

Iowa Volkswagen Settlement Funding Opportunity and Getting Ready for Alternative Fuels

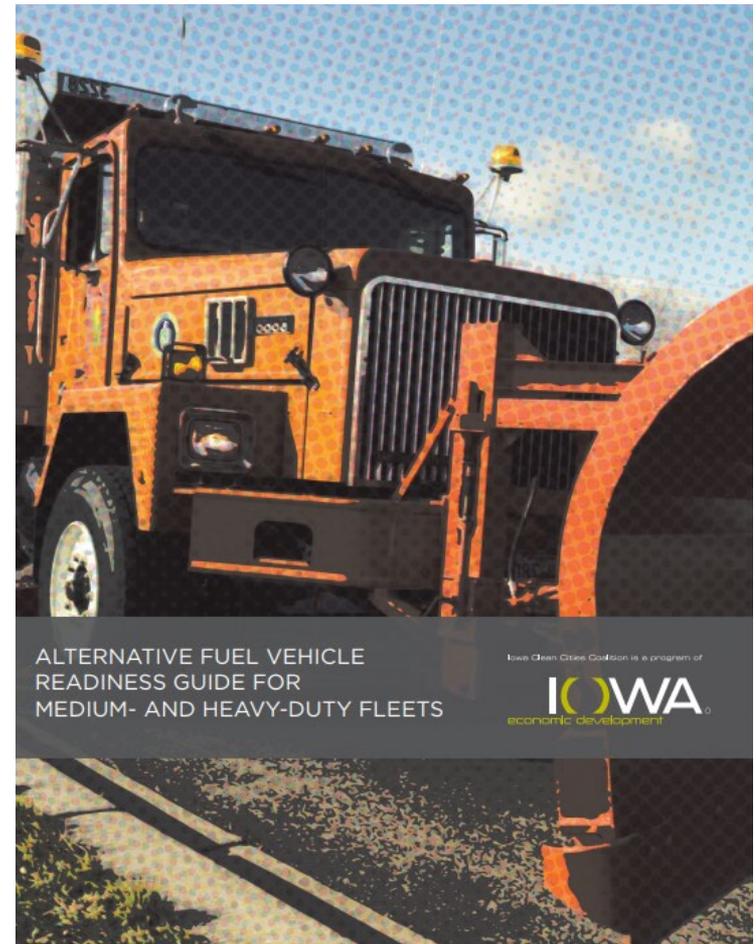
By: Iowa Clean Cities Coalition,
Iowa DOT and the National Renewable
Energy Lab

Overview

- » Introduction to Iowa Clean Cities
- » VW Settlement Overview | Stu Anderson
- » VW Application Overview | Zac Bitting
- » Questions and Answers
- » Alternative Fuel Transportation Projects Best Practices | Kay Kelly and Johnathan Gonzales
- » Questions and Answers

Iowa Clean Cities

- » Part of a national network to increase adoption of alternative fuels
- » Housed in the Energy Office
- » Developed guide to help fleets transition to alternative fuels
- » <https://bit.ly/2SDumbu>



Iowa's Volkswagen Settlement Environmental Mitigation Trust Application Cycle 1

Contact:

vwsettlement@iowadot.us

Website:

<https://www.iowadot.gov/vwsettlement/>



Introductions

- Stu Anderson, Planning, Programming and Modal Division Director
- Zac Bitting, Program Manager

Purpose of Today's Webinar:

- Iowa's Volkswagen Settlement overview
- Funding program and application overview
- Questions

Agenda

- Iowa's Volkswagen Settlement
 - Overview & Program Purpose
 - Funding
 - Eligibility
 - Eligible/Ineligible Costs
 - Application
 - Project Evaluation
 - Schedule

Overview & Program Purpose

Volkswagen Settlement Overview:

- Volkswagen violated the federal Clean Air Act by equipping vehicles with “defeat devices”
- Settlement created a trust to provide a new funding opportunity to reduce nitrogen oxides (NOx) through a specific set of mitigation actions
- Volkswagen must pay \$2.9 billion into an Environmental Mitigation Trust (Trust)
- Iowa’s allocation is approximately \$21 million

Purpose of Iowa’s Volkswagen Settlement Environmental Mitigation Trust funding program:

- Positively impact air quality by reducing NOx emissions and implementing eligible mitigation projects that best align with the state’s funding priorities
- Enhance ability to provide competitive transportation options for shipment of products and moving goods
- Incentivize alternate modes for economic development partnership purposes

Overview & Program Purpose

Working Group Overview:

- A state agency working group, coordinated by the Iowa Department of Transportation, has been tasked with reviewing the Volkswagen settlement requirements, consulting available resources on air quality and alternative fuels, and engaging the public to determine the best use of the Volkswagen settlement funds
- The working group is made up of representatives from the following state agencies:
 - Iowa Department of Transportation
 - Iowa Economic Development Authority
 - Iowa Department of Administrative Services
 - Iowa Department of Education
 - Iowa Department of Justice, Office of the Attorney General of Iowa
 - Iowa Department of Natural Resources
 - Iowa Department of Public Health

Past activities until now:

- First partial settlement lodged with the court approved (Oct 2016)
- Initial survey seeking input on how to spend Volkswagen settlement funding (April 2017)
- Trust Effective Date (Oct 2, 2017)
- Iowa received official beneficiary status (Jan 2018)
- Receive public comments on draft Beneficiary Mitigation Plan (May 2018)
- Submission of Beneficiary Mitigation Plan (Aug 2018)

Overview & Program Purpose

Beneficiary Mitigation Plan Overview:

- The plan summarizes how the state plans to use the Volkswagen settlement funds allocated under the environmental mitigation trust
- Most popular survey responses received was on funding school bus replacements, specifically for buses utilizing fuel sources such as propane.
- Responses were also overwhelmingly in favor of zero-emission vehicle infrastructure for light-duty electric vehicles and supplementing the Diesel Emission Reduction act grant program.
- In August 2018, the plan was finalized.

