

From: [Duvall, Ron](#)
To: [Regynski, Barb](#)
Cc: [Smith, Kim \(DENR\)](#)
Subject: FW: [EXT] ATTN: Barb Regynski - VW BMP
Date: Wednesday, November 01, 2017 3:47:28 PM
Attachments: [South Dakota VW Letter.docx.pdf](#)
[Public Transit Elec Project South Dakota VW.pdf](#)
[image001.png](#)

Barb, for you...

NOTE: When replying to this email do NOT click the person's [\[mailto:myname@email.com\]](mailto:myname@email.com) address since this may result in your reply being undeliverable. Either copy and paste just the email address (e.g. myname@email.com) or type just the address into your reply message.

From: Kate Teodosio [<mailto:KTeodosio@Proterra.com>]
Sent: Wednesday, November 01, 2017 3:21 PM
To: DENR INTERNET INFORMATION
Cc: Eric McCarthy; Kent Leacock
Subject: [EXT] ATTN: Barb Regynski - VW BMP

Good afternoon,

Please find Proterra's comments attached.

Thank you,



Kate Teodosio
Executive Assistant
O: 864.438.2394 | M: 864.371.9200 | kteodosio@proterra.com
www.proterra.com | 1 Whitlee Court Greenville, SC 29607





November 1, 2017

South Dakota Department of Environment & Natural Resources
Attn: Barb Regynski

RE: Proterra Comments on VW Settlement Partial Consent Decrees

Proterra appreciates the opportunity to provide comments on the funding allocated under Appendix D of the 2.0 Liter Partial Volkswagen (VW) Consent Decree and under the 3.0 Liter Partial Consent Decree.

Proterra designs and manufactures the world's most fuel-efficient battery electric bus and features on-route, fast-charge technology that offers functionally unlimited range, as well as an extended range version that enables transit agencies to travel 350 miles on a single charge. Proterra's CATALYST™ bus achieves 22+ MPGe performance, 500%+ better than diesel and CNG buses, eliminating toxic diesel particulate matter and reducing carbon emissions by 70% or more compared to CNG or diesel buses. In addition, the cost of maintenance differential is substantial in comparison to fossil fueled buses. Using the APTA average of 36,000 miles per year and the FTA required 12-year life, a Proterra bus will save a transit agency over \$200,000.00 per bus on average compared to a fossil fuel transit bus.

Our mission is simple: to deliver clean, quiet transportation to all communities by replacing heavy-duty, fossil-fueled transit buses with zero-emission public transit buses. The harmful effects of vehicle exhaust from medium and heavy-duty trucks are on the rise and have been for years. The EPA reports that medium and heavy duty vehicles account for 20% of GHG emissions and oil use in the United States' transportation sector, but represent only 5% of the vehicles on the road. Similarly, GHG emissions from heavy duty vehicles across the globe are growing rapidly and are expected to surpass emissions from passenger vehicles by 2030. There is thus a strong need to not only mitigate past criteria pollutant emissions, but to continue to reduce toxic air pollutants in the medium and heavy duty sector.

The Volkswagen settlement provides a much-needed opportunity to address this growing environmental concern and further demonstrate that commercially available zero-emission technologies have the lowest cost of ownership, improved maintenance and performance, and better serve a diverse range of communities' public transit needs, including the reduction of NOx and the elimination of GHG and criteria emissions.

We strongly recommend that South Dakota direct ~50% of the settlement funds to incentivize the deployment of zero emission, battery electric transit buses and medium duty vehicles to help reduce GHG and NOx emissions and vehicle miles traveled, as well as provide other health and associated benefits throughout South Dakota, but particularly in those areas that receive a disproportionate quantity of air pollution from diesel transit fleets.

As part of this funding proposal, we recommend that South Dakota adopt two specific funding programs that have significantly accelerated the adoption of heavy duty EVs and, as a direct result, helped reduce NOx and GHG emissions. First, we urge South Dakota to adopt the competitive funding programs in place in California and at the federal level. The CA Zero-Emission Truck and Bus Program is a competitive funding program that allows all manufacturers of zero-emission technology to partner with transit agencies and compete for project funding. It is very much modeled after the highly competitive Federal Transit Administration's Low or No Emission Program, which has helped fund the purchase of zero-emission transit buses across the US. The CA program is important in that it allows newcomers to receive funding

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for not only buses, but also chargers. We suggest that South Dakota's Department of Environment & Natural Resources fund the deployment of five EV buses, which will reduce ~ 500 gallons of diesel fuel over 12 years of operation. The well-to-wheel GHG emissions avoided for five zero-emission transit buses is ~ 531 metric tons CO₂e/year.

