



**ROUND 1
FY 2012 ACOG PUBLIC FLEET
CONVERSION GRANTS**

**SOLICITATION ANNOUNCEMENT
GUIDELINES & ATTACHMENTS**

August 12, 2011

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**2011 SOLICITATION ANNOUNCEMENT
ASSOCIATION OF CENTRAL OKLAHOMA GOVERNMENTS (ACOG)
PUBLIC FLEET CONVERSION GRANTS**

PROGRAM POLICIES AND INFORMATION

BACKGROUND

The Congestion Mitigation and Air Quality (CMAQ) Improvement Program provides a flexible funding source for state and local governments to fund transportation projects and programs to help meet the requirements of the Clean Air Act (CAA) and its amendments. CMAQ money supports transportation projects that reduce mobile source emissions. Eligible activities include transit improvements, travel demand management strategies, traffic flow improvements, and public fleet conversions to cleaner fuels, among others.

CMAQ funds must be spent on projects that reduce ozone (O₃) precursors – volatile organic compounds (VOCs) and nitrogen oxides (NO_x); carbon monoxide (CO) or particulate matter (PM) from transportation sources. All projects must conform to established CMAQ guidance (see Federal Highway Administration, “Publication of Final Guidance on the Congestion Mitigation and Air Quality Improvement Program, [FHWA Docket No. FHWA-2006-26383], Federal Register Vol. 73, No. 203, October 20, 2008; pp. 62362–62379). An electronic version of the CMAQ guidance can be accessed at <http://www.gpo.gov/fdsys/pkg/FR-2008-10-20/pdf/E8-24704.pdf>.

The CMAQ program operates on a reimbursable basis. Funds are not provided until work is completed.

GENERAL INFORMATION

The procedures and guidelines set forth in this announcement apply to the award of CMAQ funds attributed to the Association of Central Oklahoma Governments, the Metropolitan Planning Organization for the Oklahoma City Area Regional Transportation Study (OCARTS) Transportation Management Area, for the purpose of implementing a Public Fleet Conversion Grants program to be administered as a competitive grants process. The Association of Central Oklahoma Governments’ Public Fleet Conversion Grants will allow OCARTS member local governments and their public school districts to access CMAQ funds for fleet conversions to clean fuel technologies to include alternative fuel vehicles, hybrid vehicles and alternative fuel vehicle refueling infrastructure.

WHO CAN APPLY?

1. Oklahoma City Area Regional Transportation Study (OCARTS) local government member entities and public school districts lying principally within the OCARTS boundaries may apply for funding for the purchase of alternative fuel vehicles, hybrid vehicles, and alternative fuel refueling/recharging infrastructure ([See Attachment I.](#)) OCARTS member entities’ public transit fleets and/or their contractors are eligible to receive funds, but only for non-transit vehicles and/or for alternative fuel vehicle refueling or recharging infrastructure.

2. OCARTS local government member entities include the cities of Bethany, Blanchard, Choctaw, Cole, Del City, Edmond, Forest Park, Goldsby, Guthrie, Harrah, Jones City, Lexington, Luther, Midwest City, Moore, Mustang, Newcastle, Nichols Hills, Nicoma Park, Noble, Norman, Oklahoma City, Piedmont, Slaughterville, Spencer, Tuttle, The Village, Warr Acres, and Yukon, Oklahoma. Also include Canadian County, Cleveland County, Logan County, McClain County and Oklahoma County, Oklahoma.
3. Eligible public school districts include the Mustang, Piedmont, and Yukon public schools in Canadian County; Lexington, Little Axe, Moore, Noble, Norman, and Robin Hill public schools in Cleveland County; Tuttle Public Schools in Grady County; Guthrie Public Schools in Logan County; Blanchard and Newcastle public schools in McClain County; and Bethany, Choctaw-Nicoma Park, Crooked Oak, Crutch, Deer Creek, Edmond, Harrah, Jones, Luther, Mid-Del, Millwood, Oakdale, Putnam City, Oklahoma City, and Western Heights public schools in Oklahoma County.
4. Private sector agencies that contract services such as refuse hauling or school transportation to eligible OCARTS-area public entities can also be considered for funding. A private agency or a non-profit agency can apply only if it establishes a partnership with a public agency. A written agreement must be in place between the public agency and the private agency. It remains the responsibility of the public agency to apply for funding and to oversee and protect the investment of CMAQ funds in the public-private partnership (PPP).

Federal, state, and fuel provider fleets covered under the Energy Policy Act of 1992 (EPA 1992) are NOT eligible to receive funding under this solicitation.

This is a reimbursement program. All applicants must demonstrate an ability to fund and manage activities at the time they are undertaken. Applicants must be able to demonstrate the ability to provide required matching funds as applicable. The applicant(s) must finance the entire project until the project is completed and federal share is released for reimbursement (typically within 60 days of applicant submission of final invoice to ACOG). Private sector grantees will receive reimbursement through their public sponsor.

