
From: Sara Enochs
Sent: Wednesday, August 29, 2018 11:18 AM
To: VWSettle
Subject: VW Comments
Attachments: Metrol -5.pdf; THE SOLUTION.pdf

Comments to TCEQ regarding the proposed beneficiary mitigation plan for Texas and the Volkswagen Environmental Mitigation Trust:

I know that Paragraph 5.1 of the [State Trust Agreement](#) states that the Trustee of the Environmental Mitigation Trust **may only disburse funds for Eligible Mitigation Actions, and for the Eligible Mitigation Action Administrative Expenditures specified in Appendix D-2.** Please refer to Appendix D-2 of the State Trust Agreement for more information on Eligible Mitigation Actions and Eligible Mitigation Action Administrative Expenditures. According to Appendix D-2 of the State Trust Agreement, the only eligible infrastructure costs under the Environmental Mitigation Trust include the cost of infrastructure associated with eligible **All-Electric engines**, vehicles, or equipment and the cost of acquisition, installation, operation and maintenance of new Light Duty Zero Emission Vehicle Supply Equipment (Level 1, Level 2, and fast charging electric vehicle infrastructure and hydrogen dispensing equipment).

Volkswagen has gone electric.

Here is an important question for Texas to ponder. Is going electric good for Texas? What about for the existing oil and gas industry or the car manufacturers who have invested heavily into the internal combustion engine?

What we propose with Metrol and the smart plug technology, even though it's a minus-zero emission solution, is not an Eligible Mitigation Action. I understand that the State Trust Agreement was approved by the United States District Court and was executed by the Settling Defendants and the Court-approved Trustee, Wilmington Trust, N.A.; the State of Texas did not create or determine the list of Eligible Mitigation Actions and Eligible Mitigation Action Administrative Expenditures set forth in Appendix D-2 to the State Trust Agreement.

Got it.

Since this is the place to leave a comment, I would like to paint another picture for Texas, and maybe, we can figure out something outside of the VW Settlement, because this endeavor to remove NOx from the air is super critical. When I contacted the Governor of each state, I was somehow hoping to convince the states to change the formula of gasoline to what we call Metrol, net-liquid hydrogen and begin converting internal combustion engines with the smart plugs technology with the VW Settlement money, which we could have done if all of the states worked in unison. We could have rolled out Metrol to all 50 states.

Do you remember the switch from leaded fuel to unleaded? This can be as simple as making the switch again from carbon to noncarbon, Coke vs. Sprite. We are just taking the brown stuff out! And, then we are going to sell the brown stuff, carbon, and make products that the world sorely needs.

Why is this important? Every year 4.1 million people die worldwide from complications from air pollution, and that staggering number continues to climb. Extreme weather, made worse by climate change, along with the health impacts of burning fossil fuels, has cost the U.S. economy at least \$240 billion a year over the past ten years. **The internal combustion engine must be addressed.**

With the help of VW Settlement money, California will convert 2,245 units and reduce 10,150 tons of carbon over the next 10 years for \$423 million. Texas will be given \$209 million and will convert 3,212 units and remove 5,954 tons of carbon. **It's not too late for Texas to become the powerhouse of NOx reduction!**

We must do more! Last year we pumped 38.2 billion tons of carbon into the air. That's 2.4 million pounds of carbon per second, and that doesn't even include wildfires or permafrost or the methane gas seeping up from the oceans.

If we have a solution, I think I'm obligated to speak up. And, I was really hoping to convert the US with a new zero-emissions fuel, produced here in the US with our existing companies, with the VW Settlement funds so that the oil and auto industry can still function as business as usual.

It still can be done.

With the \$209 million dollars that Texas was appointed, minus the 4% administration fee, \$110 mm could go to Port Arthur to convert a refinery to make Metrol. From 5,000,000 MBTUs of Natural Gas, (I think Texas is long on Natural Gas) 30mm gallons of net-liquid hydrogen will be produced, and here is the important part, and 185,000,000 lbs of carbon. If the net-liquid hydrogen is sold at \$2.00 and the carbon is sold at \$6.00, because this is high quality carbon fiber we'll be making, the total revenue would be \$1,160,960,000.00 per year.

