds across the world. EVs are far less polluting
than conventional vehicles and are cheaper to own and
maintain. According to Bloomberg New Energy Finance the
cost of purchasing an electric vehicle is scheduled to
match, and then fall below, the price of a conventional
gasoline model by the year 2025. This is due to
tumbling battery prices.

Also of note, is that American automaker
General Motors plans to introduce 20 new electric
vehicle models by 2023. Further, Bloomberg predicts
that somewhere between 2029 and 2040 the majority of
vehicles sold in the United States will be electric. A
dozen countries have or are considering banning the sale
of gas and diesel engines, so Texas and the U.S. need to
be ready with infrastructure in place for this transportation revolution.

   Today we want to register some preliminary comments regarding the TCEQ Draft Plan for the 209 million in Texas VW Settlement Funds. We support and have specific recommendations for the $31 million set aside for EV charging infrastructure. As Texas cities continue to grow and face air quality challenges, we believe that electric transportation is a key tool to reducing ground-level ozone pollution; however, we also know that range anxiety is the number one reason that buyers resist purchasing electric vehicles.

Consequently, in our written comments -- as Michael Osborne, our chair, mentioned -- we address frequency, location, accessibility, and equity.

   Just to say another couple things about frequency, we propose having charging stations about 50, 75 miles -- every 50 to 75 miles by the year 2020. But to be clear, this means we support using the set aside money to supplement those stations already planned by the VW Electrify America Plan for charging stations across U.S. interstates. As we speak, as Michael mentioned, our TxETRA Charging Infrastructure Committee is working hard on an overlay map containing the Electrify America Plan, Texas state and rural highway
Also, we recommend the use of smart charging stations, which I don’t know if you-all know but I learned about the meaning of interconnected and interoperability, which means they can transmit and receive data to and from utilities, charging station owners, grid operators, vehicle owners, and independent apps. So, another major point that Michael mentioned is, because we believe equity should be a core value, we recommended that 25 percent of the VW Settlement Funds be set -- set aside for multifamily and public facilities in low-income communities.

And our reasons are these: Almost a quarter of Texans are poor. Low-income communities have historically been exposed to far higher levels of diesel particulates than other communities. This population should clearly not be left out of the access to the electric transportation future when their public health historically has been affected at a greater proportion than the general population. Moreover, a whopping 30.2 percent of a poor family's income goes to transportation in whatever form, contrasted to just 13 percent for an average family. EVs can lower the cost of transportation for these families.

As you know, studies show that fuel and
maintenance costs of owning an EV are one-third of that of a conventional gasoline fueled car. A recent consumer report study found that right now it's significantly cheaper to buy a used EV than a similar quality gasoline fueled car. And, in fact, according to another recent report the top five selling cars right now, used cars, are all hybrids and electric. Finally, because more than 50 percent of low-income families rent, we recommend a mix of charging facilities at homes, apartments, and street-side locations.

We have a couple of other general comments we'd like to make regarding the funding application or allocation of the plan. After reviewing the draft plan proposal and distribution map, we urge the TCEQ to reconsider the criteria for how the funds are distributed across the state. It's our understanding from reading the language in the Settlement Trust that mitigation was meant to be based on the number of illegal diesel engines registered in each region. At the time of the settlement, coupled with consideration for ground-level ozone violations, under these assumptions, it appears that areas surrounding and including Dallas and Houston would have received a greater percent of funding. As you know, Central Texas and Austin were left out entirely, even though the
region had more of the illegal diesel vehicles than any
other area of the state and is struggling to stay out of
non-attainment status while being the fastest growing
region in the state.

We support TCEQ's efforts to address Texas
air quality, especially in San Antonio, but the current
use of VW Settlement Mitigation Funds appears to be
inconsistent with the stated goals of the trust. There
are other sources of funding, such as the TERP that we
believe can be used for that purpose. The mitigation
trust, finally, also stated an intent to encourage
zero-emissions vehicles, so we're confused about why the
TEC preamble expresses a departure from this intention
by declaring the Texas plan to be fuel neutral.

We're still collecting information and
will be submitting our final formal comments before the
October 8th deadline. Thank you.

MR. DAYTON: Thank you, Stacey.

Darren Huff, representing yourself.

MR. HUFF: Thank you, and thank you for
the opportunity to -- to speak here to the TCEQ today
and to everyone present. The interest is certainly
encouraging. My name is Darren Huff. As was mentioned,
I'm speaking as myself as a resident of Austin.

