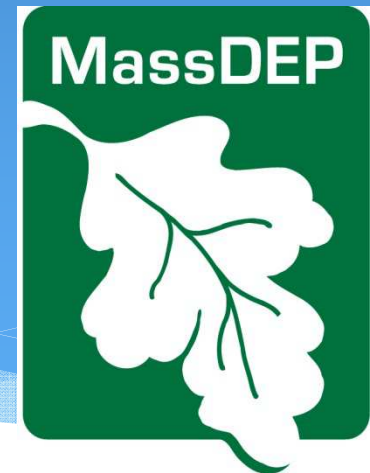


The Volkswagen Settlement and Development of the Massachusetts Beneficiary Mitigation Plan

Massachusetts Department of
Environmental Protection

February 2018 - Updated



Agenda

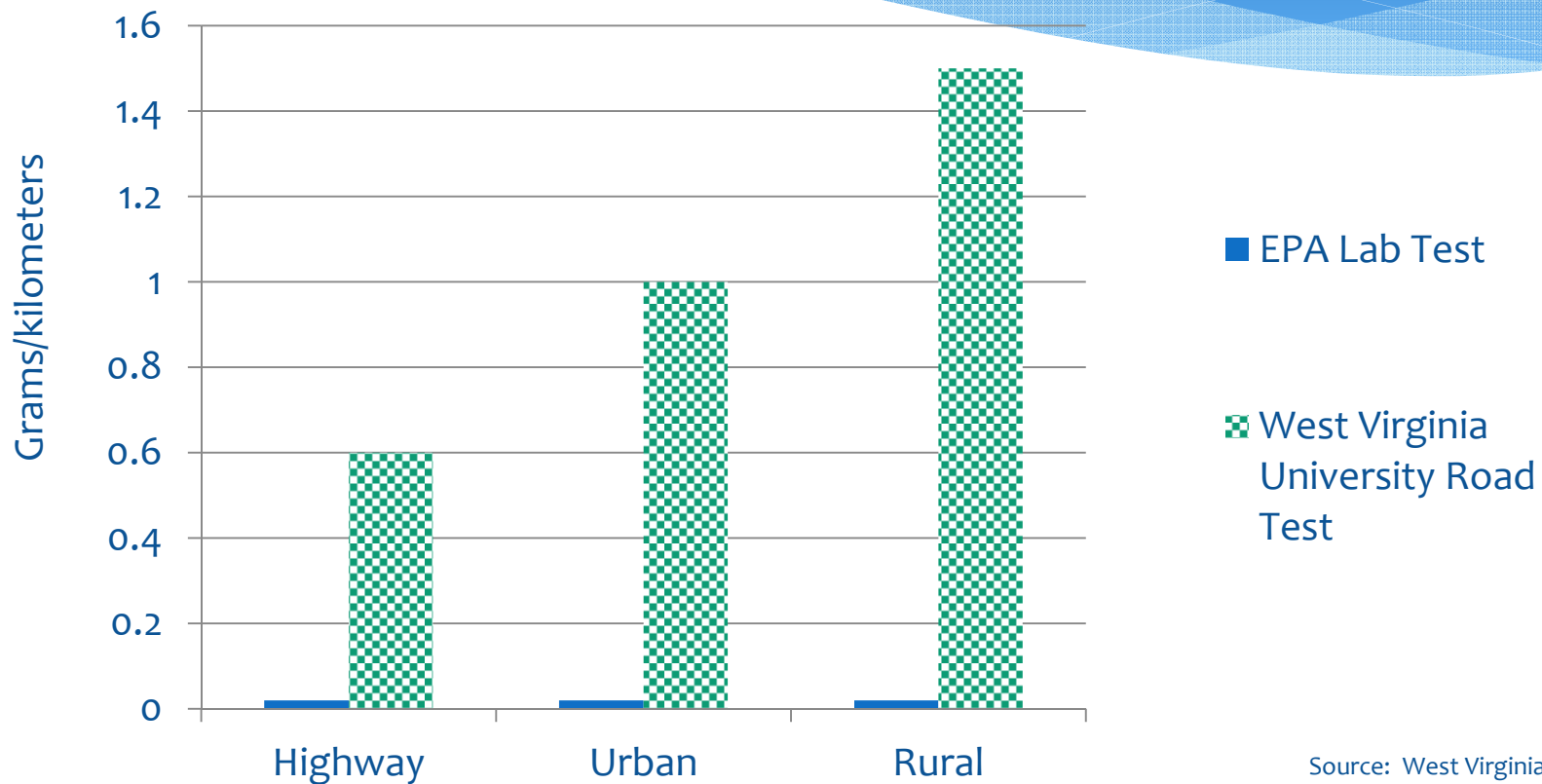
- ❑ Background
- ❑ NOx Impact and MA Emission Inventory
- ❑ Beneficiary Mitigation Plan (BMP)
- ❑ Eligible Mitigation Actions (EMAs)
- ❑ Inventory of MA Diesel Engines & MassDEP Projects
- ❑ Massachusetts' Interests
- ❑ Stakeholder Input
- ❑ Next Steps