Funding Cycles:

- Iowa may not withdraw more than one-third of its allocation during the first year, or two-thirds during the first two years.
- Iowa anticipates a minimum of three funding cycles:
 - \$4,900,000 per funding cycle for Class 4-8 Buses, Freight and Port Drayage Trucks, and Non-Road Transport and Equipment
 - \$1,050,000 per funding cycle for Zero Emission Vehicle Supply Equipment
 - \$315,000 per year for Diesel Emission Reductions Act grant program

Iowa's Volkswagen Settlement Funding

- First Funding Cycle
 - \$4.9 million across three mitigation categories

Mitigation Category	Funding Available
Category 1 - Class 4-8 School Bus, Shuttle Bus, or Transit Bus	\$3,150,000
Category 2 - Freight Trucks and Port Drayage Trucks	\$1,050,000
Category 3 - Non-Road Transport and Equipment	\$700,000
TOTAL	\$4,900,000

- A solicitation of applications for the first funding cycle of Zero Emission Vehicle Supply Equipment category (\$1,050,000) is anticipated in 2019.

Eligible Applicants

- Applicant Eligibility:

- Private organizations*
- Public transit system operators*
- Cities or counties*
- Schools*

* Must own and operate diesel fleets and equipment in Iowa.

- Applicant Ineligibility:

- State agencies (or their employees)
- Entities or individuals currently suspended or disbarred by the federal government

Application Limitations and Requirements

- No applicant will be awarded more than \$500,000 during a funding cycle
- Award funds as cost reimbursement grants
- If an applicant desires to apply for funding across more than one project category, an application must be submitted for each project category.
 - The applicant must prioritize the applications at the time of submission.
- Cost reimbursement upon completion of the project
- All replaced or repowered vehicles, engines, or equipment must be scrapped according to requirements.

Eligible Mitigation Categories

- Category 1 – Class 4-8 School Bus, Shuttle Bus, or Transit Bus
 - Includes replacing or repowering a 2009 engine model year or older diesel bus
 - Replacement or repower can be a new diesel, alternate fueled, or all-electric bus or engine with an engine model year of the current year or one engine model year prior (ex. Current year = 2019, prior year = 2018)
 - Projects selected for funding will be reimbursed up to the maximum dollar amount per vehicle or percentage of total costs per vehicle, whichever is less
 - If charging infrastructure is required in conjunction with an all-electric replacement or repower, the applicant may receive up to \$10,000 per vehicle toward those costs.

Replacement	Diesel	Alt Fuel/ Hybrid	All-Electric	Electric Charging Infrastructure w/ Replacement
School or Shuttle Bus (Class 4-7)	\$25,000	\$45,000	\$180,000	\$10,000
	25%	25%	45%	45%
Transit Bus (Class 8)	\$100,000	\$175,000	\$300,000	\$10,000
	25%	25%	45%	45%
Repower	Diesel	Alt Fuel/ Hybrid	All-Electric	Electric Charging Infrastructure w/Repower
All Class 4-8 Buses	30%	40%	50%	50%

Eligible Mitigation Categories

- Category 2 – Freight Trucks and Port Drayage Trucks
 - Includes replacing or repowering a 1992-2009 engine model year class 4-8 local freight trucks or class 8 drayage trucks
 - Replacement or repower can be a new diesel, alternate fueled, or all-electric truck or engine with an engine model year of the current year or one engine model year prior (ex. Current year = 2019, prior year = 2018)
 - Projects selected for funding will be reimbursed up to the maximum dollar amount per vehicle or percentage of total costs per vehicle, whichever is less
 - If charging infrastructure is required in conjunction with an all-electric replacement or repower, the applicant may receive up to \$10,000 per vehicle toward those costs.

Replacement	Diesel	Alt Fuel/ Hybrid	All-Electric	Electric Charging Infrastructure w/Replacement
Class 4-7 Local Freight Trucks	\$20,000	\$30,000	\$40,000	\$10,000
	25%	25%	45%	45%
Class 8 Local Freight and Drayage Trucks	\$30,000	\$40,000	\$50,000	\$10,000
	25%	25%	45%	45%
Repower	Diesel	Alt Fuel/ Hybrid	All-Electric	Electric Charging Infrastructure w/Repower
All Class 4-8 Trucks	30%	40%	50%	50%

Eligible Mitigation Categories

- **Category 3 – Non-Road Transport and Equipment**
 - Includes replacing or repowering non-road transport and equipment: i.e., freight switcher, airport ground equipment, forklifts and port cargo handling equipment, and marine vessel shorepower
 - Projects selected for funding will be eligible to receive, on a per application basis, up to \$300,000, or the percentage of total costs, whichever is less

Replacement	Diesel	Alt Fuel/ Hybrid	All-Electric	Electric Charging Infrastructure w/Replacement
Freight Switcher	20%	25%	50%	50%
Airport Ground Support Equipment	N/A	N/A	50%	50%
Forklifts and Port Cargo Handling Equipment	N/A	N/A	50%	50%
Repower	Diesel	Alt Fuel/ Hybrid	All-Electric	Electric Charging Infrastructure w/Repower
Freight Switcher	35%	40%	50%	50%
Ferries/Tugs	35%	40%	50%	50%
Airport Ground Support Equipment	N/A	N/A	50%	50%
Forklifts and Port Cargo Handling Equipment	N/A	N/A	50%	50%
Installation of Shorepower				
Marine Vessels				25%

Eligible Mitigation Categories

- Category 3 – Non-Road Transport and Equipment
 - Freight Switchers
 - Replacement or repowering of pre-Tier 4 locomotives that operate 1,000 hours or more per year in rail yards for light freight duties and rail car transfer with any new diesel, alternate-fueled, or all-electric engine(s) or freight switcher (including generator sets)
 - Replacements and repowers need to be certified to meet the applicable EPA emissions standards for the engine model year in which the replacement or repower occurs.
 - Ferries and Tugs
 - Ferries and tugs with unregulated, Tier 1, or Tier 2 diesel-powered marine engines may be repowered with any new Tier 3 or Tier 4 diesel, alternate-fueled, or all-electric engines.
 - Marine Vessel Shorepower
 - This project type includes systems that enable the main and auxiliary engines of a compatible vessel (including those operating in fresh-water lakes or rivers) to remain off while the vessel is at berth. Components eligible for reimbursement are limited to cables, cable management systems, shore power coupler systems, distribution control systems, and power distribution.