I'd like to just be here on the record in
support of the Sierra Club's recommendations on how the settlement -- or, excuse me, how the Settlement Funds should be spent, including -- these recommendations from the Sierra Club include spending the maximum or all of the 15 percent of the funds exclusively on electric vehicles as well as their recommendation that we focus on trucks and buses, as well as ports, vessels and then within those infrastructure investments, increase the reimbursement rate to 80 percent. They also recommend, and I also agree with, focusing on multiple dwelling units or apartments as well as public facilities in low-income areas, which has already been mentioned a couple of times.

As I mention earlier, I'm not an expert, but I think as a citizen and somebody who is interested in these issues, I just wanted to highlight, again, as we sort of start to wrestle on who gets what share of what pie, I think it's just worth reiterating that VW's excess diesel emissions killed the equivalent of thousands of people here in the U.S. if you look at years of life. Globally, a startling statistic that I've seen is that all forms of pollution kill approximately 9 million people annually. So, that's right up there with, you know, cigarettes or it exceeds it.
So, in the '80s we decided to stop dumping our waste into the oceans and treating them like open sewers, and I believe that we need to stop treating our atmosphere as an open sewer with greenhouse gases. And this includes diesel and small particulate matter and these -- and these gases that contribute to the warming of our Climate. I'm not a scientist, but scientists say that the time to act on these issues was yesterday. And I just ask that we please do so with urgency for our children and grandchildren. Thank you.

MR. DAYTON: Thank you very much.

Next is Andrew Johnston with Navigant. Is Andrew here?

(No response)

MR. DAYTON: Okay.

UNID. SPEAKER: He was here.

UNID. SPEAKER: I think he did leave.

MR. DAYTON: Oh, okay.

Ling Zhu. Please, I apologize for butchering folk's names.

MR. ZHU: It's no problem.

MR. DAYTON: Please, go ahead and express your name to the -- the -- our court reporter.

MR. ZHU: Hello. Okay. My name is Ling Zhu. I'm originally from China, an immigrant. I'm here
representing Sierra Club because our Conservation Director, Cyrus Reed, is -- is in Houston right now.

So, he asked me to deliver his message. So, I'll just probably just read it.

Before I read it, I know you're driving an EV. Right?

MR. BULLA: (Nodding)

MR. ZHU: I'm driving a Chevy Bolt, right parked outside. It's a great vehicle, and I received a $2,500 rebate from TCEQ.

MR. BULLA: Tesla was not eligible, unfortunately.

MR. ZHU: Right. Right. They used up their quarter.

Well, anyway, this message is from Cyrus Reed, our Conservation Director of Sierra Club and Lone Star Chapter. And we support spending the maximum 15 percent on electric and hydrogen-powered vehicle infrastructure. The category that TCEQ has selected for additional funding, freight trucks, garbage trucks, school buses, transit buses, airport, and those buses reasonable, and we need to -- real pollution reductions. However, the TCEQ is only allowing five areas access to these monies and is letting what gets funded on a case-by-case basis, meaning all this money could be
spent on fossil fuel burning, like natural gas or even diesel freight trucks. So, what's the point?

And then, there are some ideas Sierra Club is advocating for -- at the state level: 25 percent of VW Settlement money, 15 percent of that total, should be set aside for multifamily and public facility in low-income community and make a specific minimum commitment to electric school buses and transit buses by setting aside at least 30 million -- $30 million for the total for all electric buses so that those most impacted by air pollution will receive a greater benefit. In addition, the TCEQ should consider raising the 60 percent reimbursement for those type of public vehicles to maximum available 80 percent.

Then, the last point is, I think a lot of people already discussed and commented on, that is equity, equity among the five metropolitan areas: Houston, Dallas, San Antonio, El Paso, and Beaumont-Port Arthur, not only make that -- we can ask you to make funds also available for additional areas like Corpus Christi, Austin, Waco, and Tyler-Longview, which also have -- have air quality issues. Thank you.

MR. DAYTON: Thank you.

Next is Deborah Stedman representing yourself.
MS. STEDMAN: Good afternoon. My name is Deborah Stedman. I'm a retired educator and -- both from the Texas Education Agency and from Texas State University. I read with great interest the Sierra Club materials on the TCEQ $210 million Volkswagen Settlement Plan for Cleaner Vehicles. Yahoo. As a stakeholder, I would like to provide you with my input to the plan. I will also submit comments in writing.

First, I really applaud the idea of providing grants to local geographic areas. I was involved in grant funding to local education agencies for innovative research-based activities for many years, and I've seen firsthand the success that can be achieved at the local level. I very much appreciate the potential use of the funds for replacing older, dirtier heavy-duty on-road vehicles.