PROJECT CATEGORIES

For the purposes of this CMAQ-funded grant opportunity, and in keeping with current federal guidelines as outlined in the CMAQ Final Program Guidance published by the Federal Highway Administration in Federal Register Vol. 73, No. 203, Monday, October 20, 2008, funds may be awarded in the following eligible categories:

1. Alternative Fuel Refueling or Recharging Infrastructure
2. Dedicated Alternative Fuel Vehicles (AFVs) and Hybrid Vehicles
3. Dedicated Alternative Fuel Off-Road equipment such as propane or compressed natural gas commercial mowers
4. Heavy-duty Hybrid Trucks, Hydraulic Hybrid Trucks, and diesel engine replacements or engine repowers to dedicated alternative fuel

FUNDING RATIOS

Alternative Fuel Infrastructure Projects:

Eligible public sector projects may be funded at a ratio of up to 80 percent federal funds and 20 percent local funds for installation costs and “capital investments” in alternative fuel refueling/recharging infrastructure.

Eligible public-private partnership (PPP) infrastructure projects may be funded at the same ratio as public sector projects, however, all applicable federal and state incentives that will accrue to the private sector entity and/or any federal or state credits that may be partially or wholly transferred to the public sector entity must be disclosed.

For the purposes of this CMAQ funded grant opportunity, **capital investments** are defined as Level 1, Level 2, and Level 3 charging point/station equipment directly related to recharging electric batteries in highway-speed, plug-in electric vehicles; or equipment directly related to the compression of gaseous fuels, and equipment directly related to the storage and dispensing of both gaseous and liquid fuels into a motor vehicle. Capital investments exclude real estate and site development.

Dedicated Alternative Fuel Vehicles/Hybrid Vehicles and Trucks/Diesel Engine Replacements:

Eligible public sector projects may be funded as follows:

Light Duty & Medium Duty (≤ 10,000 lbs. GVWR or Class 1 and Class 2 truck classification*) alternative fuel vehicles, hybrid vehicles and commercial mowers) Eligible projects costs for CMAQ funding are limited to the “incremental cost” of the vehicle(s). Projects may be funded at a ratio of up to 100 percent federal funds for the incremental cost only. The remainder of the vehicle cost may serve as the local share. In no instance will the local share be less than 20 percent of the total project cost.

Heavy Duty (> 10,000 lbs. GVWR or Class 3 - 8 truck classification*) Eligible projects costs for CMAQ funding are limited to the “incremental cost” of the vehicle(s). Projects may be funded at a ratio of up to 100 percent federal funds for the incremental cost only. The remainder of the vehicle cost may serve as the local share. In no instance will the local share be less than 20 percent of the total project cost.

Diesel engine replacements and repowers for pre-2007 Model Year heavy duty vehicles (**> 10,000 lbs. GVWR or Class 3 - 8 truck classification***) Eligible project costs for CMAQ funding are limited to the cost of the repower including the alternative fuel system, dedicated alternative fuel engine and labor. Projects may be funded at a ratio of up to 80 percent federal funds for the repower cost only. In no instance will the local share be less than 20 percent of the total project cost.

* See [APPENDIX B](#) for truck types and weight classifications.

Eligible PPP vehicle projects may be funded at the same ratios as public sector projects. However, all applicable federal and state incentives that will accrue to the private sector entity and/or any federal or state credits that may be partially or wholly transferred to the public sector entity must be disclosed.

Incremental cost or incremental difference is defined as the price differential between an Original Equipment Manufacturer (OEM) alternative fuel vehicle, hybrid vehicle, or hydraulic hybrid vehicles and a comparably equipped motor vehicle that employs traditional fuel and/or drivetrain technology); or as the price of conversion equipment and installation to equip a new OEM conventional-fuel vehicle to run exclusively on alternative fuels and any price differential or premium attached to an OEM conversion-ready engine as compared to its conventional-fuel counterpart.

UTILIZATION OF FUNDS & PROJECT TIMELINE

The amount of CMAQ funds available under Round 1 of the 2012 ACOG Public Fleet Conversion Grants Solicitation Announcement for projects in the OCARTS study area is \$264,856.

All awarded projects under Round 1 of the 2012 ACOG Public Fleet Conversion Grants Solicitation must be completed and invoices with backup documentation must be received by ACOG no later than July 30, 2013.

LIMITATIONS ON FUNDS

Eligible local governments and school districts may apply only for Public Fleet Conversion Grants funding for which local match funds have been identified. Other federal grant funding or funds of federal origin cannot be utilized as matching funds. Additionally, if other awards, incentives, rebates, transferred tax credit or pass-through incentives will be utilized in a project, that amount of financial assistance and its purpose must be disclosed.

ACOG reserves the right to negotiate the amount of a grant award; however, the maximum amount of funding available under this solicitation announcement is **\$264,856**.

