# 2016 CMAQ Grant Funding Opportunity



### What is CMAQ?

- CMAQ: Congestion Mitigation & Air Quality
- Origin: Federal Highway Administration
  - Oklahoma Department of Transportation  $\rightarrow$  INCOG
- Only federal transportation funding established to address <u>Air Quality</u>
- Flexible funding source for state and local governments to fund transportation projects that will help meet the requirements of the Clean Air Act (CAA)
- Used to fund a variety of local projects aimed at mitigating traffic congestion and improving air quality
- A portion of our regional CMAQ allocation is reserved for alternative fuel vehicle conversion and infrastructure

### Goals

• Stimulate additional public/private sector investment in Alternative Fuel Vehicles (AFVs) and infrastructure

Further develop the AFV market in the INCOG region

• Reduce dependence on foreign oil

 Reduce air pollution from mobile source emissions, including hydrocarbons (specifically Volatile Organic Compounds), oxides of nitrogen (NOx), and carbon monoxide (CO)











**Air Pollution** 



### **Past Projects**

• Since 2010, funding has been awarded to 16 local governments or agencies



# **Basic Criteria**

- Must be a transportation project
- Must reduce emissions
- Must be in the Tulsa Transportation Management Area



# Requirements

- 20% minimum local matching funds
- Vehicle/Engine Retirement
  - Vehicle or engine replacement projects must retire the engine block or entire vehicle
- Visual Promotion
  - Visibly mark the project in such a way that promotes alternative fuels, clean air, and the Tulsa Area Clean Cities program.





- Approximately **\$240,000** is available under this solicitation.
  - INCOG anticipates making 5-8 awards.
  - A single application receiving the full amount is extremely unlikely, unless an extremely unique, innovative, and/or effective project is proposed.

### Requirements

- Vehicles providing a "dominant transportation function" are eligible for *up to* 80% funding (taking into account the 20% minimum local match).
  - Examples: school buses, paratransit vehicles, courtesy vans/tow trucks, incident management patrol vehicles, refuse haulers, and others.
  - <u>Vehicles not providing a dominant transportation function</u> are only eligible for CMAQ funding covering the <u>incremental cost</u> difference between a standard vehicle and an alternative fuel vehicle.

# **Eligible Projects: New Infrastructure**

#### New Alternative Fuel Refueling or Recharging Infrastructure

- Upgrades or maintenance of existing facilities are not eligible for CMAQ funding.
- All construction projects must comply with National Energy Policy Act (NEPA) requirements.



### **Eligible Projects: Vehicles**

#### **Dedicated Alternative Fuel Vehicles (AFVs)**

- All vehicle conversions must comply with applicable state and federal requirements governing vehicle conversion.
  - Documentation of compliance may be required prior to receiving reimbursement

#### Police Cruisers, Fire Trucks, and Transit Buses

Purchasing new police cruisers, fire trucks and buses is not eligible
Converting those vehicles to an alternative fuel source is eligible
Adding idle reduction equipment is eligible.



# **Eligible Projects: Equipment**

#### **Dedicated Alternative Fuel Off-Road Equipment**

• Eligible equipment includes electric, propane, or compressed natural gas commercial mowers, forklifts, aircraft tow motors, baggage handlers, etc.



# **Eligible Projects: Idle Reduction**

#### **Idle Reduction Technologies**

- Idle reduction technologies are available for police and fire vehicles, as well as work trucks, ambulances, and others.
  - These types of technologies allow the computers, lift arms, and other components of these vehicles to operate while the engine is off, saving fuel and reducing emissions.



# Scoring



# **Project Feasibility**



Project applicant must demonstrate ability to complete the proposed project. In addition, the proposal narrative should:

Demonstrate that the applicant has the financial means to carry out the project;

An administrative and management plan that includes identification of key personnel, milestones, and timelines;

Commitment from stakeholders affected by the project; relationships with key partners who may enhance the success of the project;

Long term goals of the project and how these goals fit into the goals of the organization(s) involved;

and a viable plan for long term utilization and maintenance of the proposed project.

# **Miles Traveled/Capacity/Idling**



Depending on the project type, the proposal will be scored on the following categories:

**a. Vehicle Replacements**: Alternative fuel vehicles which travel greater distances will produce more positive air quality and fuel displacement benefits than those that travel less miles when they replace a vehicle using petroleum fuels. Additional points will be awarded for higher mileage vehicles.

**b.** Alternative Fueling Infrastructure: The project will be evaluated on its potential to expand access to alternative fueling infrastructure. Projects which bring a new fuel type to an area, or fill in a gap in fueling infrastructure.

**c. Idle Reduction**: Vehicles with significant daily idling time are the best candidates for idle reduction technologies. Vehicles with longer idle times will receive higher scores.

## **Project Visibility / Awareness**



One of the best ways to promote the use of alternative fuel vehicles is to have them prominently displayed and used in public. In this way the vehicles are seen as workable, practical, and tangible in the same manner as conventional vehicles.

Proposals should include a plan to increase the visibility of the project. Vehicle wraps, press releases, case studies, and speaking at Clean Cities meetings are great ways to promote these projects to peer groups and other local entities.