My comments relate specifically to school districts competing for grant resources to replace school buses with electric buses which meet the highest possible emission standards. While I approve of the decision to use the 15 percent of the funds for zero-emission vehicles, I would like to propose a specific set-aside grant category for public school districts supported by significant funding amounts in order to accelerate the EV school bus market. Since
school buses routinely carry children to and from school and other activities every day, including nights and weekends, and since they are expensive vehicles, a priority grant program would provide enormous benefit.

My rationale for proposing that TCEQ set aside funds specifically for this purpose is simple. There are 1,031 public school districts and 618 charter schools, which are also public education agencies, in Texas. There are a lot of kiddos who would benefit from access to electric school buses simply because of the number of children who would have access to the vehicles on a daily basis. While I haven't done the math, but I'm betting that per capita per trip this would be a significant cost effective way to spend these funds. One school bus could easily carry 50 children per trip, as opposed to four to five adults in an electric vehicle, and school buses frequently make more than two trips per day depending on geography.

Districts in Minnesota and California are participating in pilot programs that provide all-electric, zero-emission buses that should cost much less to power and maintain. TCEQ could maximize the use of the VW funds through such usage.

The impact of electric school buses can go beyond transportation. Electric vehicles are innovative
and children are in school to learn, so such a grant program can also impact the curriculum at the elementary level, the middle school level, and certainly at the high school level. Project-based learning, which encourages students to develop their own learning projects, with guidance, typically in small groups could focus on many aspects of having one or more electric school buses in the district. Elementary and middle school students can do research, write it up, do the basic math, and present it to their classmates.

Aspiring high school students looking toward STEM careers and enrolling in college credit classes in high school can do more sophisticated research and calculations. It gives me chill bumps to think about it.

I do implore TCEQ not to inadvertently encourage the use of diesel vehicles. Clean, zero-emission electric school buses should get favorable treatment in scoring grant proposals. Budget line items should include categories for the infrastructure needed for charging and for funds needed for maintenance -- maintenance training as allowable costs. Maintenance of EV school buses is less expensive than traditional buses once the training issue has been settled.

I encourage TCEQ to prioritize school
districts in low-income or disadvantaged communities.

Children in these communities are disproportionately disadvantaged by air pollution. These grants could take a strong environmental justice approach to beginning to clean up the mess that VW and other polluting technologies have caused.

My bottom line: I'm requesting that TCEQ establish and provide a specific grant opportunity to school districts to apply for pilot programs that provide all-electric, zero-emission buses that will cost much less than diesel buses to power and maintain. Electric school buses will start out appearing to be more expensive, but in depth analysis will reveal cost savings not initially identified. Electric school buses are clearly an emerging technology. Over time, costs will be mitigating by economies of scale as electric vehicles, including electric school buses, become more mainstream. I hope TCEQ takes the opportunity to help that become a reality.

MR. DAYTON: Okay. Thank you very much.

Heather Ball with the Natural Gas Foundation.

MS. BALL: Hi, I'm Heather Ball with the Texas Natural Gas Foundation, and I realize I'm standing between you and rush hour traffic, so I'm going to be
fast.

We have -- we have strongly encouraged TCEQ to look at the higher NOx emissions from low-speed, heavy-duty diesels, particularly when we focus on the cost per ton reduced but ignore the evidence that has come out of studies from UC Riverside and University of West Virginia. I think we're missing an important benchmark of success. According to recent tests published by the California Air Resources Board and the University of California Resource -- or Riverside in-use NOx emissions from heavy-duty diesel trucks were 1.7 to 9 times higher than their NOx certification standard. As the UC Riverside and car reports found, these high end-use NOx emissions occurred primarily during low-speed operations. This would be like school buses. This would be like garbage trucks, a lot of the types of vehicles that we are focused on trying to mitigate with the VW Settlement Funds. So, for example, if the cost per ton for replacing an older diesel bus with a new diesel truck is -- the way it's -- it's calculated now by TCEQ is $9,300 per ton under the TERP guidelines or under theirs, then in actual use for these low-speed and idling applications the cost for NOx reduction is up to $83,700 a ton.

So, it seems to me, reiterating what some
of the other speakers have said, that having a set aside
for these low-speed and idle operations and putting the
ultra-low NOx and zero-emission vehicles, giving them a
set aside category would like a lot of sense.