EVALUATION & PROJECT SCORING

Projects will be evaluated and scored according to the following six (6) criteria:

1. Number of Clean Fuel Technology Replacement Vehicles per GVWR Category
2. Alternative Fuel Infrastructure - Accessibility
3. Alternative Fuel Infrastructure - Throughput
4. Alternative Fuel Vehicle Refueling Capacity/Access
5. Repair and Service Availability
6. Project Viability and likelihood of long-term success

Each project will be evaluated by determining how well the project rates on each of the applicable criteria. Scoring details and definitions are delineated in [Attachment II](#).

ADDITIONAL INFORMATION

A Glossary of Terms and Acronyms as used in this document is attached as [APPENDIX A](#). A list of additional resources regarding alternative fuels and vehicles is attached as [APPENDIX C](#).

DESCRIPTION OF ELIGIBLE PROJECTS

A. Alternative Fuel Infrastructure

These projects will establish public-sector owned fueling facilities and other infrastructure needed to fuel alternative fuel vehicles, unless private-sector owned fueling stations are in place and reasonably accessible.

Projects that establish fueling sites open to the public will be of particular interest. If the proposal supports a billing system, it must be a universal card billing system.

For the purposes of this CMAQ-funded grant opportunity, eligible alternative fuel infrastructure is limited to projects that relate to the storage and dispensing of

1. compressed natural gas (CNG)
2. liquefied petroleum gas (LPG, propane)
3. E85 (85 percent ethanol and 15% gasoline blend)
4. metered electric vehicle recharging

All alternative fuel infrastructure projects, including propane and E85, must fall into one of the following three categories or a combination thereof, and in the case of electric vehicle recharging and CNG, must meet or better the specified capacities.

Additionally, all equipment purchased and installed with ACOG Public Fleet Conversion Grant funding must be new. Used and/or refurbished equipment is not eligible for funding.

1. Public-private partnership providing multi-fleet access **and** general public access with universal card reader
 - a. For projects involving electric vehicle recharging, required minimum capacity: Level 3, commercial, metered, fast charge point capable of recharging a battery electric passenger car from 20 percent empty to 80 percent full in less than 30 minutes, using high power output of 96 kilowatts (480 Volts DC, 200 Amps).
 - b. For projects involving CNG, required minimum capacity: two (2) dispensers with two (2) hoses each; 5,500 psi storage capacity and 3600 psi fill capacity
2. Public sector or Public-private partnership providing multi-fleet **and/or** general public access with universal card reader
 - a. For projects involving electric vehicle recharging, required minimum capacity: Level II, public access and/or fleet access, metered charge point capable of recharging a battery electric passenger car from “empty” to “full” in six (6) to seven (7) hours using maximum power output of 3.3kW (240V output at 32A).
 - b. For project involving CNG, required minimum capacity: one (1) dispenser with two (2) hoses; 5,500 psi storage capacity and 3600 psi fill capacity

3. Single-fleet access with no general public access

- a. For projects involving electric vehicle recharging, required minimum capacity: Level I, metered charge point capable of recharging a battery electric passenger car from “empty” to “full” in 14 or 15 hours using maximum power output of 1.9kW (120V at 16A).
- b. For projects involving CNG, minimum fast-fill capacity: 30,000 scf (standard cubic feet) storage; minimum slow fill capacity 50 cfm (cubic feet per minute) compressor.

B. Dedicated Alternative Fuel Vehicles/Hybrid Vehicles and Trucks/Diesel Engine Replacements

These projects will purchase public-sector and/or private-sector owned Original Equipment Manufacturer (OEM) dedicated alternative fuel vehicles, including passenger vehicles and vans, refuse trucks, street cleaners, school buses, airport shuttles, law enforcement vehicles, commercial mowers, and others. Costs associated with converting conventional-fuel fleet vehicles to run exclusively on alternative fuels are also eligible. All vehicles must meet EPA emissions standards and in the case of conversions, must have EPA certification.

Only dedicated alternative fuel vehicles AFV are eligible for funding. Additionally, all vehicles and equipment purchased with ACOG Public Fleet Conversion Grant funding must be new. Used and/or refurbished equipment is not eligible for funding. **All engine conversions and/or repowers purchased and installed with ACOG Public Fleet Conversion Grant funding must be accompanied by a current EPA-issued Emissions Standards Certificate of Conformity.**

Vehicles must be capable of being fueled solely by one of the alternative fuels identified in section 301 of the 1992 Energy Policy Act as limited by the following eligible fuels:

1. compressed natural gas (CNG)
2. liquefied petroleum gas (LPG, propane)
3. battery electric vehicles

Eligible projects also include the repower of diesel vehicles with dedicated alternative fuel engines in existing or new heavy-duty trucks and vehicles.

Note: Flexible-fuel vehicles, dual-fuel or bi-fuel vehicles are NOT eligible for funding. Also, electric vehicles such as golf carts, low-speed electric vehicles, three wheel electric vehicles, electric bicycles and motorcycles, and electric vehicles that are not manufactured for highway speeds and do not meet Federal Motor Vehicle Safety Standards for passenger cars and trucks are NOT eligible for funding.

