

# ERG DIESEL FUNDING OPTIMIZER



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Presented by  
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# INTRODUCTION

- ❑ Background – motivation for development
- ❑ Tool overview
- ❑ Applications
- ❑ Demonstration
- ❑ Future development opportunities



# BACKGROUND

- ❑ ERG has been talking to many states about implementation of the VW Settlement
- ❑ How to rank and select the best projects for funding?
- ❑ A tool is needed to assess NO<sub>x</sub> and other pollutant reduction potentials and cost-effectiveness
- ❑ Standard emissions modeling tools not specifically tailored to Settlement requirements



# DIESEL FUNDING OPTIMIZER OVERVIEW

- ❑ Excel-based screening tool for emission reductions and cost-effectiveness
- ❑ Designed specifically for assessing Appendix D measures and funding restrictions
  - All on-road categories
  - MOVES-based on-road emission factors - NO<sub>x</sub>, PM, CO<sub>2</sub>
  - Covers 10 year settlement timeframe
  - Integrates elements from DEQ and AFLEET model
- ❑ Simple GUI
- ❑ Easy to update emission factor tables



# POTENTIAL APPLICATIONS

- ❑ Provides consistent method for scoring applications
  - ❑ Batch mode allows for up to 50 scenarios simultaneously
  
- ❑ Allows for identification/fine-tuning of reimbursement and cost-share targets
  
  
- ❑ Provides assessment of co-benefits (PM, CO<sub>2</sub>)



# DEMONSTRATION

## Diesel Funding Optimizer Inputs

ERG DFO - BETA VERSION 1.1



Select/input your values for calculation.

Select the calendar year of the mitigation action(s).

1. Calendar year start date
2. Vehicle/engine ownership

### Current Vehicles

Enter details on the existing vehicles or engines that will be replaced or repowered.

3. Vehicle/engine categories
- Operation type  Non-government Class 8 trucks only
4. Engine model year
5. Annual mileage/truck (mi)
6. Remaining life (yrs)
7. Number of vehicles/ engines to be replaced or repowered

Clear



# DEMONSTRATION

## Replacement/Repowered Vehicles

*Enter details regarding the new vehicles or engines that you plan to purchase. You may enter up to 3 different scenarios for comparison, or you may import a batch file with up to 50 scenarios using the Import function.*

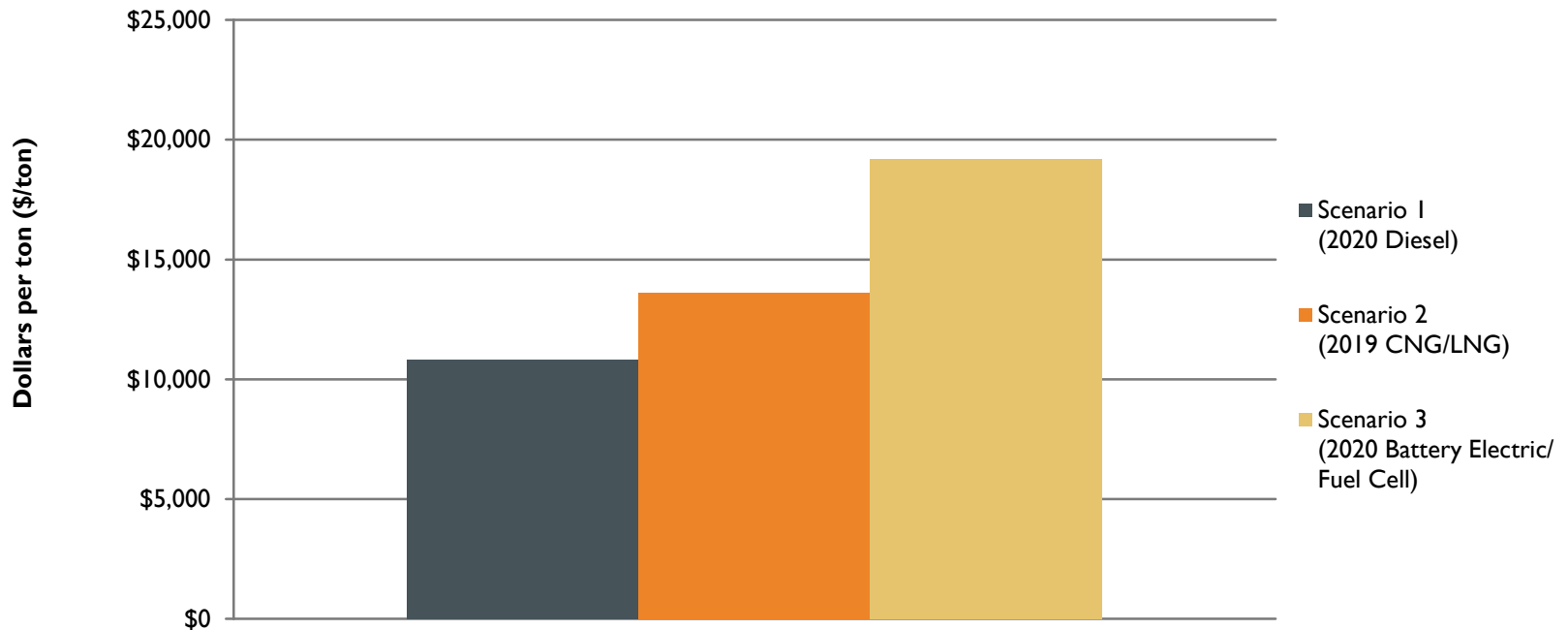
8. Repower or replace	<input type="text" value="Replace"/>		
9. Scenario entry	<input type="text" value="On screen"/>		
	<b>Scenario 1</b>	<b>Scenario 2</b>	<b>Scenario 3</b>
10. Fuel/technology type	<input type="text" value="Diesel"/>	<input type="text" value="CNG/LNG"/>	<input type="text" value="Electric/ Fuel Cell"/>
11. Engine model year	<input type="text" value="2020"/>	<input type="text" value="2019"/>	<input type="text" value="2020"/>
12. Cost per unit (\$)	\$ <input type="text" value="100,000"/>	\$ <input type="text" value="130,000"/>	\$ <input type="text" value="185,000"/>
13. Applicant cost-share (%)	<input type="text" value="75"/> %	<input type="text" value="75"/> %	<input type="text" value="75"/> %
	<input type="button" value="Clear"/>	<input type="button" value="Clear"/>	<input type="button" value="Clear"/>