Eligible Mitigation Categories

- Category 3 – Non-Road Transport and Equipment
 - Airport Ground Support Equipment
 - Tier 0, Tier 1, or Tier 2 diesel-powered equipment; and
 - Uncertified or certified to 3 g/bhp-hr or higher emissions, spark ignition engine powered airport ground equipment.
 - Eligible equipment may be repowered with an all-electric engine or may be replaced with an all-electric form of the same airport ground support equipment.
 - Forklifts and Port Cargo Handling Equipment
 - Forklifts with a lift capacity greater than 8,000 lbs. may be repowered with an all-electric engine or may be replaced with the same equipment in an all-electric form.
 - Eligible types of forklifts include reach stackers, side loaders, and top loaders.
 - Port cargo handling equipment may be repowered with an all-electric engine or may be replaced with the same equipment in an all-electric form.
 - “Port Cargo Handling Equipment” shall mean rubber-tired gantry cranes, straddle carriers, shuttle carriers, and terminal tractors, including yard hostlers and yard tractors

Ineligible Projects

- The following are not eligible activities under this program:
 - Vehicle and equipment replacements that are mandated under federal law
 - Liquid or gaseous fueling infrastructure
 - Purchases to expand a fleet
 - Upgrading/replacing diesel vehicles/equipment with gasoline-powered engines
 - Emissions testing, air monitoring, or research activities
 - Replacement or repowers of vehicles or equipment that have not been chiefly operated within the state of Iowa during the previous calendar year (over 80 percent of the miles or hours)
 - Replacement or repowers of non-diesel engines
 - Replacement or repowers of vehicles and equipment that are not owned by the applicant (certificate of title lists the applicant's name)

Costs

- Eligible project costs:
 - Costs directly incurred by the applicant through the purchase and/or installation of eligible technologies, equipment, and vehicles after the execution of a project funding agreement are eligible for reimbursement.
 - These costs may include the procurement of goods and services from vendors and contractors as well as labor costs incurred by the applicant's employees for installation.
- Ineligible project costs:
 - Funds awarded by this program cannot be used for administrative costs, lobbying, or for the intervention in federal regulatory or adjudicatory proceedings.
 - Costs incurred prior to the execution of the project funding agreement are also ineligible project costs and will not be reimbursed.

(No part of a project may be started until an agreement is signed)

Project Evaluation Criteria

- NOx Emission Reduction (30%)
 - Can projects achieve significant, quantifiable reductions in NOx emissions?
- Cost Effectiveness (20%):
 - The cost effectiveness will be calculated by dividing the funding request by the NOx emission reduction
- Disproportionate Share of Air Pollution (15%)
 - County mobile NOx measurements, county registered non-compliant Volkswagen subject vehicles, areas of concern for vulnerable populations, county rates of asthma and heart disease hospitalizations, county point source NOx measurements
- Demonstration of Previous Successes (5%)
 - Has a project built on the successes of previous emission reduction projects completed by the applicant?
- Complements Other Programs (5%)
 - Does the project complement other public and/or private programs, initiatives, or partnerships to reduce emissions?
- Verified Additional Funding Programs (10%)
 - Will the project expand the impact of mitigation funding by leveraging other verified additional funding sources and result in a larger applicant cost share than required?
- Long-term Sustainability (5%)
 - The applicant's ability to continue efforts or expand the project after the mitigation project funding is utilized and whether the project is a continuation of a previous effort.
- Alignment with the Iowa Energy Plan (10%)
 - Does the project contribute toward furthering objectives of the Iowa Energy Plan?

How To Apply

- Application available on the Iowa DOT's Volkswagen Settlement website <https://www.iowadot.gov/vwsettlement>
- Questions or requests for clarification about this program may be submitted in writing via email to vwsettlement@iowadot.us
 - A list of written questions and answers will be available for review at <https://www.iowadot.gov/vwsettlement>.
- Complete applications will contain the following materials:
 - Application Form
 - Signed Certification
 - Fleet Description Form
 - Project Costs Form
 - Minority Impact Statement
- Application deadline **January 18, 2019** before 5:00pm
- Signed and completed applications are accepted by email to:
vwsettlement@iowadot.us

Schedule

- **November 20, 2018:** Notice of Funding Availability
- **December 12, 2018:** Informative Webinar
- **January 18, 2019:** Applications due
- **February 2019:** Review Applications
- **March 2019:** Execute funding agreement
- **April 2019:** Estimated project start date