# **Air Quality / Energy Conservation**



Vehicle/fuel combinations will be prioritized based on the amount of air quality and energy conservation benefits expected by the vehicle compared to the incremental cost of the vehicle.

Factors impacting air quality and energy conservation benefits include fuel type, vehicle miles traveled, fuel economy, and emissions reductions.



### Innovation



Proposals dramatically improving air quality and/or demonstrating an innovative and effective approach to improving air quality will be eligible for additional points under this category.



# **Geographic Distribution**



It is the intention of INCOG to ensure funding is distributed widely within the Transportation Management Area. Therefore, applications will be reviewed based on the degree to which the project contributes to geographic distribution and avoids concentration in a small geographic area.



**Tulsa Transportation Management Area** 

## **Matching Funds**



In order to maximize the effectiveness of these funds, points will be awarded to applications providing local matching funds higher than the 20% minimum.







# https://greet.es.anl.gov/

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Vehicles	^	5	N		CAL SITTLY	Les Cassine and Les			•	2015				
CA Reformulated Gasoline		ruer biena.			Electricity	ated Gasoline	1	arget Tear for Simulat						
Renewable Diesel II					CA Reformu	ated Gasoline	Т	arget Year for Vehicle	Technology	2010				
Renewable Gasoline		Functi	ional unit:		○/MJ ○/100 km ●/mi ○/ton mi ○/ton ne km ○/oassenger mi ○/bassenger km									
E10							0	0,		2				
🔂 Liquid Hydrogen														
Low-Sulfur Diesel							Non-Exhaust	Operation						
E85			Name	WTP	Mode - cd	Mode - cs	Emissions	Only	WTW	Components	ADR	Fluids		
Electricity		•	Total Energy	1171 kJ/mi	622.95 kJ/mi	1624 kJ/mi		2247 kJ/mi	3418 kJ/mi	0 J/mi	0 J/mi	0 J/mi		
Car: SI PHEV - EtOH and Electricity			Eccel Eucl	2054 k 1/mi	0.1/mi	0.1/mi		0.1/mi	2054 k l /mi	0.1/mi	0.1/mi	0.1/mi		
Car: ECV PHEV - Liquid H2 and Electricity		_	russi ruei	3034 K3/III	0.0/11	0.0/11		0.07111	3034 K0/III	0.0/11	0.0/11	0.0/11		
Car: FCV PHEV - Gaseous H2 and Electricity		_	Coal Fuel	//4.//kJ/mi	0 J/mi	0 J/mi		0 J/mi	//4.//kJ/mi	0 J/mi	0 J/mi	0 J/mi		
Commuter Bails: ETD + Electricity			Natural Gas Fuel	636.12 kJ/mi	0 J/mi	0 J/mi		0 J/mi	636.12 kJ/mi	0 J/mi	0 J/mi	0 J/mi		
Intercity Rails: H2 + Electricity			Petroleum Fuel	1643 kJ/mi	0 J/mi	0 J/mi		0 J/mi	1643 kJ/mi	0 J/mi	0 J/mi	0 J/mi		
Refuse Trucks: Electricity - US Mix			Water Reservoir	490.87 cm^3/mi					490.87 cm^3/mi					
Car: SI PHEV - LPG and Electricity			Water Intention	117.02 ^2 /:					117.02 ^2 /:					
SUV: SI PHEV - E10 and Electricity (Type			water_inigation	117.32 Cm 3/m					117.32 Cm 3/m					
Car: CIDI PHEV - FTD and Electricity			Water_Cooling	287.11 cm^3/mi					287.11 cm^3/mi					
SUV: SI PHEV - E10 and Electricity (Type			Water_Mining	166.71 cm^3/mi					166.71 cm^3/mi					
Car: EV - Electricity (Type 1 Li-Ion/LMO Lig			Water Process	71.03 cm^3/mi					71.03 cm^3/mi					
Car: CIDI PHEV - DME and Electricity			- V0C	57 30 mg/mi	21.03.ug/mi	36.44 mg/mi		36.46 mg/mi	93 75 mg/mi					
Commuter Rails: LNG + Electricity		_	100	57.50 mg/mi	21.03 0g/11	30.44 mg/mi		30.40 mg/m	33.73 mg/mi					
Commuter Rails: Electricity			CO	62.18 mg/mi	0.78 mg/mi	1.36 g/mi		1.36 g/mi	1.42 g/mi					
Car: SI PHEV - E10 and Electricity (Type 1			NOx	0.20 g/mi	29.17 ug/mi	50.54 mg/mi		50.57 mg/mi	0.25 g/mi					
Car: CIDI PHEV - RD from Pyrolysis and El			PM10	37.13 mg/mi	1.56 ug/mi	2.71 mg/mi		2.71 mg/mi	39.84 mg/mi					
Lar: CIDI PHEV - E-Diesel and Electricity			PM2.5	21.95 mg/mi	1.38 ug/mi	2 40 mg/mi		2 40 mg/mi	24.35 mg/mi					
Commuter Paile: PG + Electricity			20.	0.01 - (	Olym (m)	0.1		Olya (m)	0.01 - (:					
Car: CIDI PHEV - I S Diesel and Electricity			SUX	0.31 g/mi	U Kg/mi	U Kg/mi		u kg/mi	0.31 g/mi					
Intercity Rails: ETD + Electricity			CH4	0.27 g/mi	1.17 ug/mi	2.04 mg/mi		2.04 mg/mi	0.28 g/mi					
Car: SI PHEV - I NG and Electricity			CO2	0.12 kg/mi	94.16 mg/mi	0.12 kg/mi		0.12 kg/mi	0.24 kg/mi					
Light Transit Rail Rails: Electricity			N2O	6.02 mg/mi	2.20 ug/mi	3.82 mg/mi		3.82 mg/mi	9.84 mg/mi					
SUV: EV - Electricity (Type 1 Li-lon/LMO C			BC	- 1.62 mg/mi	- 0.31 µg/mi	0.54 mg/mi		0.54 mg/mi	2 16 mg/mi					
HD Bus: Transit - Electricity			000	0.00 / 1	0.31 ( )	1.00 / .		1.04 / .	2.10 mg/m					
			PUC	13.38 mg/mi	10./1ug/mi	1.23 mg/mi	1	1.24 mg/mi	4.62 mg/mi	1				