VW's Violations

- 2004** Phase in of stronger emission standards for nitrogen oxides (NOx) begins
- 2009** VW begins installing defeat devices on diesel vehicles for next seven model years
- 2014** Researchers find “**significantly higher** in-use emissions” than certified levels for 2012 Jetta TDI
- 2015** VW admits altering vehicles

2014 VW Jetta Test Results (NOx Emissions)



Source: West Virginia University

Affected Vehicles

- **11 million vehicles worldwide**
- **590,000 2.0 & 3.0 liter engines in US**
- **MY 2009 – 2016**
- **Owned and leased**
- **14,000+ in MA**



Audi



PORSCHE



VW Settlement Terms



Dollars
(In Billions)

MA's Share & Obligations

- ✓ \$75 million from VW Settlement held in Trust
- ✓ Spend \$ on variety of projects that reduce NOx
- ✓ Develop Beneficiary Mitigation Plan (BMP)

A logo consisting of the letters "BMP" in a bold, green, sans-serif font. The letters are enclosed within a blue rounded rectangular border. The background of the slide features a blue header and a wavy blue pattern at the bottom.

BMP

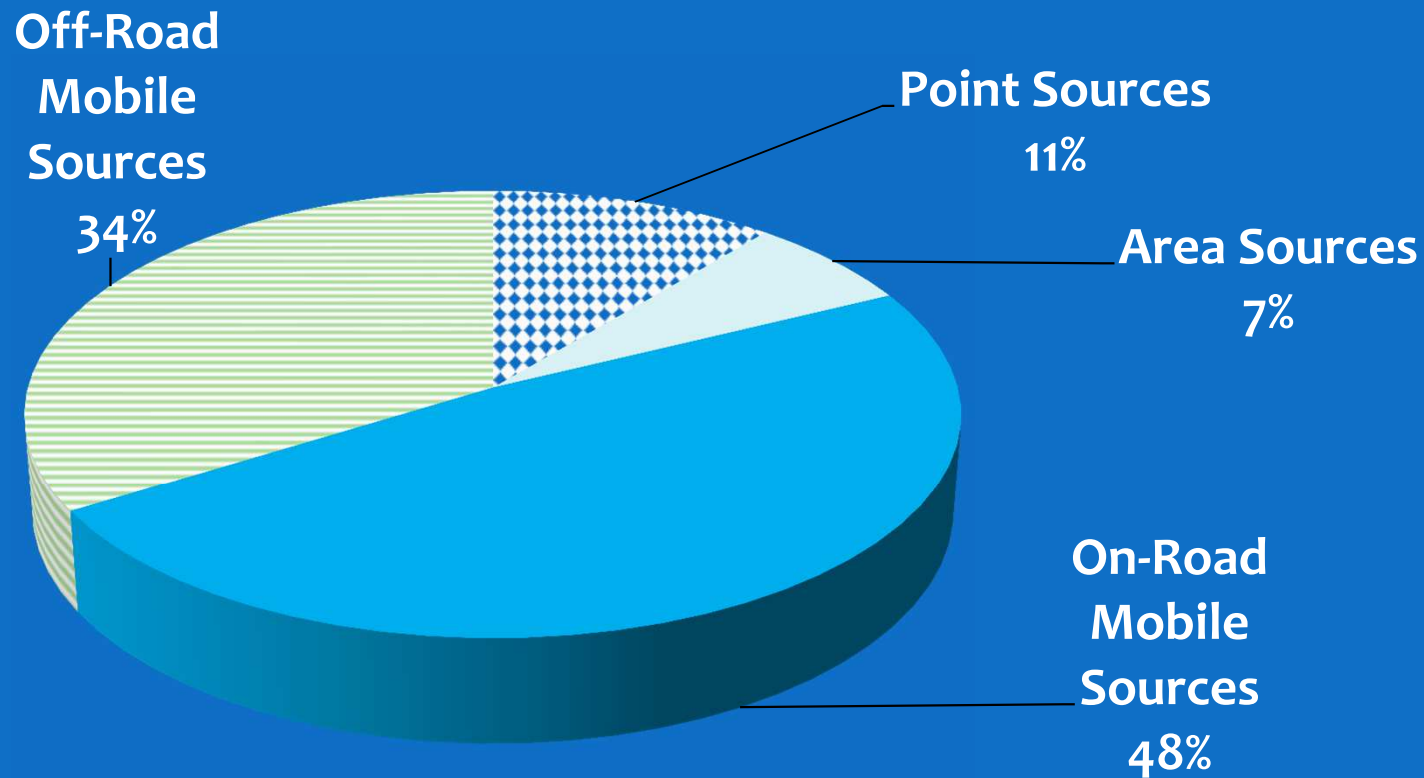
Effects of Excess NOx Emissions

NOx—

- * Helps form ground level ozone and fine particulate matter (PM) – linked to **respiratory & cardiovascular problems**
- * Aggravates respiratory diseases
- * Contributes to **global warming, acid rain & nutrient overloading** in waterways



MA NO_x 2011 Summer Day Emissions (385 Tons Per Day)