Metrol is the bridge for oil companies to continue to produce record profits and begin to reduce NOx, by selling the carbon, which is stronger than steel and lighter than aluminum, instead of releasing it into the atmosphere. And, if Texas is really serious about reducing NOx, we can use the carbon to make energy conversion equipment such as solar, wind, moving water, and geothermal energy to make hundreds of times more electricity. Or we can make durable goods such as cars, airplanes, and pipes. We can make so many great products from carbon!

That leaves about \$70 million to create a facility to manufacture the smart plugs. The smart plug facility could be located in Texas. The smart plugs technology turns the internal combustion engine into a vacuum cleaner to remove the excess carbon from the air. The more we power our lives with Metrol, or call the zero emissions fuel whatever you want to call it, the more we'll clean the air. Imagine if cars could actually clean the air as they drive! How good would that be? Amazing.

Texas has many refineries that could be converted to make Metrol out of natural gas. This new fuel can be transported by existing pipelines to be used just like regular gasoline, and we could ship those smart plugs around the world. There are 1.2 billion internal combustion engines that need to be converted. And, here is the most important point, there is no way to reduce NOx in the amount of time that we need to without converting the already existing internal combustion engine.

Here is a short video on Metrol that explains more of the benefits of converting internal combustion engines.

<https://youtu.be/4dmGxIXOrxo>

By the way, Metrol, net-liquid hydrogen fuel, also works on hydrogen fuel cells. Metrol would also provide clean electricity for electric vehicles. There's nothing wrong with going electric. Let the other states develop technology for electric vehicles, and let Texas tackle the internal combustion engine and be the leader of all things dealing with liquid fuels.

There are so many internal combustion engines! Just go to H.E.B and look at the two electric charging stations versus the rest of the cars in the parking lot. We need to be converting the vast majority of already existing vehicles with internal combustion engines. Or check out this link to see how many electric cars there are compared to the internal combustion engine:

<https://hedgescompany.com/automotive-market-research-statistics/auto-mailing-lists-and-marketing/>

What I'm proposing takes guts. I'm asking Texas to take another approach and tackle the internal combustion engine.

Because buying new vehicles and scraping the old vehicles is wasteful and is not a viable solution for reducing NOx. That's only creating a bigger carbon footprint. The bottom line is that scraping is not the solution. Please consider retrofitting.

I understand that the TCEQ didn't make the mitigation rules and will only comply with the terms for specifically defined mitigation regardless of how little mitigation is achieved -- and that the TCEQ doesn't want interchangeable use of gasoline and ethanol or mixtures of gasoline and ethanol. We would like the opportunity to explain that net-hydrogen Metrol is the same as pure hydrogen.

I'm going to send this letter to Governor Greg Abbott, and hope that somehow this technology will be adopted sooner than later. It's that important and I believe it's a better answer for Texas along with the US, and the petroleum and auto industry.

Long live the internal combustion engine,
Sara Enochs
602-920-7914

If Texas does decide to go electric, here is another idea to help with the future demand of electricity, and another reason why not to scrap engines.

"After such improved service, engines from transportation applications are recycled and repurposed for distributed production of electricity, useful heat, and fuel. These combined heat and power (CHP) applications can double the energy utilization efficiency compared to conventional central power plants and overcome inherent waste of carbon by combustion of fossil fuels. Twenty million recycled engines that are converted to net hydrogen operation will power electricity generators (25KW average capacity of generators that range from 5KW to 1MW) to meet U.S. electricity demand for 4,200,000,000 Megawatt hours per year. This can double the energy utilization efficiency including production of 30KW of high grade heat for space and water heating along with numerous agricultural industrial process applications.

Twenty million recycled engines represent less than 8% of the registered engine- powered vehicles operating in the U.S. Thus , engines selected at the rate of 1 or 2% of U.S. fleet per year can double the U.S. energy utilization efficiency in less than 10 years and do so with far greater national energy security including relief from growing threats of damages due to global greenhouse gas accumulations."