13. Run scenarios



# DEMONSTRATION

## NOx Lifetime estimated cost-effectiveness (\$/ton) compared to the current vehicles/engines, 2021 - 2024\*



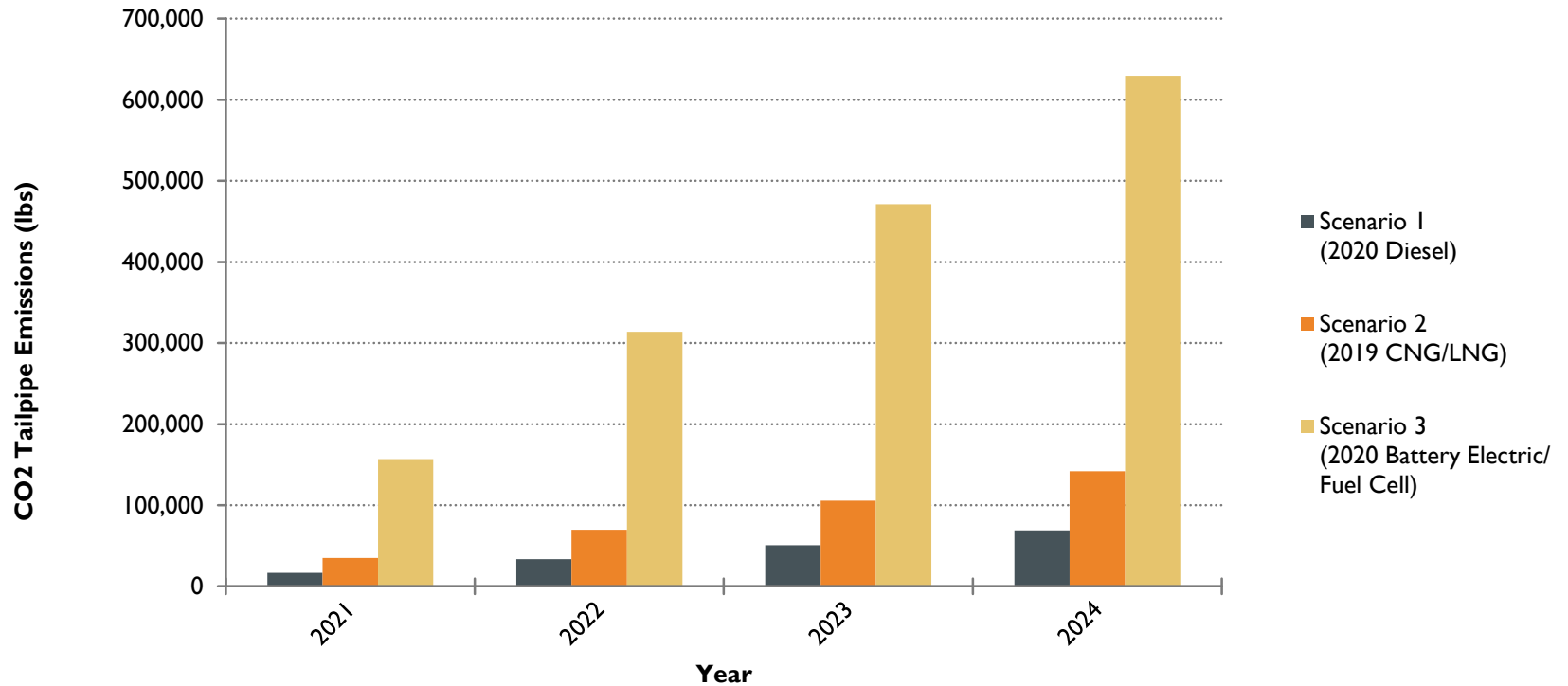
\*Does not account for incremental operation and maintenance, or other costs.





# DEMONSTRATION

## Cumulative CO2 Tailpipe Emissions (lbs) Reductions Compared to Current Vehicles/Engines Over Time





## NEXT STEPS

- ❑ Beta-test version currently available
- ❑ Multiple opportunities for expanded functionality
  - Expand to nonroad options
  - Incorporate full well-to-wheels emission factors
  - Extend batch mode processing capabilities
  - Develop online version for fleet pre-screening of scenarios
  - Expand cost analysis – e.g. address O&M, apply basic cost validation criteria



# CONTACT INFORMATION

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