Source: MassDEP

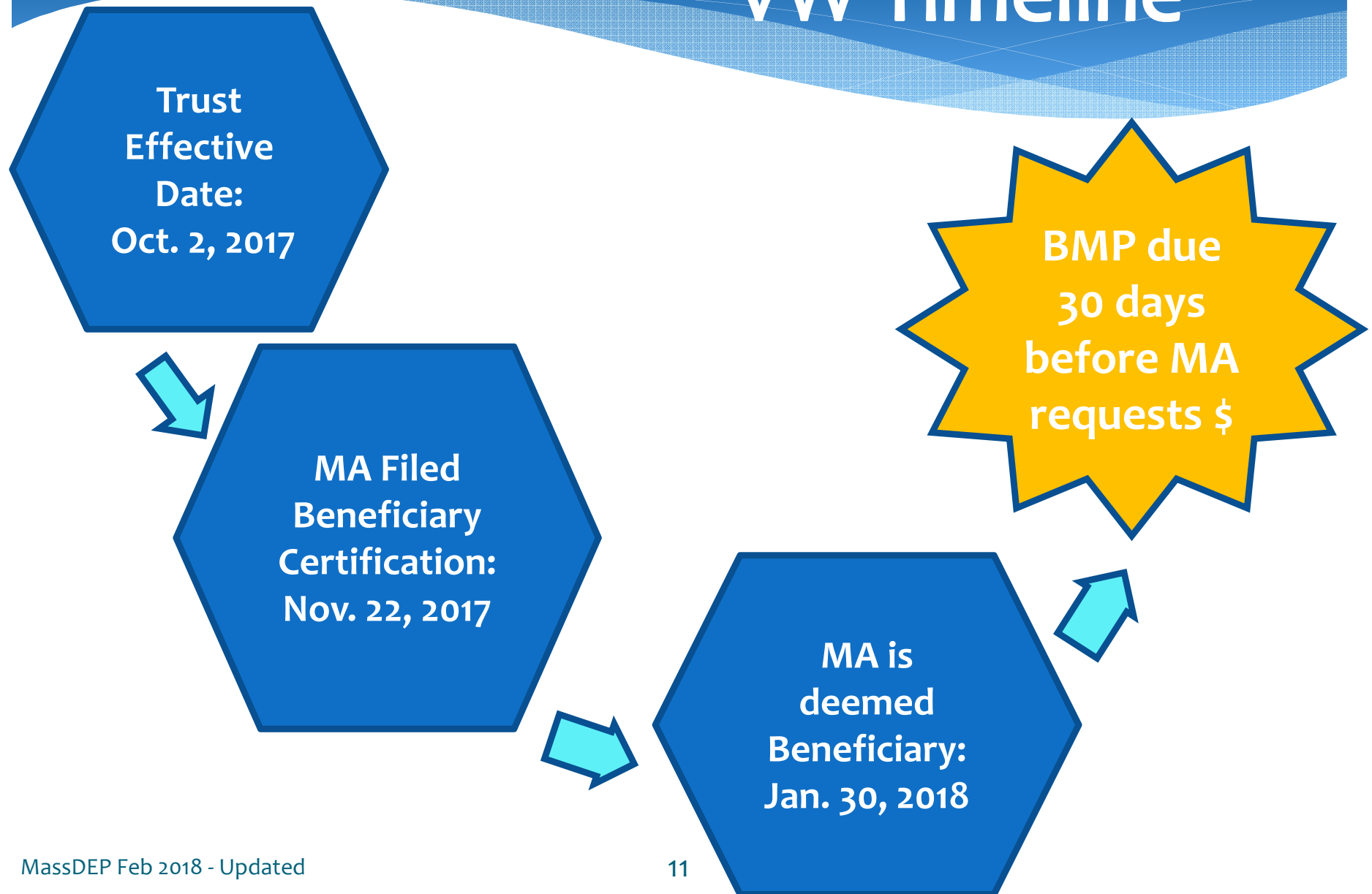
Beneficiary Mitigation Plan



MA BMP must cover:

- ✓ Overall goal for use of funds
- ✓ Categories of planned Eligible Mitigation Actions (EMAs) (see Appendix D-2)
- ✓ Range of expected NO_x emissions reductions
- ✓ Impact of EMAs on air quality in MA areas bearing disproportionate share of air pollution
- ✓ Public input process

VW Timeline



Funding Timeline Possibilities

- ✓ 10 years to spend 80% of funding (\$60 m) + another five years to spend remaining 20% (\$15 m)
- ✓ Option to spend 1/3 of funding (\$25 million) in 1st year & up to 2/3 in first two years (\$50 million)



Eligible Mitigation Actions (EMAs)

1. Large Freight & Port Drayage Trucks
2. School/Shuttle/Transit Buses
3. Freight Switchers
4. Ferries/Tugboats
5. Shore Power for Ocean Going Vessels (OGV)
6. Medium Local Freight Trucks
7. Airport Ground Support Equipment (GSE)
8. Forklifts & Port Cargo Handling Equipment (CHE)
9. Light Duty Zero Emission Vehicle Supply Equipment (EVSE)
10. Diesel Emissions Reduction Act (DERA) Option

[Appendix D-2: https://www.vwcourtsettlement.com/wp-content/uploads/documents/DOJ/Approved%20Appendix%20D-2.pdf](https://www.vwcourtsettlement.com/wp-content/uploads/documents/DOJ/Approved%20Appendix%20D-2.pdf)

Technology Options

- * Repower w/new diesel, alternate fueled (AF) or electric engine
- * Replace w/new diesel, AF or all electric vehicle/equipment
- * Shore power alone (for ocean going vessels only)