Hybrid Vehicles and Hybrid Trucks: Eligibility Information

Although not defined by the Energy Policy Act of 1992 as alternative fuel vehicles, certain hybrid vehicles that have lower emissions rates than their non-hybrid counterparts may be eligible for funding.¹ Hybrid passenger vehicles must meet EPA's low emissions and energy efficiency requirements for certification under the HOV exception provisions of the SAFETEA-LU to be eligible for CMAQ funding (Tier 2, Bin 5, 4, 3, 2, 1).

Projects involving **heavy-duty hybrid vehicles**, including refuse haulers, street sweepers, and other trucks also may be appropriate for program support. Eligibility will be based on a comparison of the emissions projections of these larger candidate vehicles and other comparable models.

As used in this solicitation, the term **hybrid vehicle** includes hybrid-electric vehicles, plug-in hybrid vehicles, and hydraulic hybrid vehicles. Hybrid vehicles are not required to have alternative fuel capacity.

¹ 23 U.S.C. §166(e) (SAFETEA-LU §1121(a)). The 2005 transportation act known as "SAFETEA-LU" directs EPA to advise states on defining low emission and energy efficient vehicles that may use an HOV lane with fewer than the required number of occupants. This action guides states that seek an exemption from existing HOV requirements for vehicles certified as "low emission and energy efficient." Congress has authorized such exemptions through September 30, 2009.

EPA published a notice of proposed rulemaking May 24, 2007 (40 CFR Part 601; Federal Register/Vol. 72, No. 100), that would establish criteria for exemptions to the current HOV lane requirements. EPA established a public docket for this action (Docket No. EPA-HQ-OAR-2005 0173). The proposed rulemaking lists Tier 2/Bin 5—the average of the Tier 2 tailpipe emission standards—as the minimum level for low-emission certification under the HOV exception, meaning lower emission hybrids must meet Tier 2/Bin 5, 4, 3, 2 or 1 emission standards. A list of these vehicles can be found in the above noted Federal Register.

ADDITIONAL PROJECT REQUIREMENTS AND IMPORTANT INFORMATION

Projects requesting funding for the conversion and/or purchase of Alternative Fuel Vehicles or Hybrid Vehicles must meet the following additional eligibility requirements:

1. All vehicles funded with ACOG Public Fleet Conversion Grant awards must be of a less polluting fuel or technology type for ozone causing pollutants than the vehicle(s) they are replacing.

Vehicles for which award funds are made available must be replacement vehicles and require the removal of a “like” diesel or gasoline powered vehicle from the fleet. Fleet size must be reduced or remains the same. A “like” vehicle means light duty vehicles ($\leq 8,500$ lbs. GVWR) must be replaced with light duty vehicles and cannot be replaced with medium duty vehicles or heavy duty vehicles. Medium duty vehicles (8,501 – 10,000 lbs. GVWR) must be replaced with medium duty vehicles or light duty vehicles; and heavy duty vehicles ($\geq 10,001$ lbs. GVWR) must be replaced with heavy duty vehicles or medium duty vehicles. The weight class and GVWR of replacement vehicles may not be greater than the weight class and GVWR of the vehicles being replaced. See [APPENDIX B](#).

2. Grantees must visibly mark all ACOG Public Fleet Conversion Grant-funded vehicles in such a way that promotes alternative fuels/clean fuel technology and clean air. This may include logos, window clings, vehicle wraps, etc.
3. All aftermarket alternative fuel conversions, OEM alternative fuel vehicles, and/or hybrid vehicles, including plug-in hybrid vehicles and hydraulic hybrid vehicles must be EPA and/or CARB emissions certified.
4. Grantees will maintain odometer readings, fuel consumption records, maintenance records, and written documentation of all other costs associated with the vehicle. The grantee will forward these records to the Association of Central Oklahoma Governments annually, beginning not later than twelve (12) months after the date of the vehicle purchase, and continuing yearly thereafter for three (3) years for a total period of four reporting years.

Round 2 – 2011 ACOG PUBLIC FLEET CONVERSION GRANTS SCHEDULE

Distribution of ACOG Public Fleet Conversion Grants ApplicationsAugust 12, 2011

ACOG Public Fleet Conversion Grants Application WorkshopTBD

One (1) ACOG Public Fleet Conversion Grants Application Workshop may be held in the ACOG Boardroom, 21, E. Main Street, Suite 100; Oklahoma City, OK 73104, depending on need and applicant requests

Application Submission Deadline:.....September 23, 2011; 4:00 p.m.