Second, the CA Hybrid & Zero-Emission Truck and Bus Voucher Incentive Program (HVIP) is a pool of money that is used by transit agencies on a first come, first served basis to bridge the gap between purchasing a fossil fuel vehicle and a zero-emission vehicle. For example, the transit bus OEM can receive a voucher for up to \$160,000 per EV vehicle, which amount is then deducted from the cost of the bus. New York City (New York Truck Voucher Incentive Program) and Chicago (Drive Clean Truck Voucher Program) have implemented similar programs. These programs have proven valuable in allowing agencies (and commercial properties) to grow their fleets of zero-emission buses. See attached PowerPoint presentation for more details regarding both programs.

Appendix D of the VW Settlement allows each beneficiary to invest up to 15% of its allocation of Trust Funds on costs associated with deploying new, light duty chargers. Proterra recommends that South Dakota dedicate its entire 15% towards electric vehicle charging infrastructure. Proterra's newly-introduced extended range bus, the E2, supports SAE J1772 CCS charging, which is also the standard adopted by many light duty OEMs. Accordingly, the additional investment in charging infrastructure has the added benefit of accelerating EV adoption across the light duty sector as well.

Thank you for the opportunity to provide informal input on how to develop a Beneficiary Mitigation Plan that best meets the needs of South Dakota while reducing emissions of NO_x from vehicles. Please feel free to contact me directly at 864-214-2668 or emccarthy@proterra.com.

Sincerely,

Eric J. McCarthy

SVP, Government Relations, Public Policy and Legal Affairs
Proterra Inc.

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PUBLIC TRANSIT ELECTRIFICATION PROJECT: SUSTAINABLE MOBILITY FOR SOUTH DAKOTA



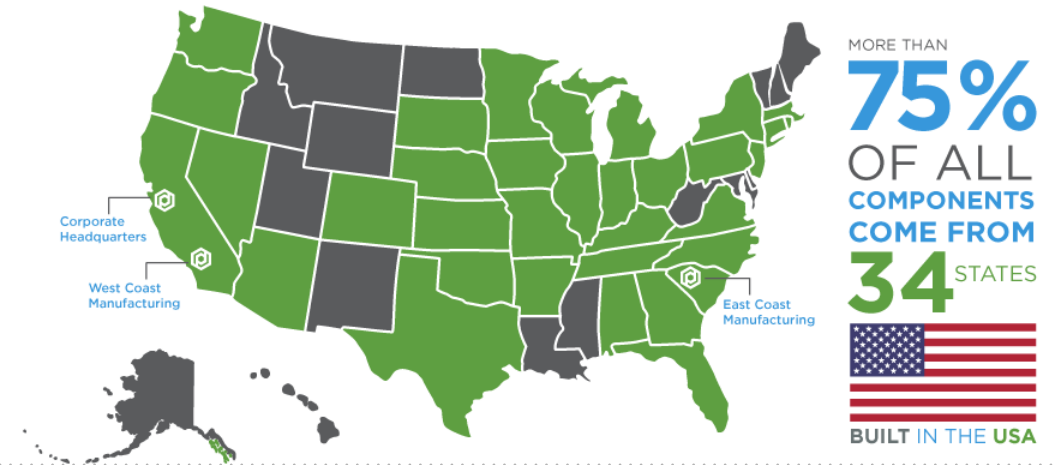
PRESENTED BY
Eric J. McCarthy
SVP, Government Relations, Public Policy and Legal Affairs



Proterra's Mission

Advancing electric vehicle technology to deliver the world's best-performing transit vehicles

- Founded in 2004
- Offices and manufacturing in CA and SC
- ~300 employees, strong executive management team
- Backed by industry-leading VC and corporate investors
- 40 customers; 400+ vehicles sold
- 113+ vehicles delivered; >3,750,000 service miles
- >13,700,000 pounds of CO2 emissions avoided