Alternate Fueled Vehicle

Vehicle that uses fuel different from or in addition to gas or diesel

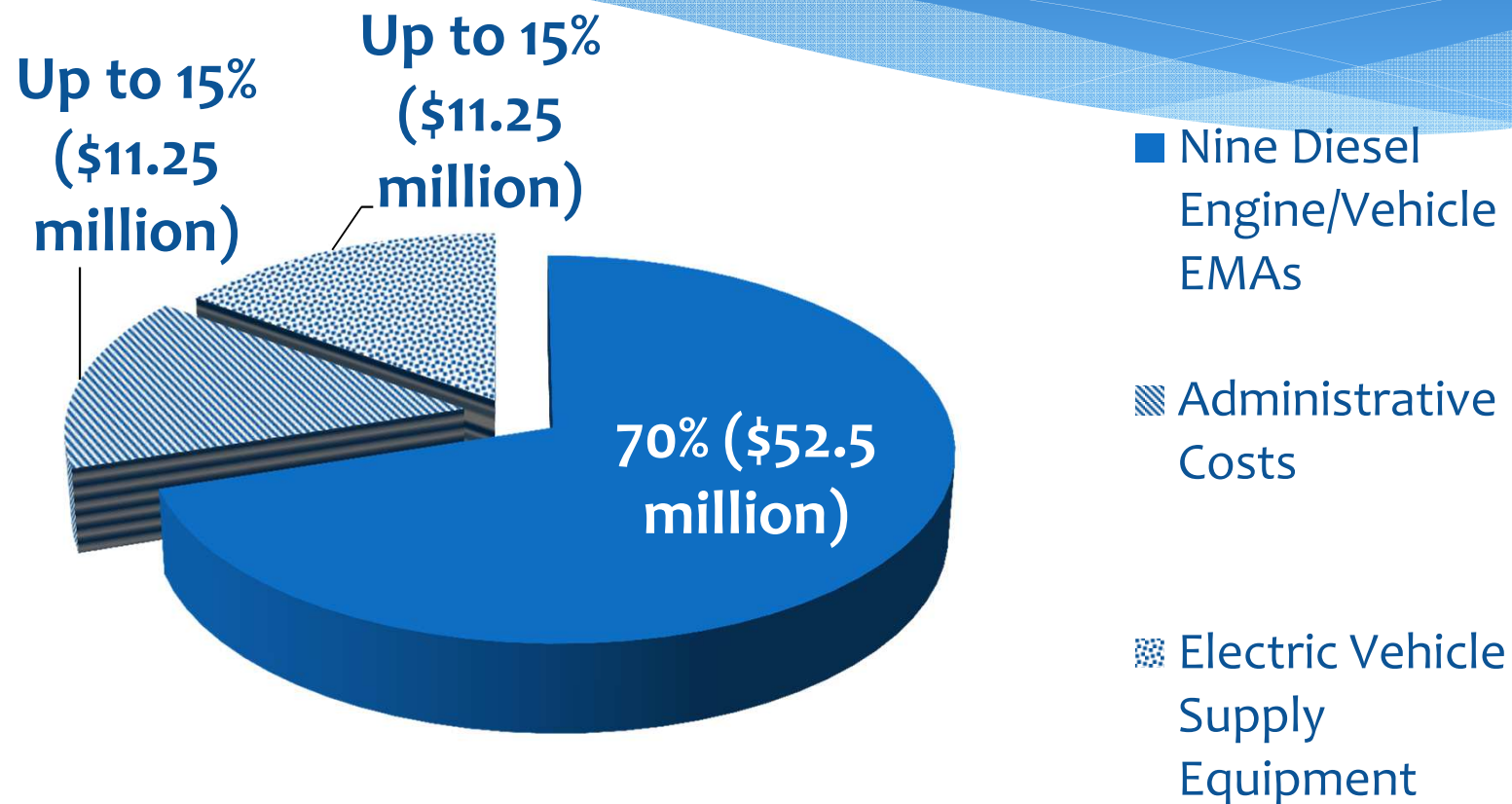
Examples: CNG, propane, diesel electric hybrid



Funding

- Government owned: up to 100% funded
- Non-government owned: varies
- Agency discretion
- Repower or replace w/new diesel or AF engine/vehicle/equipment: \$ covers purchase & installation of engine
- Repower or replace w/all-electric engine/vehicle/equipment: \$ covers purchase & install of engine and charging infrastructure (electric & hydrogen fuel)

Funding Categories



Scrappage Requirements

- * All EMAs except OGV shore power & EVSE
- * Drill 3-inch hole in engine block
- * Dispose of hazardous liquids in compliance w/ local, state, federal regulations
- * If replacing vehicle or equipment, disable chassis



Source: MassDEP

#1. Large Local Freight & Port Drayage Trucks

Eligible Engines/Vehicles:

- ✓ MY 1992-2009 engines
- ✓ 33,001 lbs. or more GVWR (Class 8)
- ✓ Operate in MA



Technology Options	Maximum Funding %	
	<i>Gov't</i>	<i>Non-Gov't</i>
Repower w/new diesel or AF engine	100%	40%
Replace w/new diesel or AF vehicle	100%	25% (50% for drayage)
Repower w/new all-electric engine *	100%	75%
Replace w/new all-electric vehicle *	100%	75%

* Includes purchase & installation of electric charging & fuel cell infrastructure