And I know, Joe, I've -- I've heard you
say that you have heard that there are recent studies
that say the newer heavy-duty vehicles don't have that,
but until they've been subjected to the same kind of
rigorous third-party analysis, I -- I think that needs
to be taken with a grain of salt. And the best way to
do that is, at least initially, until they can produce
those same end-use studies that UC Riverside and Air
Resources Board have done, that you provide a set aside
for these -- these applications, like school buses, like
garbage trucks that -- the things that you never see
burning rubber up and down the roads, I mean, they are
low speed and that are idle. Thank you very much.

MR. DAYTON: Heather, thank you very much.

Russ Keene with Plug-In Texas.

MR. KEENE: Thank you, Steve. I'm used to
facing the -- the court reporter and the Chair. I -- I
know you're -- really you're the audience, but I'm glad
to see there's this much interest. I'm Russ Keene with
Plug-In Texas, Electric Vehicle Coalition here in
Austin. We're after ten-year old organization composed
of electric utilities, electric generators, electric retailers, automobile makers, automobile dealers, and environmental groups. And we've been advocating for electric vehicles and other alternative fuels for a number of years here with public policy decision makers. We want to compliment, first of all, and thank Governor Abbott for entering into this settlement with the other states and thank him for detailing this -- directing TCEQ to be the lead agency. It's always great to work with them. We appreciate Chairman Niermann's hard work on this and taking a real personal interest in taking comments around the state. This meeting today wasn't required by the Trust and the Settlement, and it's good to see the -- the wide opportunity for other Texans to comment.

I've left a letter for the record with the clerk out front. We -- it highlights we find the Draft Plan to be thoughtful and visionary. We are most appreciative of the 15 percent maximum opt-in on the light-duty electric vehicle charging. It's our understanding that none of the previous public hearings there's been any opposition to that. We -- we thank you and appreciate the wisdom and are glad that that's in there and hope it will remain at the full 15 percent.

We find the other program elements, the
eligible vehicles, the processes, the timelines, the reimbursement allowances is fitting, and -- and we're most agreeable to those. Regarding the other -- the remaining 85 percent, you've heard today we -- we have heard from Austin and Corpus and some other regions that -- that they are expressing views that those settlement dollars be broadened, and we just would encourage the agency to be thoughtful and consider those other requests. And finally, we -- we're in full concurrence with the four goals that you identified.

Thank you for the opportunity to comment, and thank you for all your hard work, Steve and Joe.

MR. DAYTON: Russ, thank you.

Is there anybody else that would like to put comments into the record before we close the transcript?

(No response)

MR. DAYTON: Okay. Well, then we can stop recording.

(Comments concluded: 3:36 p.m.)
CERTIFICATE

STATE OF TEXAS  
COUNTY OF TRAVIS  

I, Janis Simon, Certified Shorthand Reporter in and for the State of Texas, do hereby certify that the above-mentioned matter occurred as hereinbefore set out.

I FURTHER CERTIFY THAT the proceedings of such were reported by me or under my supervision, later reduced to typewritten form under my supervision and control, and that the foregoing pages are a full, true, and correct transcription of the original notes.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 3rd day of October, 2018.

Janis Simon  
Certified Shorthand Reporter  
CSR No. 7076 - Expires 12/31/19  
Job No. 18250  
Firm Registration No. 276  
Kennedy Reporting Service, Inc.  
7800 North Mopac, Suite 120  
Austin, Texas 78759  
512.474.2233
September 25, 2018

The Honorable Jon Niermann
Chair, Texas Commission on Environmental Quality
P.O. Box 13087, MC-204
Austin, TX 78711

Re: Comments – Draft Beneficiary Mitigation Plan for Texas, Volkswagen
Environmental Mitigation Trust Agreement

Dear Chairman Niermann,

Plug-in Texas offers its thanks to Governor Greg Abbott for entering into the
Volkswagen Settlement and the coalition offers its compliments to you, Commission
colleagues and TCEQ staff for a very consequential Draft Mitigation Plan.

While the coalition finds the Draft Plan to be thoughtful and visionary, Plug-in Texas
is particularly supportive of the maximum allowable 15 percent light duty electric
vehicle (EV) charging infrastructure and equipment element that the Draft Plan
contains. Plug-in Texas believes that with the increasingly robust future EV market
penetration forecasts, the State of Texas opt-in to use these grant dollars for
charging infrastructure will effectively complement large body vehicle grants and
meet what is anticipated to be a high-demand future charging infrastructure
environment as light duty EVs proliferate and greater public charging access and
broadened statewide highway charging access is required.

