

GRANTS/CONTINGENT AWARD REQUEST



To: Grants and Loans Office

Date: 05 / 2 / 2012

Project Manager: Donald Coe Phone Number: (916) 654-3941 ext.
Office: Emerging Fuels and Technologies Division: Fuels and Transportation MS- 27
Project Title: Medium- and Heavy-Duty Vehicle Targeted Transportation Technologies Demonstrations

Type of Request: (check one)

New Agreement: (include items A-F from below) Agreement Number: Assigned by the G&L Office
Program: Alternative and Renewable Fuels and Vehicle Technology (ARFVT) Program
Solicitation Name and/or Number: PON-10-603
Legal Name of Recipient: Institute of Gas Technology dba Gas Technology Institute (GTI)
Recipient's Full Mailing Address: 1700 South Mount Prospect Road
Des Plaines, IL 60018
Recipient's Project Officer: Ted Barnes Phone Number: (847) 544-3405 ext.
Agreement Start Date: 6 / 30 / 2012 Agreement End Date: 03 / 30 / 2016

Amendment: (Check all that apply) Agreement Number: _____
 Term Extension – New End Date: _____ / _____ / _____
 Work Statement Revision (include Item A from below)
 Budget Revision (include Item B from below)
 Change of Scope (include Items A – F as applicable from below)
 Other: (Specify) _____

ITEMS TO ATTACH WITH REQUEST:

- A. Work Statement
- B. Budget
- C. Recipient Resolution, if applicable. (Resolution may be requested in Special Conditions if not currently available.)
- D. Special Conditions, if applicable.
- E. CEQA Compliance Form
- F. Other Documents as applicable
 - Copy of Score Sheets
 - Copy of Pre-Award Correspondence
 - Copy of All Other Relevant Documents

California Environmental Quality Act (CEQA)

CEC finds, based on recipient's documentation in compliance with CEQA:
 Project exempt: Section 15301 NOE filed: _____ / _____ / _____
 Environmental Document prepared: Notice of Exemption NOD filed: _____ / _____ / _____
 Other: Explain
 CEC has made CEQA finding described in CEC-280, attached

Funding Information:

*Source #1: ARVFTP Amount: \$ 4,562,532.00 Statute: 2011 FY: 11/12 Budget List #: 601.118c
*Source #2: _____ Amount: \$ _____ Statute: _____ FY: _____ Budget List #: _____
*Source #3: _____ Amount: \$ 0.00 Statute: _____ FY: _____ Budget List #: _____

If federally funded, specify federal agreement number: _____
* Source Examples include ERPA, PIER-E, PIER-NG, FED, GRDA, ARFVT, OTHER.

Business Meeting Approval: (refer to Business Meeting Schedule)

Proposed Business Meeting Date: 5 / 31 / 2012 Consent Discussion
Business Meeting Participant: Donald Coe Time Needed: (5 minutes)

Agenda Notice Statement: (state purpose in layperson terms)

Possible approval of a Grant / Contingent Award to...
the Institute of Gas Technology for \$4,562,532 to demonstrate a natural gas version of a Navistar engine and a plug-in liquefied natural gas hybrid heavy-duty truck.

EXHIBIT A
Scope of Work

TECHNICAL TASK LIST

Task #	Task Name
1	Administration
2	Clean Air Power: Navistar Natural Gas MaxxForce 13
3	U.S. Hybrid Corporation: Plug-in LNG Hybrid Heavy-duty Truck (PLHT)

KEY NAME LIST

Task #	Key Personnel	Subgrantee	Key Partner(s)
1			
2		Clean Air Power	Navistar
3		U.S. Hybrid Corporation	Freightliner, Cummins-Westport, UC Riverside, Calko Transport Company, Port of Long Beach, Port of Los Angeles

GLOSSARY

Specific terms and acronyms used throughout this scope of work are defined as follows:

Term/ Acronym	Definition
ARFVT	Alternative and Renewable Fuel and Vehicle Technology
CPR	Critical Project Review
Energy Commission	California Energy Commission
FTD	Fuels and Transportation Division
GHG	Greenhouse Gas Emissions
GTI	Gas Technology Institute
LNG	Liquefied Natural Gas
PLHT	Plug-In LNG Hybrid Truck
Recipient	Institute of Gas Technology dba Gas Technology Institute

Background

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007), created the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVT Program). The statute, subsequently amended by AB 109 (Núñez, Chapter 313, Statutes of 2008), authorizes the Energy Commission to develop and deploy alternative and renewable fuels and advanced transportation technologies to help attain the state's climate change policies. The Energy Commission has an annual program budget of approximately \$100 million and provides financial support for projects that:

Revised 4/20/12

ARV-11-029
Gas Technology Institute

EXHIBIT A

Scope of Work

- Develop and improve alternative and renewable low-carbon fuels;
- Optimize alternative and renewable fuels for existing and developing engine technologies;
- Produce alternative and renewable low-carbon fuels in California;
- Decrease, on a full fuel cycle basis, the overall impact and carbon footprint of alternative and renewable fuels and increase sustainability;
- Expand fuel infrastructure, fueling stations, and equipment;
- Improve light-, medium-, and heavy-duty vehicle technologies;
- Retrofit medium- and heavy-duty on-road and non-road vehicle fleets;
- Expand infrastructure connected with existing fleets, public transit, and transportation corridors; and
- Establish workforce training programs, conduct public education and promotion, and create technology centers.

The California Energy Commission (Energy Commission) issued solicitation PON-10-603 to provide funding opportunities under the ARFVT Program for projects to demonstrate and enhance market viability acceptance of near-term commercial applications of alternative technologies and alternative fueled vehicles for use in California's commercial goods movement, transit, and other sectors. To be eligible for funding under PON-10-603, the projects must also be consistent with the Energy Commission's ARFVT Investment Plan updated annually.

In response to PON-10-603, Recipient Institute of Gas Technology, doing business as Gas Technology Institute, submitted application #4 including two projects proposed by Clean Air Power and U.S Hybrid Corporation which were proposed for funding in the Energy Commission's Notice of Proposed Awards revised March 8, 2012. Recipient's application for these two projects is incorporated by reference to this Agreement in its entirety.

Problem Statement:

For these projects, the problem is to overcome the barriers to commercializing the technology by conducting vehicle demonstrations in California. This project addresses key problems which include:

- The technology gap in marketplace for heavy-duty engine products suite to the needs of goods movement and class 8 operators
- Problems with plug-in hybrid design for heavy duty vehicles in commercial operating conditions
 - in-use reliability of the integrated system
 - trade-offs between SOC and fuel economy
 - driver acceptance

EXHIBIT A

Scope of Work

Goals of the Agreement:

Recipient will administer the projects proposed by Clean Air Power and U.S. Hybrid Corporation to develop, demonstrate, and deploy within California an advanced natural gas engine and a plug-in liquefied natural gas (LNG) hybrid truck (PLHT) , and prepare these technologies for full-scale, commercial vehicle production.

Objectives of the Agreement:

The objectives of this Agreement are to:

- Administer agreements with two projects representing low and zero emission alternative fuel and hybrid trucks.
- Demonstrate commercial utilization of alternative, low-carbon fuels in California.
- Generate operational and performance data that will facilitate commercialization and broad deployment, and increase environmental and fuel efficiency benefits.
- Demonstrate an advanced natural gas engine for several platforms.
- Task 2
 - Demonstrate a natural gas version of the Navistar MaxxForce 13 diesel engine in California.
 - Refine ultra-low NOx emission engine for appropriate emission certification.
 - Reduce well-to-wheels greenhouse gas emissions by approximately 15% over diesel, using traditional natural gas fuel sources.
- Task 3
 - Demonstrate a PLHT for drayage applications in California.
 - Demonstrate operation in electric mode for approximately 25% of operational time (approximately 30 miles of travel).
 - Demonstrate approximately 30% reduction in fuel use due to the hybrid electric operation.