#2. School, Shuttle and Transit Buses

Eligible Engines/Vehicles:

- ✓ MY 2009 or older engines
- ✓ 14,001 lbs.+ (Class 4-8)
- ✓ Gov't. includes school buses contracting w/public school district



Technology Options	Maximum Funding %	
	Gov't	Non-Gov't
Repower w/new diesel or AF engine	100%	40%
Replace w/new diesel or AF vehicle	100%	25%
Repower w/new all-electric engine *	100%	75%
Replace w/new all-electric vehicle *	100%	75%

* Includes purchase & installation of electric charging & fuel cell infrastructure

#3. Freight Switchers

Eligible Switchers:

- ✓ Pre-Tier 4 engines (MY 2014 & older)
- ✓ Operate $\geq 1,000$ hrs./year



Technology Options	Maximum Funding %	
	Gov't	Non-Gov't
Repower w/new diesel or AF engine or Gen Set	100%	40%
Replace w/new diesel or AF switcher or Gen Set	100%	25%
Repower w/new all-electric engine or Gen Set *	100%	75%
Replace w/new all-electric switcher, incl. Gen Set *	100%	75%

* Includes purchase & installation of electric charging & fuel cell infrastructure

#4. Ferries and Tugs

Eligible Engines:

- ✓ Unregulated, Tier 1 and Tier 2 marine engines



Technology Options	Maximum Funding %	
	Gov't	Non-Gov't
Repower w/new Tier 3 or 4 diesel or AF engine	100%	40%
Repower w/new all-electric engine *	100%	75%

* Includes purchase & installation of electric charging & fuel cell infrastructure

#5. Shore Power for Ocean Going Vessels

Eligible Systems Must:

- ✓ Comply w/international shore power design standards
- ✓ Source power from local grid



Technology Option	Maximum Funding %	
	<i>Gov't</i>	<i>Non-Gov't</i>
Shore-side power system	100%	25%

#6. Medium Local Freight Trucks

Eligible Engines/Vehicles:

- ✓ MY 1992-2009 engines
- ✓ 14,001 – 33,000 lbs. (Classes 4-7)
- ✓ Operate in MA



Technology Options	Maximum Funding %	
	Gov't	Non-Gov't
Repower w/new diesel or AF engine	100%	40%
Replace w/new diesel or AF vehicle	100%	25%
Repower w/new all-electric engine *	100%	75%
Replace w/new all-electric vehicle *	100%	75%

* Includes purchase & installation of electric charging & fuel cell infrastructure

#7. Airport Ground Support Equipment (GSE)

Eligible Engines/Equipment:

- ✓ Tier O, Tier 1 or Tier 2 diesel engines
- ✓ Uncertified, or certified to ≥ 3 g/bhp-hr, spark ignition engines



Technology Options	Maximum Funding %	
	Gov't	Non-Gov't
Repower w/new all-electric engine *	100%	75%
Replace w/new all-electric equipment *	100%	75%

* Includes purchase & installation of electric charging & fuel cell infrastructure

#8. Forklifts and Port Cargo Handling Equipment (CHE)

Eligible Engines/Equipment:

- ✓ >8,000 lbs. lift capacity forklifts and CHE
- ✓ CHE operate at ports



Technology Options	Maximum Funding %	
	Gov't	Non-Gov't
Repower w/new all-electric engine *	100%	75%
Replace w/new all-electric equipment *	100%	75%

* Includes purchase & installation of electric charging & fuel cell infrastructure

#10. Diesel Emissions Reduction Act (DERA) Option

- Use \$ for projects not allowed by VW but eligible under DERA

Examples: Repowers, replacements, retrofits, verified idle reduction, low resistance tires, engine upgrades & other technologies

- See Environmental Protection Agency (EPA) webpage:
<https://www.epa.gov/sites/production/files/2017-01/documents/vw-dera-option-eligible-mitig-compar-2017-01.pdf>

#9. Light-Duty Zero Emission Vehicle Supply Equipment (EVSE)

- ✓ Level 1, Level 2 or Fast Charging EVSE in public place, workplace or multi-unit dwelling (MUD)
- ✓ Light-duty hydrogen fuel cell EVSE