All projects must be completed within two years of executed agreement

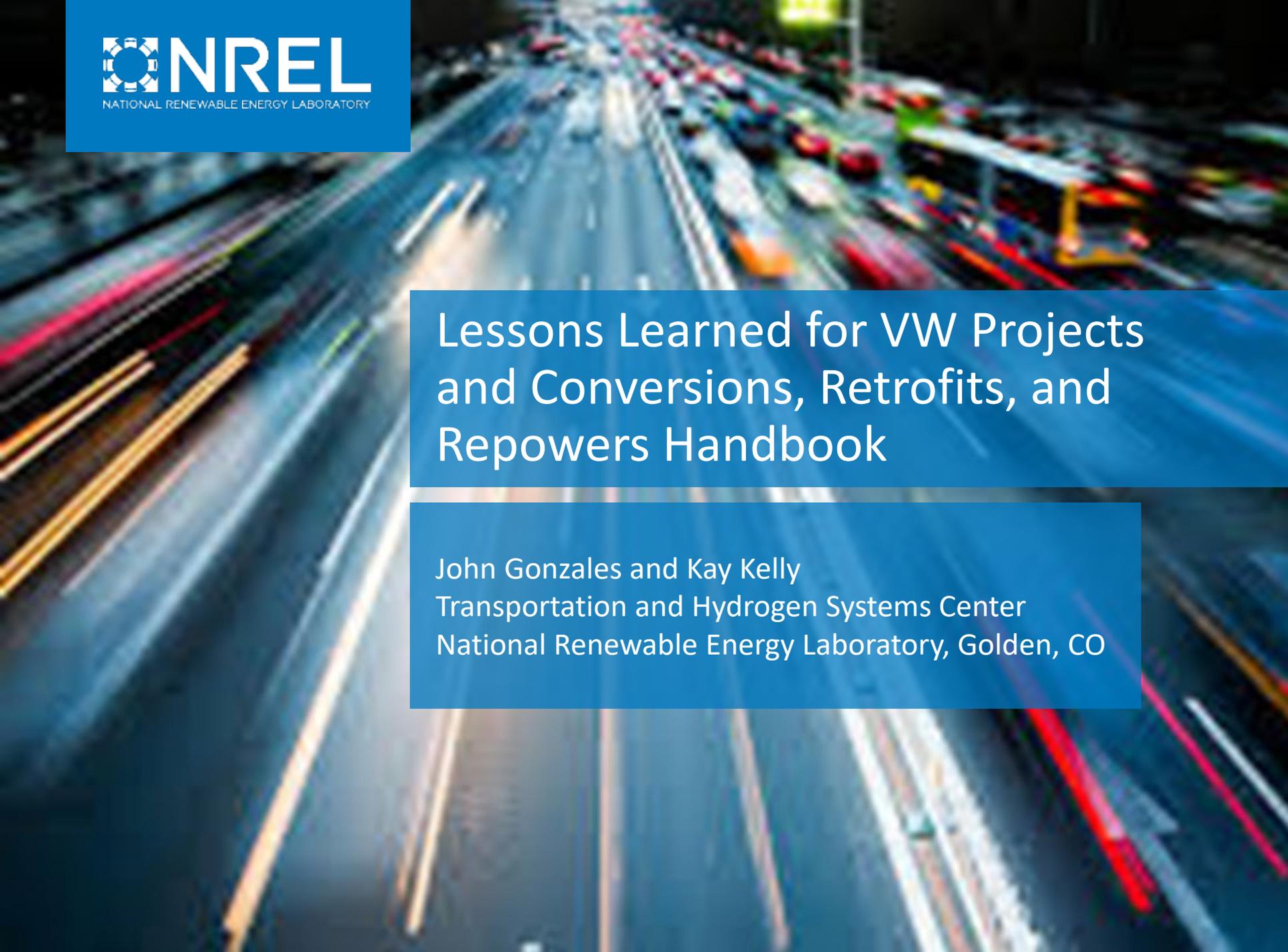
For More Information:

<http://www.iowadot.gov/vwsettlement>

Questions?

vwsettlement@iowadot.us





Lessons Learned for VW Projects and Conversions, Retrofits, and Repowers Handbook

John Gonzales and Kay Kelly
Transportation and Hydrogen Systems Center
National Renewable Energy Laboratory, Golden, CO