Regarding the larger 85 percent of Settlement funding as proposed in the Draft
Plan, we do appreciate that there are forthcoming requests from some regions with
unique air-quality challenges suggesting reapportionment of the allocation formula
and respectfully encourage TCEQ to consider broadest application of these grant
dollars for greatest statewide impact.

Plug-in Texas fully agrees with the Draft Plan’s four main goals of 1) reducing NOx,
2) reducing other harmful pollutants, 3) preparing for future increased and
sustained use of light duty EVs with charging equipment grants, and 4) that indeed
the Settlement complements the well regarded and effective TERP programs while
promoting some new program areas that are under-represented in TERP.
Plug-in Texas finds the eligible mitigation programs, eligible vehicles, processes, timelines and reimbursement allowances as fitting and agreeable.

As always, the members of Plug-in Texas appreciate your leadership and public service and stand ready as a resource to TCEQ on electric drive and other alternative transportation fuels and infrastructure policy in the days ahead.

For Plug-in Texas,

Respectfully,

Russell T. Keene

CC: The Honorable Greg Abbott
The Honorable Emily Lindley
My name is Deborah Stedman; I am a retired educator both from the Texas Education Agency and Texas State University. I read with great interest the Sierra Club materials on the TCEQ $210 million Volkswagen Settlement Draft Plan for Cleaner Vehicles. As a stakeholder, I would like to provide you with my input to the plan. I will also submit comments in writing.

First, I applaud providing grants to local geographic areas in Texas. I was involved in grant funding to local education agencies for innovative, research based activities for many years and have seen first hand the success that can be achieved at the local level. I very much appreciate the potential use of the funds for replacing older, dirtier heavy-duty on road vehicles.

My comments relate specifically to school districts competing for grant resources to replace school buses with electric buses which meet the highest possible emission standards. While I approve of the decision to use 15% of the funds for zero emission vehicles, I would like to propose a **specific set-aside grant category for public school districts supported by significant funding amounts** in order to accelerate the **EV school bus market**. Since school buses routinely carry children to and from school and other activities every day, including nights and weekends, and since they are expensive vehicles, a priority grant program would provide enormous benefit.

My rationale for proposing that TCEQ set aside funds **specifically** for this purpose is simple. There are **1031** public school districts and **618** charter schools, which are also public education agencies, in Texas. There are a lot of kiddoes who would benefit from access to electric school buses simply because of the numbers of children who would access the vehicles on a daily basis. While I haven’t done the math, but I’m betting that per capita per trip, this would be **a significant cost effective** way to spend these funds. One
school bus can easily carry 50 children per trip as opposed to 4-5 adults in an electric vehicle and school buses frequently make more than two trips per day depending on geography. Districts in Minnesota and California are participating in pilot programs that provide all-electric, zero-emissions buses that should cost much less to power and maintain. TCEQ could maximize the use of the VW funds through such usage.

The impact of electric school buses can go beyond transportation. Electric vehicles are innovative and children are in school to learn, so such a grant program can also impact the curriculum at the elementary level, the middle school level and certainly at the high school level. Project based learning, which encourages students to develop their own learning projects (with guidance) typically in small groups could focus on many aspects of having one or more electric school buses in a district. Elementary and middle school students can do research, write it up, do the basic math and present it to their classmates. Aspiring high school students looking toward STEM careers and enrolling in college credit classes in high school can do more sophisticated research and calculations. Gives me chill bumps to think of it.

I do implore you to **not inadvertently encourage the use of diesel vehicles.** Clean, zero emission electric school buses should get favorable treatment in scoring the grant proposals. Budget line items should include categories for the infrastructure needed for charging and for funds needed for maintenance training as allowable costs. Maintenance of EV school buses is less expensive than traditional buses once the training issue is settled.

I encourage TCEQ to prioritize school districts in low income or disadvantaged communities. Children in these communities are disproportionately disadvantaged by air pollution; these grants could take a strong environmental justice approach to beginning to clean up the mess that VW and other polluting technologies have caused.
My Bottom Line: I am requesting that the Texas Commission on Environmental Quality establish and provide a specific grant opportunity to school districts to apply for pilot programs that provide all-electric, zero-emissions buses that will cost much less than diesel buses to power and maintain. Electric school buses will start out appearing to be more expensive, but in depth analyses will reveal cost savings not initially identified. Electric school buses are clearly an emerging technology. Over time, costs will be mitigated by economies of scale as electric vehicles, including electric school buses, become more mainstream. I hope TCEQ takes the opportunity to help that become reality.
Hybrid Electric Advanced Technology Project  

(HEAT Project)

Abstract
Quantum Industrial Development Corporation in, collaboration with Texas A&M University – San Antonio, is conducting an investigation into the development of a series hybrid electric vehicle design based upon the Stirling Cycle engine. The external combustion Stirling engine results in a significant reduction in Nitrous Oxide compounds (NOx) because the combustion takes place at atmospheric pressure. In a plug-in series hybrid electric configuration the design overcomes the problems encountered by previous Stirling automotive projects.