Review of applicationsSeptember 26 – September 30, 2011

Intermodal Transportation Policy Committee approval of award recommendations
.....October 27, 2011

Notification of grant recipients and acceptance of awards by selected entitiesOctober 28, 2011

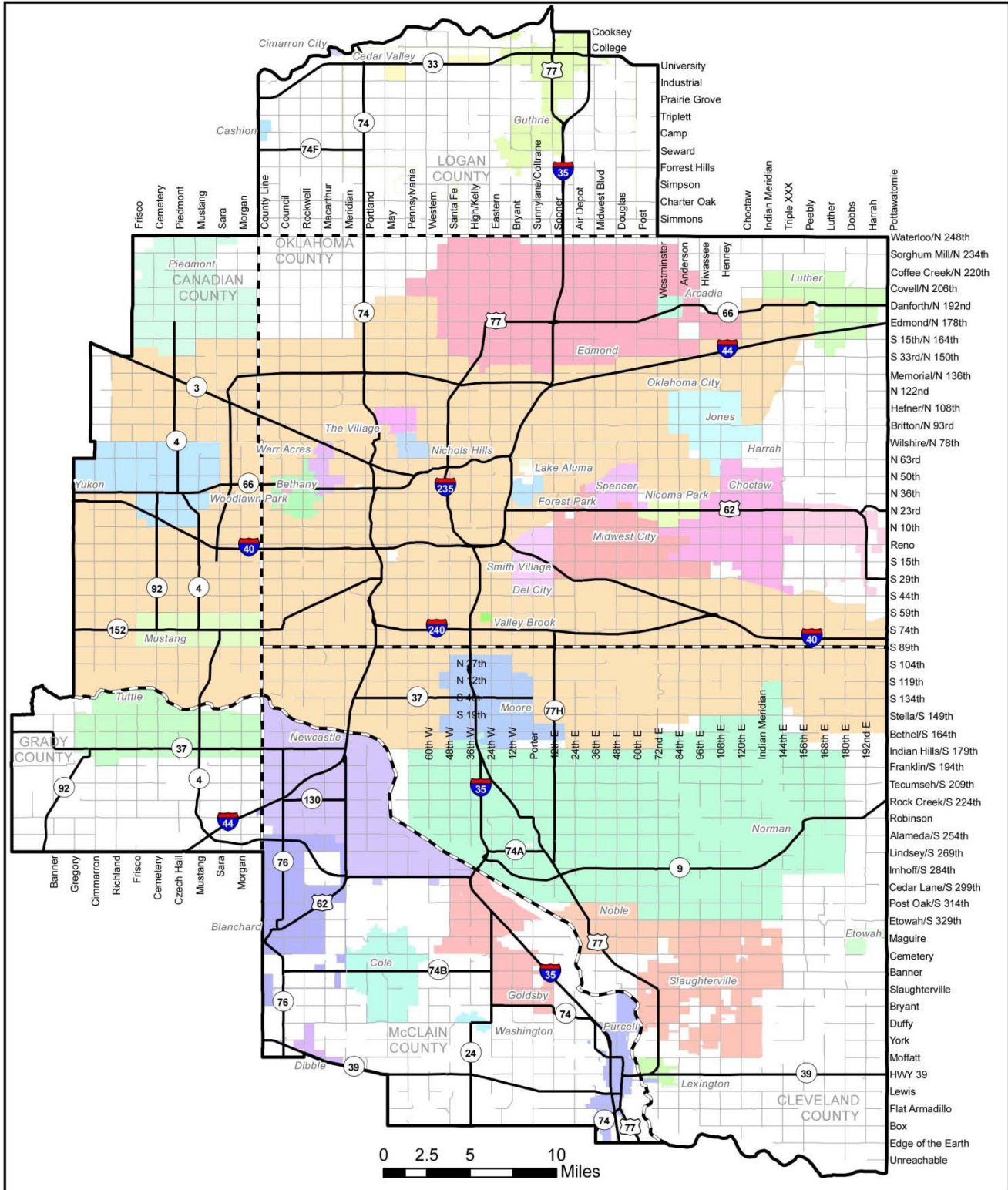
Contracts between ACOG and funded entities signed and distributed*November 2011

* Projects cannot begin until after the applicant receives a signed copy of its contract and a letter of “Notice to Proceed” from ACOG. **Only project costs incurred after a signed contract with ACOG is executed are eligible for reimbursement.**

ROUND 1
FY 2012 ACOG PUBLIC FLEET
CONVERSION GRANTS

ATTACHMENTS

ATTACHMENT I - OCARTS BOUNDARY MAP



Oklahoma City Area Regional Transportation Study (OCARTS) Area

ACOG Map Disclaimer applies. See the report Table of Contents or www.acogok.org/mapdisclaimer.asp



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June 2008

ATTACHMENT II - SCORING GUIDE

CRITERIA SCORING GUIDE

1. Number of Clean Fuel Technology Replacement Vehicles per GVWR Category

Points will be given for the number of vehicles to be replaced as the result of a grant award under this solicitation in each of the GVWR categories for light-duty, medium-duty and heavy-duty alternative fuel vehicles. A variety of excellent vehicle information resources are listed and linked in [APPENDIX C](#).

SCORE	DEFINITION
3	Three (3) points will be given for <u>each</u> heavy-duty AFV or Hybrid replacing a pre-2007 Model Year heavy-duty conventional diesel vehicle of GVWR \geq 10,001 lbs.*
2	Two (2) points will be given for <u>each</u> medium-duty AFV or Hybrid replacing a pre-2004 Model Year medium-duty diesel or gasoline vehicle of GVWR = 8,501 – 10,000 lbs.*
1	One (1) point will be given for <u>each</u> light-duty AFV or Hybrid replacing light-duty gasoline vehicles of GVWR \leq 8,500 lbs.*

*Note: Weight class and GVWR of replacement vehicles may not be greater than the weight class and GVWR of the vehicles being replaced. See [APPENDIX B](#) for truck types and weight classifications.