Source: MassDEP

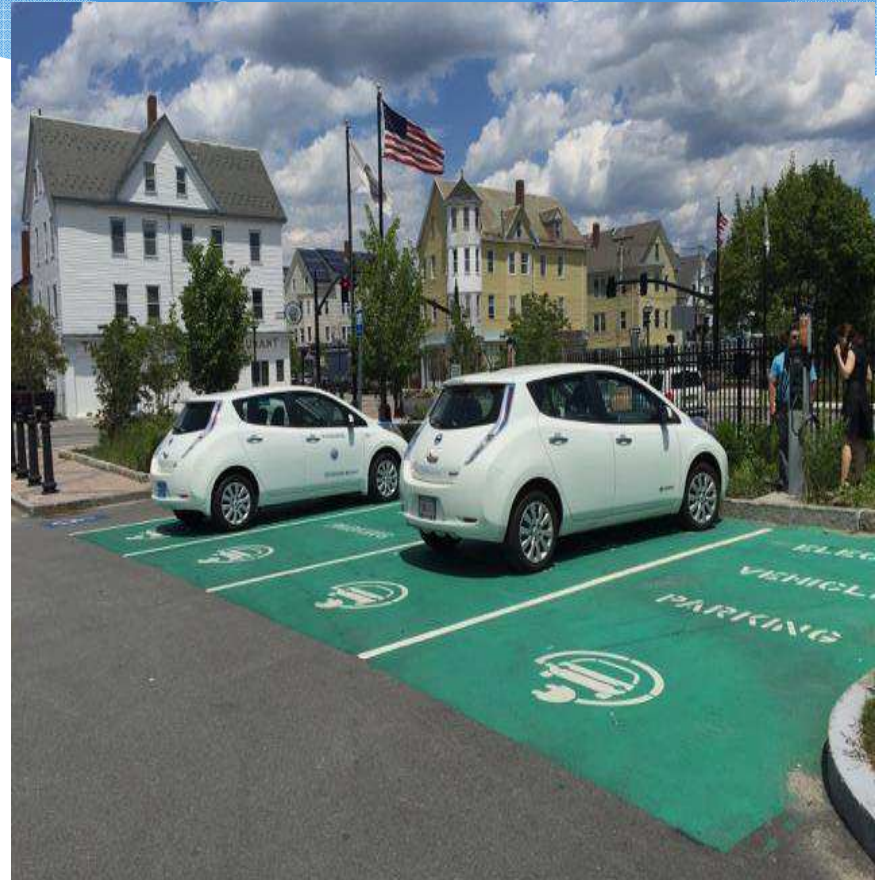
Zero Emission EVSE

Technology Options	Maximum Funding %
EVSE	
- Public use at gov't owned property	100%
- Public use at non-gov't property	80%
- At workplace but not for public use	60%
- At multi-unit dwelling but not for public use	60%
Hydrogen Fuel Cell EVSE	
- Public use & dispenses 250 kg/day	33%
- Public use & dispenses 100 kg/day	25%

Current MA EVSE Projects

- 1) MassDEP Electric Vehicle Incentive Program (MassEVIP)
 - 480 private charging stations
 - 82 public charging stations
 - 311 street addresses