Objectives:
The principle objective of this project is to develop a prototype highway capable plugin hybrid electric vehicle (P-HEV) with better fuel economy and less atmospheric pollution than current production line internal combustion engines (IC engine) or production line P-HEV. The first phase of this project will address the fact that production line IC engine vehicles have a combined city and highway fuel efficiency of 20% Carnot efficient (Ce). By reconfiguring the powertrain of a production line vehicle with a patented design of a Stirling-Electric Hybrid Automobile configuration, the efficiency is expected to jump to 37% Ce. Studies done by Lund University and NASA the 1960s and 1980s concluded that automobiles with direct drive Stirling Cycle engines achieve an overall 37% Ce under combined city and highway conditions. However, drivability issues indicated that a direct drive automobile with a Stirling Cycle engine would not be competitive in the marketplace.

The drivability issues can be easily solved by reconfiguring the drivetrain into a series hybrid design with a Stirling Cycle engine coupled to a generator. This design is a basically an electric car with a Stirling Cycle engine as a range extender, overcoming the drivability issues encountered in earlier projects. New firmware will be developed to optimize fuel consumption by allowing the vehicle to be operated in a zero emissions mode by running solely on stored electrical power for short periods of duration. This firmware will replace existing production line computer area networks (CAN) currently employed in production line vehicles.

The second phase of the project will modify the original design of the Stirling Cycle engine used in the previous NASA project, to improve the weight to horsepower ratio, reduce parasitic heat losses, improve heat transfer rates, reduce friction and compress the overall geometry for application in current production line automobiles. These improvements will decrease NOx and particulate tail pipe emissions below current emission standards as well as reducing the carbon footprint. The Stirling engine, which is an external combustion engine can run on a variety of fuels including E-85 and bio fuels.

Scope of Work
The focus of the project in phase one will be to reconfigure the powertrain of an existing large frame production line vehicle into a Stirling Hybrid Vehicle (SHV™) powertrain.
This patented technique will derive electrical energy from a Stirling Cycle engine coupled with a generator to provide electrical power to drive an electric motor(s) for motive power to the wheels of the vehicle. This configuration will first be bench tested in order to ensure optimal firmware development for vehicle control. Once bench testing is completed the SHV™ powertrain’s will be configured into the vehicle for road testing and market debut.

Phase one will include tail pipe emissions testing before the retrofit and after the Stirling Cycle drivetrain is installed. The testing will be completed on a static dynamometer under the EPA’s standard driving cycle using E-85.

Phase two of the project will design and fabricate an upgrade to the original NASA MOD II Stirling engine design, and incorporate new materials which were not available during the original NASA Automotive Stirling Engine Project.

Cost of Phase 1 ........ $750,000

Cost of Phase 2 ........ $3,500,000

Total Project Cost ...... $4,250,000

###
The cure for air pollution?

By Dexter Wright

Eighty-seven days of continuous poor air quality in Los Angeles County and the surrounding area are now over. This is the longest stretch of uninterrupted heavy smog for the L.A. area in twenty years. As with all things environmental, the media will blame Donald J. Trump. However, the reality is quite different.

Smog is formed from a combination of tailpipe emissions of nitric oxides (NOx), sunlight, and volatile organic compounds (VOCs). The VOCs can be the result of a variety of natural and man-made sources such as pine trees, brewing beer, and gasoline vapors. NOx is generated from burning gasoline or diesel fuel under compression in an internal combustion engine. The VOCs react with sunlight and NOx to create ozone (O3). Ground-level ozone is the brown haze that we call smog.

The catalytic converters on automobiles today work to reduce NOx emissions but not eliminate them entirely. The catalytic converter works only when the heat of the exhaust gases has reached a threshold temperature, so for the first ten minutes of run time on a car, the emissions of NOx are unabated. Additionally, over time, the catalytic converters get contaminated and degrade in effectiveness at reducing NOx emissions.

Virtually every major city in the world is plagued with poor air quality. The health effects are estimated by the World Health Organization to cause one in eight deaths globally from illness exacerbated by poor air quality.