Topics

- 1** **The VW Opportunity**

- 2** **Definitions**

- 3** **Vehicle Considerations**

- 4** **Stations and Vendors**

- 5** **Technical Assistance Options**

Topics

- 1** **The VW Opportunity**

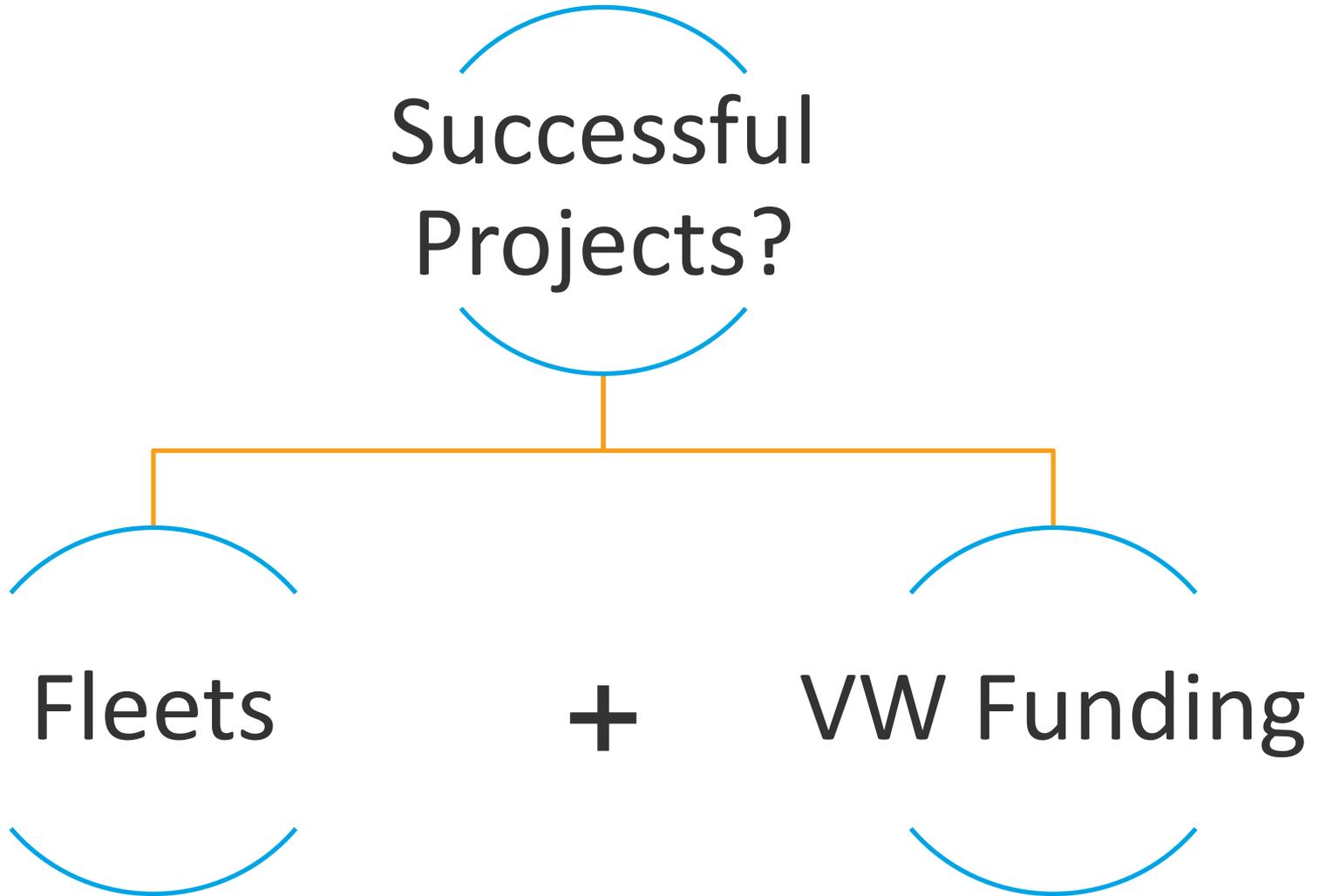
- 2** Definitions

- 3** Vehicle Considerations

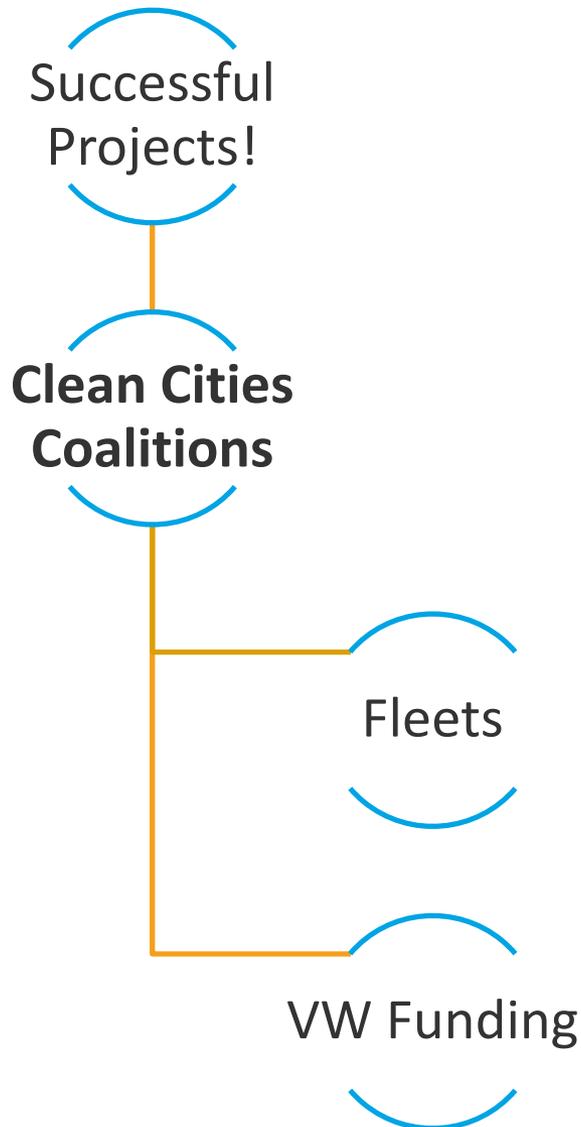
- 4** Stations and Vendors

- 5** Technical Assistance Options

VW Funding



Having Coalitions Involved is a Critical Factor to Success



Clean Cities Coalitions are well-positioned within local markets to connect with willing participants who are ready to deploy alternative fuel vehicles and they possess the knowledge and access to resources to help partners overcome the challenges they may face during implementation.

Topics

1 The VW Opportunity

2 **Definitions**

3 Vehicle Considerations

4 Stations and Vendors

5 Technical Assistance Options

What is an OEM?

- Original equipment manufacturer
- Usually describes a major vehicle manufacturer
- Not to be confused with a system/kit manufacturer.



What is a Conversion?

- A process that modifies an existing engine:
 - To an alternative fuel like natural gas, propane, E85, or hybrid power
 - Can be Dedicated, Bi-fuel, Dual-fuel, Hybrid (plug-in or hydraulic assist)
 - NFPA 52, 58, and CSA as guiding documents



What is a Retrofit?

- Commonly describes diesel emissions system modifications
- Hardware technology added to reduce emissions
- Typically diesel oxidation catalyst (DOC) or diesel particulate filter (DPF)