Roy McAlister
www.Metrol-hydrogen-fuel.com

Here's the Dallas Morning News article about how much natural gas is flared per year in Texas and North Dakota: Read on DallasNews.com: <https://www.dallasnews.com/business/economic-snapshot/2018/08/27/burn-baby-burn-natural-gas>

Please click on the above news article. If I'm reading the graph right, Texas or maybe it was North Dakota flared 450 billion cubic feet of natural gas last year. Just think how much Metrol could have been made. If I'm not reading the graph correctly, it seems to me, at least 200 billion cubic feet a year is flared in Texas. 1,000 cubic feet = 1,000,000 BTU's or 50 lbs of natural gas or 6 gallons of Metrol or 13lbs of hydrogen and 37 lbs of carbon. One gallon of Metrol or 2 lbs of hydrogen can be sold for \$2. The carbon can be sold for \$6 per pound.

So how much money did the oil and gas industry lose last year to flaring? How much did the state lose in tax revenue due to flaring? How much CO2 was released into the atmosphere?

My question to Texas is going electric good for Texas when we have this much natural gas going to flaring? I was really hoping to use the VW money to convert one refinery to make Metrol and prove it's profitability. Then

we can shore up the flaring by converting more refineries. I believe that's why Roy McAlister invented Metrol in the first place, to end flaring.

Texas can lead the way! Texas fine universities including the University of Texas has the capability to run all of the tests on production and utilization of net-hydrogen Metrol liquid fuel and Smart Plug engine conversions to prove again what I'm saying is true.

Please check my math and, remember, there'll be operational costs, but if we use the 200 billion cubic feet scenario of natural gas being flared to produce crude oil, I come up with \$2.4 billion in Metrol revenue and \$44.4 billion in carbon revenue. Isn't that worth asking Ryan Sitton, the Texas Railroad Commissioner, to investigate? For that kind of money, couldn't we make the pipes from the carbon we'll be making to stop the bottleneck they spoke of in the Dallas Morning News?

It starts with one refinery, in Port Arthur, and it could be paid for with VW money. I'm an easy going gal, and open to suggestions. If you have a better idea, please let me know!



The Hydrogen Association's world symbol depicts the classical hydrogen proton with an endlessly orbiting electron as the energy carrier for cleanly and healthfully achieving sustainable prosperity in every community on Earth.

For Immediate Release

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June 11, 2018

Metrol® - The Fuel for drivers to Deliver Clean Air.

Metrol® is a new liquid fuel that can be distributed like gasoline and used by hydrogen fuel cells and existing internal combustion engines to overcome air pollution. A clean fuel, Metrol® can prevent the formation of harmful combustion by-products including CO, CO₂, HC, SOx and NOx.

Methane (CH₄), will be the principal source of hydrogen molecules used to make Metrol®, thus creating a new market for natural gas and renewable methane from forest slash, garbage, sewage, and farm wastes. Metrol liquid fuel provides convenient storage and delivery of solar, wind, moving water and geothermal energy.

The process of manufacturing Metrol® also provides collection of carbon which will be used to produce uniquely low-cost carbon fiber, graphene, nanotubes and other high value carbon products. Carbon-fiber reinforced equipment can be stronger than steel yet lighter than aluminum.

Roy McAlister the inventor of Metrol® also developed a device that combines an ion-launching spark plug with a fuel injector called the SmartPlug® that allows Metrol® to be used in gasoline or diesel engines. McAlister's system enables even highly-polluting diesel engines to run pollution free on Metrol® fuel.

Mechanics nationwide will install the new patented SmartPlug® fuel injectors, which allow Metrol® hydrogen injection and ignition near and after Top Dead Center instead of before TDC as required for gasoline and diesel fuels. This increases the efficiency and extends the life of converted engines, further enhancing the benefits of Metrol®.

Existing gasoline stations will distribute Metrol® liquid fuel for filling vehicle fuel tanks just like they are doing now. No changes of equipment or metering pumps are needed.