So what is the solution to air pollution? More government regulation or market forces?

Some would say that the electric car is the answer because it has no tailpipe emission. This is true if the car is charged on an electrical grid powered by hydroelectric dams or nuclear power plants. But over 60% of all the electricity produced in the U.S. is from power plants that burn fossil fuels. In most of the country, the tailpipe emissions from an electric car are simply moved to the smokestack. The cost of all these electric cars at this point time is out of reach of most of the driving public, and government subsidies are not a viable solution for any long-term market penetration.

The solution could be from an “orphaned” technology. An engine type known as a Stirling Cycle engine shows promise to drastically reduce tailpipe emissions and improve fuel efficiency. In the 1980s, NASA was tasked by the Department of Energy to develop a more fuel-efficient alternative to the internal combustion engine. The focus of this project was the Stirling cycle engine. The scientists and engineers developed two types of twin Alpha-type Stirling engines for automotive application, the MOD I and the MOD II. Both of these engine designs performed better than predicted by computer models. The tailpipe emissions were reduced by 90%, and fuel efficiency doubled. Emissions were so low that there was no need for a catalytic converter.

Unlike the internal combustion engine, the Stirling engine is an external combustion engine. Specifically, the combustion takes place outside the engine in a combustion chamber not all that different from a steam boiler in a steam turbine. Because of the combustion is at atmospheric pressure, the formation of NOx is dramatically reduced.

The NASA project ran into two problems: that the technology of the 1980s could not resolve in a cost-effective method. The first problem was that the engine took five to seven minutes to warm up to operating temperatures. The second problem was that acceleration was sluggish with respect to production line vehicles already in the marketplace.

Fast-forward to the present day, and a new project, conducted by Texas A&M University, San Antonio, and a company called Quantum Industrial Development Corporation has solved the problems that NASA encountered. The problems are solved by employing the Stirling engine in a series hybrid configuration drivetrain. A series hybrid design is basically an electric car with a range extender. This patented design is called SHVTM Technology. While the engine warms up, the driver runs the vehicle off the batteries and ultra-capacitors. Once the engine is started, it turns a generator to provide electrical power to the batteries, wheel motors, and other vehicle components. This all takes place without the driver noticing.

The project is still in the proof of concept stage while a mass production template is developed. The estimated mass-produced cost of this type of vehicle is on par with other hybrids in the marketplace today. Market forces suggest that sometime in the middle of the next decade this type of vehicle drivetrain will be more common than the all-electric car, and smog-plagued cities like Los Angeles will begin to mitigate their air pollution problems...all without government regulation.
Travis County Commissioners Court
Comments on the
Volkswagen Environmental Mitigation Trust
Draft Beneficiary Mitigation Plan for Texas

Commissioner Gerald Daugherty
September 26, 2018

1. **Travis County supports administration of Mitigation Plan funds by TCEQ as described in the Draft Plan. This is reasonable and appropriate.**

   However the description of the administrative procedures raises questions. We suggest that the Final Beneficiary Mitigation Plan provide greater detail regarding:
   a. Clarification of procedures for competitive evaluation of projects.
   b. Clarification of when funds will be awarded on a competitive basis vs. a first-come first-served basis.
   c. Conditions on replacement of vehicles. Too often we find that special conditions make our participation in vehicle replacement programs unworkable.
   d. Contingencies for periodic revaluation of the plan - especially after the first 2 years of implementation.

2. **Travis County supports the 15% earmark for statewide implementation of light-duty electrical charging infrastructure.**

3. **The Designated Priority Areas should include the Austin Round Rock region.**

   The Draft Plan is not fair and equitable with respect to allocation of funds among regions and communities in proportion to the number of affected vehicles sold or registered or in proportion to the effect of emissions on populations.
   a. 12.5% of all affected cars registered in Texas were registered in the Austin Round Rock region.
   b. The region stands on the brink of non-attainment largely because of mobile NOx sources.
   c. 67% of ozone-forming emissions in our region come from mobile sources including on-road and off-road vehicles and equipment.

   We note that the Beaumont-Port Arthur region does not appear to be an appropriate Designated Priority Area because
   1. it has so few (<1%) of the affected vehicles, and
   2. is currently in attainment for ozone and has been in recent years.
4. Allocation of funds among the regions should be based on objective data and the equitability principles inherent in framework of the program --- not politics.
   a. Prioritizing investment of mitigation funds in nonattainment regions with a large number of affected vehicles is a reasonable approach to maximize the effect of the mitigation measures.
   b. However, the Draft Plan is not equitable with respect to allocation of funds among regions and communities in proportion to the number of affected vehicles sold or registered or in proportion to the effect of emissions on populations. There is no explanation or justification in the plan for the disproportionate allocation of funds among regions.