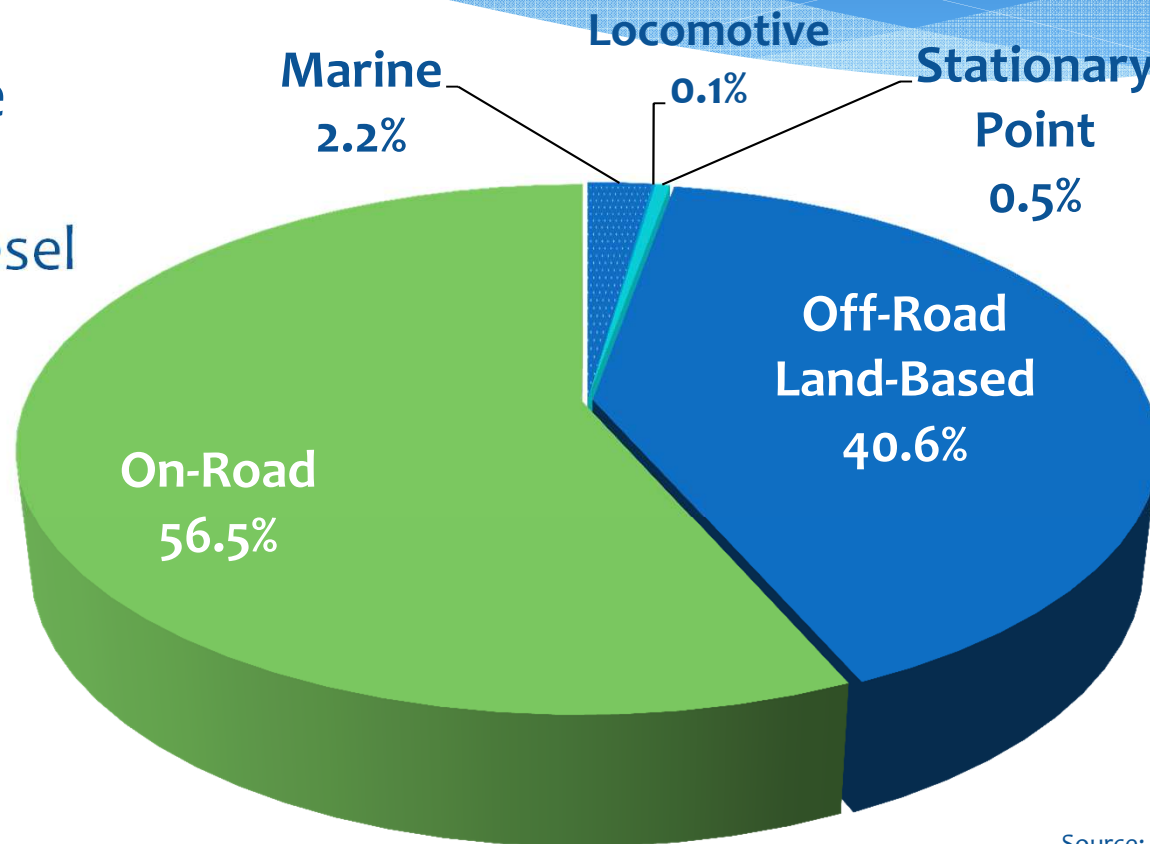
- 2) Mass Dept. of Transportation (MassDOT)
 - Installed 6 DCFCs on Mass Pike



Source: MassDEP

MA-Registered Diesel Engines in 2016 (258,352)

Based on the
most recent
MassDEP Diesel
Emissions
Inventory



Source: MassDEP

Past MassDEP Replacement Projects



Source: MassDEP

- AF Vehicle Replacements
- Replaced 11 diesel trucks w/diesel-hybrid trucks for \$401K
- Scrapped old vehicles

Past MassDEP Repower Projects

New engines in 18 MBTA
Head End Power (HEPs)
units for \$1.75 m



Source: MassDEP

Repowered 1 construction
engine for \$21K



Source: MassDEP

Massachusetts' Interests

- Consider all EMAs
- Use up to 15% of \$ to develop EV-charging infrastructure to promote electric vehicles
- Use up to 15% for administrative costs if paired w/EMA
- Fund projects that “electrify” transportation system
- Focus on areas serving Environmental Justice (EJ) populations
- Geographic distribution

Next Steps

* Hold additional stakeholder meetings

MassDEP Southeastern Office, Jan. 29, 1-3 pm

Brockton Public Library, Brockton, Jan. 29, 5:30-7:30 pm

DEP Northeast Office, Wilmington: Feb. 12, 2-4 pm

UMass Lowell Recreation Center, Lowell: Feb. 12, 6-8 pm

MassDEP Headquarters, Boston: Feb. 15, 1-3 pm & 6-8 pm

MassDEP Central Office, Worcester: Feb. 27, 1-3 pm & 6-8 pm

Holyoke Community College, Holyoke: Rescheduled to Mar. 8, 2018,
2-4 pm & 5:30-7:30 pm

Next Steps (Cont.)

- Issue Request for Information (RFI)
- Submit BMP to Wilmington Trust
- **SUBMIT COMMENTS/PROPOSALS TO:**
 - 1) MassDEP's webpage at:
<https://www.mass.gov/guides/volkswagen-diesel-settlements-environmental-mitigation>
 - OR
 - 2) vw.settlement@state.ma.us

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