2. Alternative Fuel Infrastructure – Accessibility

Points will be given for the accessibility of a given alternative fueling infrastructure project.

SCORE	DEFINITION
3	Public/private partnership providing fast-fill/fast charge, multi-fleet access and general public access with universal card reader
2	Public sector, multi-fleet access with universal card reader
1	Single-fleet access

3. Alternative Fuel Infrastructure – Throughput

Points will be given for the throughput of a given alternative fueling infrastructure project.

SCORE	DEFINITION
10	≥ 150,000 annual gge
9	125,000 – 149,999 annual gge
8	100,000 – 124,999 annual gge
7	75,000 – 99,999 annual gge
6	50,000 – 74,999 annual gge
5	25,000 – 49,999 annual gge
4	15,000 – 24,999 annual gge
3	10,000 – 14,999 annual gge
2	5,000 – 9,999 annual gge
1	1,000 – 4,999 annual gge
0	< 1,000 annual gge

4. Alternative Fuel Vehicle Refueling/Recharging Capacity

Points will be given for the availability and viability of alternative fuel vehicle refueling, if applicable.

SCORE	DEFINITION
3	Fleet has adequate refueling/recharging capacity to fuel its alternative fuel vehicles at its own facility.
2	Fleet has adequate refueling/recharging capacity to fuel its alternative fuel vehicles at a combination of its own refueling facility and nearby (within a 5 mile radius of fleet yard) public access and/or shared fleet refueling/recharging facilities.
1	Fleet has adequate refueling/recharging capacity to fuel its alternative fuel vehicles at nearby (within a 5 mile radius of fleet yard) public access or shared fleet refueling/recharging facilities.

5. Repair and Service Availability

Points will be given for the availability of certified alternative fuel vehicle technicians and/or certified compressor technicians.

SCORE	DEFINITION
2	Alternative fuel vehicles and/or refueling facilities are serviced and maintained by entity's own certified alternative fuel technician(s) staff and/or at a local dealership and/or at a local alternative fuel service shop by certified alternative fuel technicians.
1	Alternative fuel vehicles and or refueling facilities are/will be serviced and maintained by certified alternative fuel technicians located within a 100 mile radius of fleet base.
0	Fleet has not determined where or how its alternative fuel vehicles, hybrid vehicles and/or alternative fuel refueling/recharging facility will be serviced and maintained.

6. Project Viability and likelihood of long-term success

Points will be given to applications from entities that provide a viable plan for continued fleet incorporation of clean fuel technologies (vehicles and/or refueling, as applicable).

SCORE	DEFINITION
3-2	Applicant entity provides a viable plan for continued incorporation of clean fuel vehicle and/or refueling/recharging technologies that does not depend on continued grant funding for long-term sustainability
2-1	Applicant entity provides a viable plan for continued incorporation of clean fuel vehicle and/or refueling/recharging technologies that may depend on some amount of additional grant funding to become long-term sustainable.
0	Applicant entity provides no plan for continued incorporation of clean fuel vehicle and/or refueling/recharging technologies

Bonus points can be earned in these categories:

1. Five (5) bonus points per vehicle will be given to projects utilizing available OEM vehicle technologies, i.e. vehicles and mobile equipment that can be purchased or readily ordered, delivered and serviced through dealerships

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CONVERSION GRANTS

APPENDICES & ADDITIONAL
RESOURCES

APPENDIX A - GLOSSARY

GLOSSARY OF TERMS AND ACRONYMS

TERM	DEFINITION
AFV or Alternative Fuel Vehicle	A vehicle originally manufactured or converted to run on alternative fuels.
Alternative Fuels (as defined by EPAAct)	<ul style="list-style-type: none"> • Methanol, ethanol, and other alcohols • Blends of 85% or more of alcohol with gasoline • Natural gas and liquid fuels domestically produced from natural gas • Liquefied petroleum gas (propane) • Coal-derived liquid fuels • Hydrogen • Electricity • Biodiesel (B100) • Fuels (other than alcohol) derived from biological materials • P-Series
Bi-Fuel Vehicle	A vehicle with two separate fuel systems that operates on either fuel (e.g., a bi-fuel gasoline/propane vehicle can operate on either gasoline or propane). Each fuel is stored in a separate tank.
California Air Resources Board (CARB)	California’s lead air quality agency, consisting of a nine-member Governor-appointed board. It is responsible for attainment and maintenance of the state and federal air quality standards, and is fully responsible for motor vehicle pollution control. It oversees county and regional air pollution management programs.
CARB Certification	New motor vehicles and engines and vehicle conversions must be certified by the California Air Resources Board (CARB) for emission compliance before they are legal for sale, use, or registration in California. Certification is granted annually to individual engine families and is good for one model year.
Clean Fuel Technology and/or Clean Fuel Technology Vehicles	Synonymous as used in this document with Alternative Fuel Vehicles, Hybrid Electric Vehicles, Plug-in Hybrid Vehicles, and Hydraulic Hybrid Vehicles and the infrastructure necessary to refuel/recharge those vehicles.
Conversions	Gasoline or diesel original equipment manufacturer (OEM) vehicles altered to operate on propane, natural gas, methane gas, ethanol, or electricity.
Dedicated Alternative Fuel Vehicle	A vehicle that runs only on an alternative fuel, with no gasoline or diesel capability.