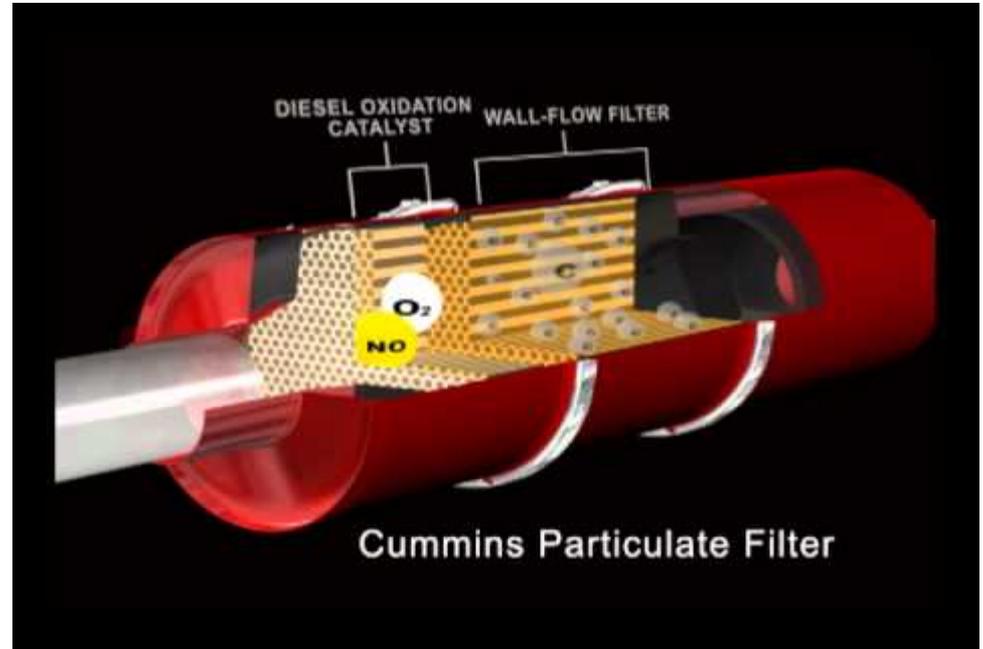


Photo from YouTube <https://www.youtube.com/watch?v=8hG-ZO6pmY4>

What is a Repower?

- Typically older vehicles
- Replacing an older engine with a new one certified to meet cleaner emissions standards
- Many benefits but also potential complications



Topics

1 The VW Opportunity

2 Definitions

3 Vehicle Considerations

4 Stations and Vendors

5 Technical Assistance Options

VEHICLES: Right Technology, Right Application



Sedan/Wagon



Truck



SUV



Van



Step Van



Vocational/Cab
Chassis



Street Sweeper



Refuse



Tractor



Shuttle Bus



Transit Bus



School Bus

Vehicle Considerations

Fuel Properties

Combustion
Temperatures

Lubricity

Drive Cycle & Duty Cycle

Daily Driving
Distance

Terrain

Traffic

Vehicle
Loading

Driving Range

Energy
Density of
Fuel

Station
Availability

Station
Proximity to
Typical Routes

“Prep-ready” engines help prevent damage from the higher temperatures and lower lubricity associated with gaseous fuels

Vehicle Considerations

Cargo Capacity

Placement and Weight of Equipment

Chassis Strength

Available Space

Fuel Lines and Tanks

Engine Compartment

Body/Chassis

Repowering a vehicle will require an engineered solution to ensure that the new engine can work in an old vehicle's body and chassis.

Vehicle Considerations

Facility Modification

Fueling

Maintenance

Vehicle Downtime

Vehicles Will Be Unavailable

Out-of-Service Time Will Vary

The nature and extent of maintenance facility modifications will depend on the new fuel or technology and the nature of work to be performed in that facility.

Topics

1 The VW Opportunity

2 Definitions

3 Vehicle Considerations

4 Stations and Vendors

5 Technical Assistance Options

STATIONS: Right Location, Right Capacity



Station Considerations

Location

Proximity
to Fleets

Enabler for
a Corridor

Capacity

Fill/Dwell
Time

Station
Throughput

Fueling
Experience

Vehicles rely on supporting infrastructure. A fleet's experience with fueling/charging stations will directly impact overall satisfaction with the vehicles.

VENDORS: Request for Proposals / Quotes

- Always include terms and conditions specific to system installation
- Installations should be performed according to:
 - Manufacturer Guidelines
 - Widely Accepted Industry Practices
 - National Codes and Standards
 - State/Local Requirements
 - Standard Business Certifications, Internal Guidelines, and Quality Control Procedures
- Additional best practices:
 - Incorporating an Evaluation Period
 - Periodic Inspections
 - Facility Site Visits

VENDORS: Performing Due Diligence

Solvency

Request Copies
of Business
Records

Check Public
Records

References

Ask for Them

Contact All of
Them

Be Alert for
Red Flags

Risk Assessments should be performed to ensure the company will have the capability to complete the project and address any warranty issues once the project is complete.

VENDORS: Best Practices

Personnel

Licensed Technicians

Trained in the System Being Installed

Procedures

Written Installation Procedures

Process Performed in a Repeatable Manner

Inventory

Keeps All Pieces Accounted for

Prevents Damage

Includes Multiple Levels of Sign-off

Successful installation of a conversion, retrofit, or repower system is highly dependent upon the skills, training and attentiveness of the person performing the work.

VENDORS: Ensuring a Quality Job

Quality System Retrofitter (QSR):

- Trained technicians meeting strict requirements
- Expert in fuel/technology
- Ford QVM program
- Be cautious!



VENDORS: Emissions Certification

Emissions Certificates:

- EPA regulates vehicle emissions.
- Emissions must not increase as a result of modifications.
- Kit manufacturers can obtain an EPA Certificate of Conformity.
- CARB has a similar certification requirement.
- Ask to see the certificate for a particular system.
- Refer to the handbook for more details.

An EPA or CARB Certificate of Conformity certifies that a converted or retrofitted vehicle or engine meets emissions standards.