Strong Executive Team

TESLA



SUNPOWER



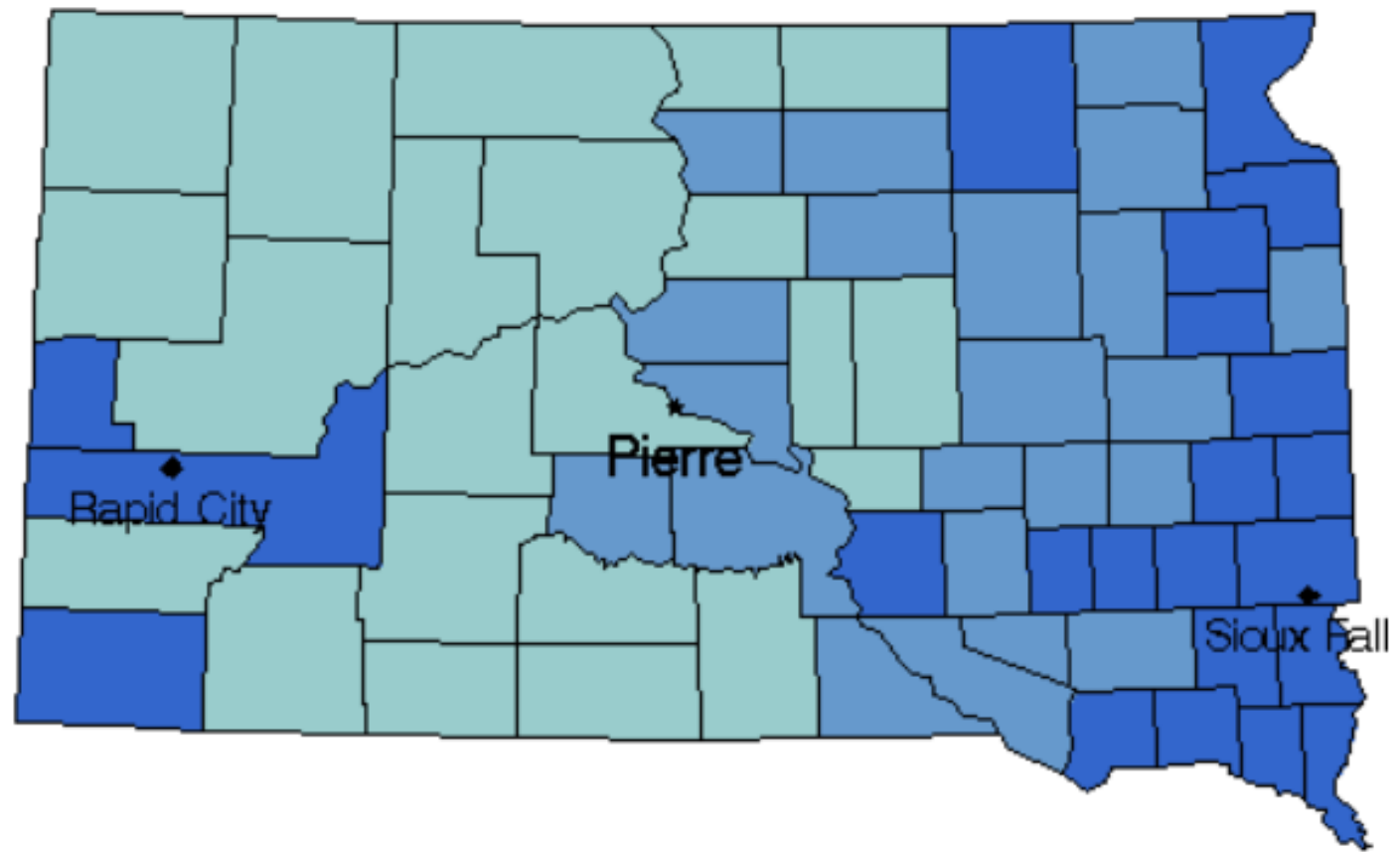
Honeywell



Solid Financial Backing



HIGH NOx CONCENTRATION AREAS IN SOUTH DAKOTA



Nitrogen Oxides Emissions in 2014 (Tons per Square Mile)