Metrol® is the pollution-free fuel that extends the use of internal combustion engines for the foreseeable future. An amazing benefit is that vehicles running on Metrol® / SmartPlug® systems can actually clean smog out of the air in polluted cities.

Converted vehicles will be able to run on either traditional gasoline or Metrol®. Car drivers can use Metrol® hydrogen fuel to ***Deliver Clean Air.***

THE SOLUTION to local pollution and global warming

THE WASTED CARBON PROBLEM: Local pollution and global warming caused by too much carbon in the air including CO₂, CH₄, halogenated hydrocarbons, diesel soot and other particles along with NO_x can be solved by profit-motivated business developments in communities throughout the world.

THE DURABLE CARBON SOLUTION: Durable carbon-reinforced products can include equipment to convert solar, wind, moving water or geothermal energy into hundreds of times more electricity and hydrogen every year compared to burning such carbon one time. Such carbon can be produced by converting photosynthesized substances that rot or burn such as renewable or fossil methane into durable carbon products and hydrogen.

DURABLE CARBON ENVIRONMENTAL IMPACT: Each ton of durable carbon prevents 3.6 tons of carbon dioxide production. Each ton of carbon-reinforced renewable energy conversion equipment can sustainably prevent thousands of tons of carbon dioxide production.

THE HYDROGEN SOLUTION: Hydrogen that is coproduced with durable carbon provides pollution free fuel cell operation and 1.2 billion existing engines in transportation, electricity generation, farming, and mining applications can utilize hydrogen to clean the air during operation. For user convenience and transportation efficiency such hydrogen can be combined with nitrogen and carbon dioxide from concentrated sources such as power plants, breweries, bakeries, oil or ethanol refineries, and mineral calciners along with wastewater, agricultural and solid municipal waste disposal operations (or the ambient air) to produce net-hydrogen liquid fuel called "Metrol" that can replace fuel oil, gasoline, diesel, and jet fuel. In use the nitrogen and carbon dioxide can be endlessly recycled to efficiently deliver such hydrogen as a net hydrogen liquid fuel by the existing infrastructure of pipelines, marine barges, rail cars, and tanker trucks for refueling vehicles by local gasoline and diesel fuel metering pumps.

NET-HYDROGEN LIQUID FUEL ENVIRONMENTAL IMPACT: Fuel cell and combustion engine applications of such net-hydrogen liquid fuel can be the same as pure hydrogen to produce potable water.

PROFITABLE BUSINESSES: One million BTU (LHV) of renewable methane delivered by existing pipelines for \$2.00 to \$5.00 (about 50 lbs) can be dissociated into 37 lbs of carbon to make durable goods and 13 lbs of hydrogen to replace 6 gallons of gasoline. For efficient renewable energy storage, rapid refueling, and extended range, such hydrogen is combined with atmospheric nitrogen and carbon dioxide to produce net-hydrogen Metrol liquid fuel. Metrol can be stored in gasoline, diesel, and jet fuel tanks at ambient temperature and pressure. Sales of durable carbon products and net-hydrogen Metrol liquid fuel can provide income of \$40.00 to more than \$1,000 from less than \$5.00 for feedstock.

SUMMARY: Carbon-reinforced renewable energy conversion equipment can produce far more electricity and hydrogen compared to wastefully burning carbon one time. Coproduced net-hydrogen liquid fuel enables the world's fuel cells and 1.2 billion engines (soon to be 2 billion engines) in transportation, electricity generation, farming, and mining applications to last longer, produce more power, and actually clean the air. Moreover hydrogen fuel cells and engine-generators that clean the air will recharge battery electric vehicles.

Please contact us concerning practical products to overcome local pollution and thus enable green-plant photosynthesis to overcome global warming. Some 10,000 profit motivated new ventures in communities around the world can convert substances that ordinarily rot or burn into carbon-reinforced durable goods and hydrogen or net-hydrogen Metrol liquid fuel to replace fuel oil, gasoline, diesel, and jet fuel.

The Hydrogen Association
Roy McAlister 602-931-2867
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