EPA Certificate of Conformity

	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY 2012 MODEL YEAR CERTIFICATE OF CONFORMITY WITH THE CLEAN AIR ACT OF 1990	OFFICE OF TRANSPORTATION AND AIR QUALITY ANN ARBOR, MICHIGAN 48105	
Certificate Issued To: BAF Technologies (Alternative Fuel Converter) Certificate Number: CBAFT05.45HK-001	Effective Date: 09/16/2011 Expiration Date: 12/31/2012	 Karl J. Simon, Director Compliance and Innovative Strategies Division	Issue Date: 09/16/2011 Revision Date: N/A
Test Group Name: CBAFT05.45HK Evaporative/Refueling Family Name: CBAFR0000001 Applicable Exhaust Emission Standards: Federal Tier 2 Bin 6 Applicable Evaporative/Refueling Standards:	Engine Displacement: 5.4 Liters Exhaust Emission Test Fuel Type: CNG Full Useful Life Miles: Exhaust Emissions: 120,000 miles Full Useful Life Miles: Evaporative/Refueling Emissions: 120,000 miles		
Models Covered: BAF Technologies: Ford E-Series Van Vehicle models covered by this certificate were originally produced by Ford Motor Company in model year 2012 to operate on gasoline or E85 and have been modified by the above named manufacturer to operate on CNG. Ford test group CFMXT05.45HK, evap families CFMXR0265NBD, CFMXF0265NBS			
<p>Pursuant to section 206 of the Clean Air Act (42 U.S.C.7525) and 40 CFR Parts 85, 86, 88, and 600 as applicable, this certificate of conformity is hereby issued with respect to test vehicles which have been found to conform to the requirements of the regulations on Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines (40 CFR Parts 85, 86, 88, and 600 as applicable) and which represent the new motor vehicle models listed above by test group and evaporative/refueling emission family, more fully described in the application of the above named manufacturer. Vehicles covered by this certificate have demonstrated compliance with the applicable emission standards as more fully described in the manufacturer's application. This certificate covers the above models, which are designed to meet the applicable emission standards specified in 40 CFR Parts 85, 86, 88, and 600 as applicable at both high and low altitude as applicable.</p>			
EPA is issuing this certificate subject to the conditions and provisions of 40 CFR 86.1848(c).			
REDUCED FEE CERTIFICATE: EPA is issuing this certificate under the reduced fee provisions of 40 CFR 1027.120. This certificate covers up to 50 vehicles. A revised certificate and an additional fee payment are required if the number of vehicles covered by this certificate exceeds 50 vehicles.			
This certificate covers only those new motor vehicles or vehicle engines which conform, in all material respects, to the design specifications that apply to those vehicles or engines described in the documentation required by 40 CFR Parts 85, 86, 88, and 600 as applicable and which are produced during the 2012 model year production period stated on this certificate of the said manufacturer, as defined in 40 CFR Parts 85, 86, 88, and 600 as applicable. The manufacturer shall obtain the approval of the California Air Resources Board (in the form of an executive order issued by the California Air Resources Board) prior to introducing any vehicle covered by this certificate into commerce 1) in the State of California, or 2) in a State that, under the authority of Section 177 of the Clean Air Act, has adopted and placed into effect the California standards to which this test group has been certified.			
Catalyst-equipped vehicles designed to be operated on gasoline or flexible fuel are equipped with an emission control device which the Administrator has determined will be significantly impaired by the use of leaded fuel. This certificate is issued subject to the conditions specified in 40 CFR 80.24. Catalyst-equipped vehicles designed to be operated on gasoline or flexible fuel, otherwise covered by this certificate, which are driven outside the United States, Canada, Mexico, Japan, Australia, Taiwan and the Bahama Islands will be presumed to have been operated on leaded fuel resulting in deactivation of the catalysts. If these vehicles are imported or offered for importation without retrofit of the catalyst, they will be considered not to be within the coverage of this certificate unless included in a catalyst control program operated by manufacturer or a United States Government Agency and approved by the Administrator.			
In the case of completely assembled vehicles, this certificate of conformity covers only vehicles which are completely manufactured prior to January 1, 2013. Normally incompletely assembled vehicles (such as cab chassis) may be completed after this date, provided that the basic manufacturing (including installation of the emission control system) was completed prior to January 1, 2013. This certificate does not cover vehicles sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.			

California Air Resources Board (CARB)

 AIR RESOURCES BOARD	ROUSH INDUSTRIES INC.	EXECUTIVE ORDER A-344-0019
		New Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles

Pursuant to the authority vested in the Air Resources Board by Health and Safety Code (HSC), Div. 26, Part 5, Chap. 2; and pursuant to the authority vested in the undersigned by HSC Sections 39515 & 39516 and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED:

That the following exhaust and evaporative emission control systems produced by the manufacturer are certified as described below. Production vehicles shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	TEST GROUP	VEHICLE TYPE	EXHAUST EMISSION STANDARD CATEGORY	USEFUL LIFE (miles)		INTERMEDIATE IN-USE COMPLIANCE (*N/A or full in-use; A/E=exh. / evap. intermediate in-use)		FUEL TYPE
				EXH / ORVR	EVAP	EXH	EVAP	
2011	BRIT05.45HS	MDV: 8501-10000# GVV	"LEV II" Super Ultra Low Emission Vehicle (LEV II SULEV)	120K	150K	*	*	Liquefied Petroleum Gas
No.	ECS & SPECIAL FEATURES		EVAPORATIVE FAMILY (EVAF)		DISPLACEMENT (L)			
1	2TWC, 2HAFS, 2HO2S, SFI, OBD(P)		BRIIF0265LPG		5.4			
*	-		BRII0265LPG					
*	-		-					
*	-		-					

See the Attachment for Vehicle Models, Evaporative Family, Engine Displacement, Emission Control Systems, Phase-In Standards, OBD Compliance, Emission Standards and Certification Levels, and Abbreviations.

BE IT FURTHER RESOLVED:

That the exhaust and the evaporative emission standards and the certification emission levels for the listed vehicles are as listed on the Attachment. Compliance with the 50° Fahrenheit testing requirement may have been met based on the manufacturer's submitted compliance plan in lieu of testing. Any debit in the manufacturer's "NMOG Fleet Average" (PC or LDT) or "Vehicle Equivalent Credit" (MDV) compliance plan shall be equalized as required.

BE IT FURTHER RESOLVED:

That for the listed vehicle models, the manufacturer has attested to compliance with Title 13, California Code of Regulations, (13 CCR) Sections 1965 [emission control labels], 1968.2 [on-board diagnostic, full or partial compliance], 2035 et seq. [emission control warranty], 2235 [fuel tank fill pipes and openings] (gasoline and alcohol fueled vehicles only), and "High-Altitude Requirements" and "Inspection and Maintenance Emission Standards" (California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model PC, LDT and MDV).