#### **AFLEET Calculator** http://greet.es.anl.gov/afleet



#### AFLEET Calculator

#### http://greet.es.anl.gov/afleet

Lifetime Life-Cycle Petroleum Use and GHG Emissions - Refuse Truck Fleet



#### AFLEET Calculator http://greet.es.anl.gov/afleet

Lifetime Cost of Ownership Calculator Outputs - Costs

			Gasoline	Gasoline	Gasoline			Diesel							LNG / Diesel Pilot
	Gasoline	Diesel	HEV	PHEV	EREV	EV	Diesel HEV	HHV	B20	B100	E85	LPG	CNG	LNG	Ignition
Light-Duty Passenger Car Fleet															
Financing	\$0	\$0	\$0	\$0	\$0	\$0			\$0	\$0	\$0	\$0	\$0		
Depreciation	\$18,805	\$21,155	\$26,326	\$31,027	\$32,908	\$35,258			\$21,155	\$21,155	\$18,805	\$24,446	\$25,386		
Fuel	\$16,039	\$11,513	\$11,456	\$10,427	\$9,036	\$7,605			\$12,242	\$16,452	\$17,997	\$25,908	\$10,615		
Maintenance and Repair	\$31,424	\$42,363	\$30,401	\$29,831	\$29,831	\$27,689			\$42,363	\$42,363	\$31,424	\$31,424	\$31,424		
Insurance	\$17,709	\$17,709	\$17,709	\$17,709	\$17,709	\$17,709			\$17,709	\$17,709	\$17,709	\$17,709	\$17,709		
License and Registration	\$1,917	\$1,917	\$1,917	\$1,917	\$1,917	\$1,917			\$1,917	\$1,917	\$1,917	\$1,917	\$1,917		
Total Cost of Ownership	\$85,894	\$94,658	\$87,810	\$90,912	\$91,402	\$90,179			\$95,387	\$99,597	\$87,852	\$101,404	\$87,051		
Heavy-Duty Refuse Truck Fleet															
Financing		\$0				\$0	\$0	\$0	\$0	\$0			\$0	\$0	
Depreciation		\$208,375				\$664,817	\$257,989	\$248,066	\$208,375	\$208,375			\$257,989	\$248,066	
Fuel		\$817,013				\$507,555	\$653,611	\$712,048	\$868,705	\$1,167,442			\$700,285	\$700,285	
Diesel Exhaust Fluid		\$24,692				\$8,725	\$19,753	\$19,136	\$24,692	\$24,692			\$0	\$0	
Maintenance and Repair		\$2,308,601				\$2,259,081	\$2,274,257	\$2,274,257	\$2,308,601	\$2,308,601			\$2,320,582	\$2,320,582	
Insurance		\$175,001				\$175,001	\$175,001	\$175,001	\$175,001	\$175,001			\$175,001	\$175,001	
License and Registration		\$18,432				\$18,432	\$18,432	\$18,432	\$18,432	\$18,432			\$18,432	\$18,432	
Total Cost of Ownership		\$3,552,115				\$3,633,611	\$3,399,042	\$3,446,940	\$3,603,806	\$3,902,543			\$3,472,289	\$3,462,366	

Webinar: Fleet Trends and Best Practices of The Top 3 of The 100 Best Three emerging technologies will be discussed:

- One that activates anti-idling within 2 minutes (Used by the #1 in The 100 Best Fleets and the #1 in the Green Fleet A wards)
- A seldom used (*but very effective*) "utilization" tool that was part of a \$100 million grant
- A tool that returned a 400% return on investment for one fleet manager

The one-hour webinar is on Tuesday, June 28, 2016 at 1:00 p.m. Central

#### Register

https://attendee.gotowebinar.com/register/4943400255214368772

### **Questions?**



To ask a question, dial 1-914-614-3221 and enter Access Code: 431-826-701

Or type it into the Question panel on the right side of the screen

### **Thank You**



#### tulsacleancities.com

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