TERM	DEFINITION
Dual-Fuel Vehicle	A motor vehicle that is capable of operating on either an alternative fuel and on gasoline or diesel fuel. These vehicles have at least two separate fuel systems which inject each fuel simultaneously into the engine combustion chamber.
Electric Vehicle (EV)	A vehicle in which electricity powers the vehicle's wheels via an electric motor. A battery or other energy storage device is used to store the electricity that powers the motor. EV batteries must be replenished by plugging in the vehicle to a power source.
EPA Certification	New motor vehicles and engines and vehicle conversions must be certified by the U.S. Environmental Protection Agency (EPA) for emission compliance before they are legal for sale, use, or registration in the United States. Certification is granted annually to individual engine families and is good for one model year.
GGE	Gasoline Gallon Equivalents. See APPENDIX D for conversion factors.
GVWR (Gross Vehicle Weight Rating)	The weight a vehicle is designed to carry, including the net weight (actual weight of the vehicle as determined on a standard scale) plus the weight of passengers, fuel, cargo, and any additional accessories. The GVWR is a safety standard used to prevent overloading.
Heavy-Duty Vehicle	A vehicle whose GVWR is $\geq 10,000$ lbs.
Hybrid Vehicle	As used in this document, the generic term "hybrid vehicle" means hybrid-electric vehicle, plug-in hybrid vehicle including extended range hybrid, and/or hydraulic hybrid vehicle.
Hybrid Electric Vehicle (HEV)	A vehicle that typically combines the internal combustion engine of a conventional vehicle with the battery and electric motor of an electric vehicle and that does not need to be plugged in to recharge the battery.
Hydraulic Hybrid Vehicle (HHV)	A vehicle that instead of storing energy in a battery and tapping it through an electric motor like a hybrid electric vehicle, stores energy in a pressurized hydraulic accumulator and taps it through mechanical pumps and turbines.
Incremental difference	Price differential between an Original Equipment Manufacturer (OEM) alternative fuel vehicle and a comparable conventional-fuel vehicle; or between a hybrid vehicle and a comparable conventional-fuel vehicle; or the price of conversion equipment and installation to equip a new conventional-fuel vehicle to run exclusively on alternative fuels; and any price differential or premium attached to an OEM conversion-ready engine as compared to its conventional-fuel only counterpart

TERM	DEFINITION
FMVSS	Federal Motor Vehicle Safety Standards and Regulations as issued by the U.S. Department of Transportation, National Highway Traffic Safety Administration
Light-Duty Vehicle	An on-road passenger vehicle whose GVWR is ≤ 8,500 lbs. and is not classified as a Neighborhood Electric Vehicle or low speed vehicle.
Local Government	A county, municipality, city, town, township or school district.
Medium-Duty Vehicle	An on-road passenger vehicle whose GVWR is equal to 8,501 lbs. – 9,999 lbs.
Neighborhood Electric Vehicle (NEV)	An electric vehicle with top speed limited to 25 mph. NEVs are legal in various states on streets with a posted speed limit of 35 mph or less. Also called a low-speed vehicle (LSV).
OEM	Original Equipment Manufacturer. As used in this document, refers to vehicle and/or engine manufacturers.
OCARTS	Oklahoma City Area Regional Transportation Study area. The OCARTS area includes 40 cities and towns located within Oklahoma and Cleveland counties, and portions of Canadian, Grady, McClain and Logan counties.
Plug-in Hybrid Vehicle (PHEV)	A hybrid vehicle with a controller programmed to deplete the charge in the battery pack to make maximum use of electricity from external charging. Depending on the technology, plug-in hybrids may be equipped with an internal combustion engine that provides most of the drive to the wheels, assisted by a battery-powered electric motor; or they may be propelled only by an electric motor that is assisted by an internal combustion engines whose sole job is to turn a generator that produces electricity.
Small Volume Manufacturer	A vehicle converter that holds an EPA and/or CARB emissions certification (Certificate of Conformity) for aftermarket conversion.
The Energy Policy Act of 1992 (EPAAct)	Legislation passed by Congress to reduce our nation’s dependence on imported petroleum by requiring certain fleets to acquire alternative fuel vehicles, which are capable of operating on nonpetroleum fuels.
Throughput	Fuel purchased/loaded and sold/used at a fueling site. Applies to all types of fueling stations, including liquid fuels, gaseous fuels, and electric recharging stations.