BE IT FURTHER RESOLVED:

The test group listed in this Executive Order is certified conditionally on the manufacturer providing test data to determine the greenhouse gas (GHG) emissions for the listed test group, expressed in grams per mile of carbon dioxide-equivalent (g/mi CO₂-e), as required in section E.2.5.2 of the California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, as amended August 4, 2005 (the Test Procedures). Manufacturer shall provide the required data within 45 days after the date of the Executive Order unless (a) an extension is granted by the Executive Officer, or (b) the manufacturer demonstrates to the satisfaction of the Executive Officer that it is exempt from determining GHG emissions for the listed test group under section E.2.5.3 (Intermediate Volume Manufacturers) or E.2.5.4 (Small Volume Manufacturers) of the Test Procedures. Failure to comply with the certification requirement to determine the GHG emissions for the listed test group may be cause for the Executive Officer to revoke the Executive Order. Vehicles in the revoked Executive Order shall be deemed uncertified and subject to penalties authorized under California law. Notwithstanding the requirement therein, the manufacturer is not required to determine GHG emissions for any medium-duty vehicles in the listed test group that are not medium-duty passenger vehicles.

Vehicles certified under this Executive Order shall conform to all applicable California emission regulations.

The Bureau of Automotive Repair will be notified by copy of this Executive Order.

Executed at El Monte, California on this 18 day of March 2011.

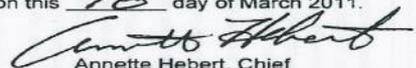

 Annette Hebert, Chief
 Mobile Source Operations Division

Figure 4: An example of a California Air Resources Board approval certificate for Roush Industries *Image from Roush Industries*

VENDORS: Ongoing Maintenance and Support

Warranty

Work Directly with an OEM

Use a qualified system retrofitter

Service and Maintenance

Request a List of Equipment Installed on Vehicle

Know and Adhere to Inspection Requirements

Understand how the system works, how it impacts OEM warranty and how to find continued support.

Topics

1 The VW Opportunity

2 Definitions

3 Vehicle Considerations

4 Stations and Vendors

5 Technical Assistance Options

Technical and Problem Solving Assistance



We capture lessons learned and best practices, and can:

- Address permitting & safety issues
- Identify chronic vehicle or infrastructure field problems
- Help with incident investigations



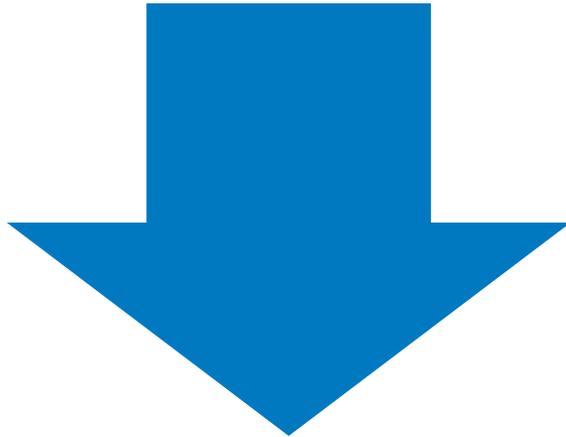
Technical Response Service

- Research and respond to general and technical inquiries
- Provide expert, reliable, vetted resources via email
- Email TechnicalResponse@icf.com or call **800-254-6735** with questions
- 48-hour standard response time (indicate if you need it sooner)



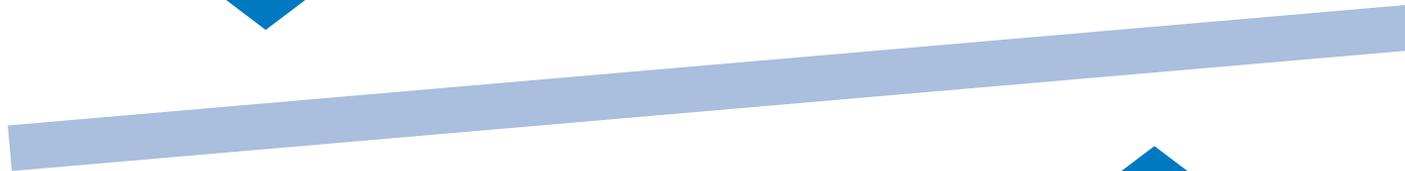


Tiger Teams



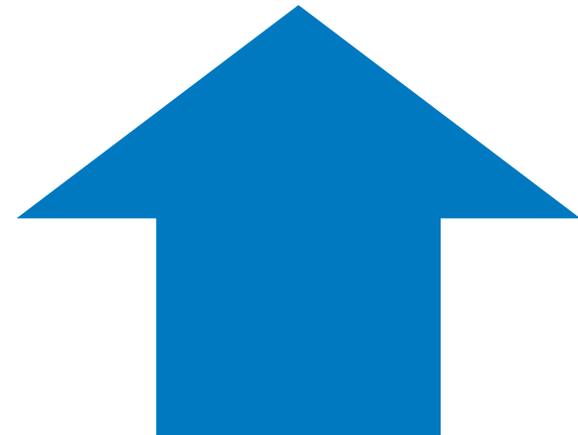
Proactive:

- Filling resource and knowledge gaps based on what fleets are experiencing
- Providing expert information that allows projects to get started
- Working with industry to address common issues & avoid future incidents



Reactive:

- Getting stalled projects back on track
- Providing a neutral third-party perspective on conflicting information
- Investigating incidents to determine the root cause



Alternative Fuel Vehicle Conversions, Retrofits, and Repowers Handbook

- Released September 2017
- Involved extensive collaboration with fleets and industry
- Responds to recurring requests for help in understanding the different options available



What Fleets Need to Know About Alternative Fuel Vehicle Conversions, Retrofits, and Repowers



Questions?

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Thank you!