A better approach is to allocate the funds earmarked for priority areas in proportion to the number of vehicles sold or registered in these areas. For example:

<table>
<thead>
<tr>
<th>Region</th>
<th>O_3 Attainment v. Nonattainment</th>
<th>Statewide Share of Affected Vehicles %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dallas-Fort Worth (11-county region)</td>
<td>N</td>
<td>25%</td>
</tr>
<tr>
<td>Houston-Galveston-Brazoria (8-county region)</td>
<td>N</td>
<td>23%</td>
</tr>
<tr>
<td>San Antonio (4-county region)</td>
<td>N</td>
<td>9%</td>
</tr>
<tr>
<td>El Paso (El Paso County)</td>
<td>N^1</td>
<td>2%</td>
</tr>
<tr>
<td>Austin Round Rock</td>
<td>A</td>
<td>12%</td>
</tr>
<tr>
<td>Balance of State</td>
<td>A^2</td>
<td>10%</td>
</tr>
</tbody>
</table>

^1 El Paso is currently “unclassifiable” but the data clearly indicate it will likely be considered nonattainment.
^2 Beaumont Port Arthur is placed with the Balance of the State because it is in attainment, well under the NAAQS, and has less than 1% of affected vehicles.

This approach provides a more equitable distribution of funds consistent with the intent of the Environmental Mitigation Trust to provide for:
1. Environmental mitigation projects that reduce NOx emissions where affected VW vehicles were, are or will be operated, and
2. Mitigation projects in areas that are disproportionately affected by air pollution, especially from the affected vehicles.

This approach
- Does not entirely leave out the Austin Round Rock region where a disproportionately large number of affected vehicles were sold or registered AND
- It does not leave out the entire rest of the state where approximately 10% of all affected vehicles were purchased or registered.

The Draft Plan does not provide a rational explanation for a significantly disproportionate allocation of funds to San Antonio, nor does it explain how such an
allocation is consistent with the stated purpose of the Environmental Mitigation Plan. The San Antonio region is much more affected by industrial and utility point sources than mobile sources of NOX. If the Final Plan takes this approach, there should be much greater explanation and justification for a disproportionate allocation.

5. **Keep the reimbursement rate for vehicle replacement for governmental entities at 100% as provided for in the national Environmental Mitigation Plan (or at no less than 80%).**

The Draft Plan proposal for a 60% reimbursement cap for governmental entities should be reconsidered. Staff appreciates the principle expressed by TCEQ that participants in the program should have some real investment to demonstrate their commitment to the program. But it does not appear to be an appropriate criterion in this instance. While governmental entities have a public duty to protect the environment, including air quality through their fleet management, they also have a fiduciary responsibility to protect and maximize the value of taxpayer investments. Local governmental agencies will be very hard-pressed to sacrifice the residual value of vehicles that are scrapped and replaced under this program. The 100% reimbursement rate provided for in the national mitigation plan is appropriate for governmental entities. The vehicles will remain in the region unlike vehicles for private entities which may move elsewhere. A 100% reimbursement rate will greatly aid government agencies in making the move to replace vehicles and will have a correspondingly large effect on the success of the program.

6. **Maximize the effectiveness of the Mitigation Plan by augmenting it with unused Texas Emissions Reduction Plan (TERP) funds.**

One of the goals stated in the Draft Plan is to “Complement Other Incentive Funding Programs.” The Draft Plan asserts that, “...it is important that the VW funding be used to complement the efforts of the TERP program.”

If TCEQ wishes to make a concerted effort to correct recent or imminent nonattainment issues, the State has in excess of $1.7 billion in unused TERP funds that may be used for similar or complementary efforts. Texas’ Beneficiary Mitigation Plan would be greatly augmented by an explicit commitment to using these TERP funds in high priority areas in a manner consistent with the intent of both the VW mitigation funds and TERP.

7. **The Draft Plan should explicitly give preference to electric vehicles.**

The Draft Plan does not explicitly demonstrate a preference for electric vehicles over other fuel sources for vehicle replacement. (Of course, the 15% earmark for electric vehicle charging does represent an explicit commitment to electric vehicles.) The preference for electric vehicles as replacement vehicles should be explicit in the plan providing for exceptions where electric vehicles are not available or suitable for a specific purpose.