- 0.5482 - 0.9051
- 0.9368 - 14529
- 14610 - 16.9741

- EPA reports that medium and heavy-duty vehicles account for 23% of GHG emissions and oil use in the US' transportation sector, but represent only 5% of the vehicles on the road
- 7,461,458 tons of NOx, or 55% of the 13,489,110 tons of NOx emitted nationally, derive from mobile sources; 35% attributable to on-road sources; https://www3.epa.gov/cgi-bin/broker?polchoice=NOX&_debug=0&_service=data&_program=dataprog.national_1.sas
- 48,614 tons of NOX, or 47% of the 103,356 tons of NOx emitted in South Dakota, are from mobile sources; https://www3.epa.gov/cgi-bin/broker?_service=data&_debug=0&_program=dataprog.state_1.sas&pol=NOX&stfips=46
- As a result, there is a strong need to not only mitigate past criteria pollutant emissions, but to continue to reduce toxic air pollutants in the medium and heavy-duty sector

ANNUAL TAILPIPE EMISSIONS

Emission (<u>lbs</u> /bus/ <u>yr</u>)	Proterra	CNG	Hybrid	Diesel
CO	0	1,822	20.59	41.18
CH4	0	792	4.11	4.03
CO ₂	0	169,488	140,976	198,000
GHG (CO₂e)	0	190,080	141,083	198,105
NO _x	0	46.73	92.66	92.66
VOC	0	3.82	3.82	3.82
PM (2.5+10)	0	3.52	3.52	3.52
BC	0	0.15	0.15	0.15

<https://greet.es.anl.gov/>

Assumes 36k miles driven per bus per year



SPECIFIC RECOMMENDATIONS FOR SOUTH DAKOTA'S VW FUNDING ALLOCATION

- Direct ~50% of the settlement funds to incentivize the deployment of zero-emission, battery electric transit buses. Specifically:
- Adopt a competitive program that will accelerate adoption of heavy-duty EVs by funding the deployment of 5 EV buses and plug-in chargers and, as a direct result, help reduce NOx and GHG emissions. Examples include:
 - California Zero-Emission Truck and Bus Program
 - Federal Transit Administration's Low or No Emission Grant Program
- Set aside a pool of money for transit agencies to use on a first-come, first-served basis to bridge the gap between purchasing a fossil-fuel vehicle and a zero-emission vehicle. Examples include:
 - California's Hybrid & Zero-Emission Truck and Bus Voucher Incentive Program (HVIP)
 - New York Truck Voucher Incentive Program
 - Chicago's Drive Clean Truck Voucher Program

- Operational advantages yield ~ \$135,000 lifetime savings in maintenance costs and \$290,000 in fuel savings compared to diesel fuel
- Achieve significant reductions in diesel emissions and expedite deployment and widespread adoption of zero-emission vehicles
- Demonstrate the economic and environmental benefits of accelerating the transition to commercially available zero-emission technology
- Reduce NOx, GHG and other pollutants, particularly in those areas that receive a disproportionate quality of air pollution; protect vulnerable populations
- Achieve significant and sustained health and other air quality benefits
- Accelerate scaled zero-emission vehicle deployment
- Increase awareness of the many options for zero-emission mobility

- Well-to-wheel GHG emissions avoided for 5 zero-emission transit buses is approximately 531 metric tons CO₂e/year. Based on a 12-year lifespan, the lifetime well-to-wheel GHG emissions avoided is up to 6,373 metric tons CO₂e.
- The total tailpipe emission reduction is .21 tons NOx/year, 0.0086 tons of ROG/year and .00080 of PM₁₀/year. Combined tailpipe weight emission reductions for criteria pollutants is 0.48 tons/year and 5.79 tons over the lifetime of the project.
- Total Cost Effectiveness of GHG Emission Reductions: ~ \$781.83/metric tons of CO₂e.
- Total Cost Effectiveness of Criteria Pollutants: ~\$1,805,000/metric tons of weighted criteria pollutants (NOx is included in the criteria pollutants and comprises the majority of those pollutants).
- 5 EV buses will reduce ~ 500k gallons of diesel fuel over 12 years of operation.

THANK YOU