APPENDIX B - TRUCK CLASSIFICATIONS

TRUCK TYPES AND WEIGHT CLASSES

Truck Classifications

CENL 2000-062556g6

Class	Weight Range	Vehicle Types
CLASS 1	6,000 lb & less	Minivan, Utility van, Multi-purpose, Full-size pickup
CLASS 2	6,001 to 10,000 lb	Minivan, Utility van, Full-size pickup, Step van
CLASS 3	10,001 to 14,000 lb	Walk-in, Conventional van, City delivery
CLASS 4	14,001 to 16,000 lb	Conventional van, City delivery, Large walk-in
CLASS 5	16,001 to 19,500 lb	Bucket, City delivery, Large walk-in
CLASS 6	19,501 to 26,000 lb	Beverage, Single-axle van, School bus, Rack
CLASS 7	26,001 to 33,000 lb	Refuse, Furniture, City transit bus, Medium conventional
CLASS 8	33,001 lb & over	Dump, Cement, Heavy conventional, COE sleeper

APPENDIX C - ADDITIONAL FUEL, VEHICLE AND EMISSIONS RESOURCES

ADDITIONAL RESOURCES

1. U.S. DOE Clean Cities 2011 Vehicle Buyer's Guide:
<http://www.afdc.energy.gov/afdc/pdfs/49488.pdf>
2. Clean Cities' Guide to Alternative Fuel and Advanced Medium- and Heavy-Duty Vehicles:
<http://www.afdc.energy.gov/afdc/pdfs/47984.pdf>
3. Business Case for Compressed Natural Gas in Municipal Fleets:
National Renewable Energy Laboratory Technical Report June 2010
<http://www.afdc.energy.gov/afdc/pdfs/47919.pdf>
4. NGVAmerica's Guide to Available Natural Gas Vehicles and Engines:
<http://www.ngvamerica.org/pdfs/marketplace/MP.Analyses.NGVs-a.pdf>
5. Model Year 2011 Alternative Fuel Vehicles & Advanced Technology Vehicles (updated 5/7/2011):
http://www.afdc.energy.gov/afdc/pdfs/my2011_afv_atv_v2.pdf
6. Alternative Vehicle Make/Model Search:
www.afdc.energy.gov/afdc/vehicles/index.html
7. U.S. DOE and Environmental Protection Agency Vehicle Comparison and Fuel Economy Guide:
www.fueleconomy.gov
8. U.S. DOE Clean Cities:
www.eere.energy.gov/cleancities
9. U.S. DOE Alternative Fuels & Advanced Vehicles Data Center:
www.afdc.energy.gov/afdc

APPENDIX D - GGE CONVERSION FACTORS

CONVERTING ALTERNATIVE FUEL UNITS TO GASOLINE GALLON EQUIVALENTS (GGE)

Every fuel has different energy density. The most common way to measure how much petroleum is displaced through the use of an alternative fuel is to convert the energy density of an alternative fuel unit to the energy density in a gasoline gallon.

The table below lists the GGE calculation for each alternative fuel. To perform a conversion, choose the GGE calculation for the appropriate fuel type. Next, drop the number of fuel units used into the equation, and multiply that number by the proper conversion factor.

Example

If you used 115 gallons of B20, the equation would be: $115 \text{ gal B20} \times 1.126 = 129.49 \text{ GGE}$

Alternative Fuel Conversion Factors to GGE			
Fuel Type	Fuel Measurement Unit	Conversion Factor	GGE Calculation
B100	gallons	1.015	$\text{GGE} = \text{B100 gal} \times 1.015$
B20	gallons	1.126	$\text{GGE} = \text{B20 gal} \times 1.126$
CNG	gallons at 2400 psi	0.18	$\text{GGE} = \text{CNG gal (at 2400 psi)} \times 0.18$
CNG	gallons at 3600 psi	0.27	$\text{GGE} = \text{CNG gal (at 3600 psi)} \times 0.27$
CNG	gallons at 3000 psi	0.225	$\text{GGE} = \text{CNG gal (at 3000 psi)} \times 0.225$
CNG	hundred cubic feet	0.83	$\text{GGE} = \text{CNG ccf} \times 0.83$
Diesel	gallons	1.147	$\text{GGE} = \text{Diesel gal} \times 1.147$
E-85	gallons	0.72	$\text{GGE} = \text{E-85 gal} \times 0.72$
Electric	kWh	0.03	$\text{GGE} = \text{Ele kWh} \times 0.03$
Gasoline	gallons	No conversion needed	$\text{GGE} = \text{Gasoline gal}$
Hydrogen	kg	1	$\text{GGE} = \text{H2 kg} \times 1$
LNG	gallons @ 14.7psi and -234 degrees F	0.66	$\text{GGE} = \text{LNG gal} \times 0.66$
LPG	gallons	0.74	$\text{GGE} = \text{LPG gal} \times 0.74$

Source: U.S. Dept. of Energy, Office of Energy Efficiency and Renewable Energy