TASK 1 ADMINISTRATION

Task 1.1 Attend Kick-off Meeting

The goal of this task is to establish the lines of communication and procedures for implementing this Agreement.

The Recipient shall:

- Attend a “Kick-Off” meeting with the Commission Agreement Manager from the Fuels and Transportation Division (FTD) of the Energy Commission, the Grants Officer, and/or a representative of the Accounting Office. The Recipient shall bring its Project Manager, Agreement Administrator, Accounting Officer, and others designated by the Commission Agreement Manager to this meeting. The administrative and

EXHIBIT A

Scope of Work

technical aspects of this Agreement will be discussed at the meeting. Prior to the kick-off meeting, the Commission Agreement Manager will provide an agenda to all potential meeting participants.

The administrative portion of the meeting shall include, but not be limited to, the following:

- Discussion of the terms and conditions of the Agreement, including the special terms and conditions
- Discussion of Critical Project Review (Task 1.2)
- Match fund documentation (Task 1.6) Permit documentation (Task 1.7)
- Discussion of subgrant agreements needed to carry out project(s) (Task 1.8) No reimbursable work may be done on any project until the documentation is in place and approved for that project.
- Discussion of any amendments to this Agreement to include new technical tasks and subgrants, if the Commission makes additional funding available for additional projects (Task 1.9)
- Discussion of responsibility to review and validate invoices submitted by subgrantees (Task 1.10). Discussion of each approved project and related administrative processes.

The technical portion of the meeting shall include, but not be limited to, the following:

- The Commission Agreement Manager's expectations for accomplishing the Recipient and Subgrantee tasks described in the Scope of Work
- An updated Master Schedule of Products
- Discussion of Progress Reports (Task 1.4)
- Discussion of Technical Products (Product Guidelines located in Section 5 of the Terms and Conditions, and Special Terms and Conditions).
- Discussion of the Final Report (Task 1.5)

The Commission Agreement Manager shall designate the date and location of this meeting.

Recipient Products:

- Updated Schedule of Products
- Updated List of Match Funds
- Updated List of Permits

Commission Agreement Project Product:

- Kick-Off Meeting Agenda

EXHIBIT A
Scope of Work

Task 1.2 Critical Project Review (CPR) Meetings

The goal of this task is to determine if the Recipient's project(s) should continue to receive Energy Commission funding to complete this Agreement and to identify any needed modifications to the tasks, products, schedule or budget.

CPRs provide the opportunity for frank discussions between the Energy Commission and the Recipient. The Commission Agreement Manager may schedule CPRs as necessary, and CPR costs will be borne by the Recipient.

Participants include the Commission Agreement Manager and the Recipient and may include the Commission Grants Officer, the FTD team lead, other Energy Commission staff and management as well as other individuals selected by the Commission Agreement Manager to provide support to the Energy Commission.

The Commission Agreement Manager shall:

- Determine the location, date, and time of each CPR meeting with the Recipient. These meetings generally take place at the Energy Commission, but they may take place at another location.
- Send the Recipient the agenda and a list of expected participants in advance of each CPR. If applicable, the agenda shall include a discussion on both match funding and permits.
- Conduct and make a record of each CPR meeting. One of the outcomes of this meeting will be a schedule for providing the written determination described below.
- Determine whether to continue the project(s), and if continuing, whether or not modifications are needed to the tasks, schedule, products, and/or budget for the remainder of the Agreement. Modifications to the Agreement may require a formal amendment (please see section 8 of the Terms and Conditions). If the Commission Agreement Manager concludes that satisfactory progress is not being made, this conclusion will be referred to the Lead Commissioner for FTD for concurrence.
- Provide the Recipient with a written determination in accordance with the schedule. The written response may include a requirement for the Recipient to revise one or more product(s) that were included in the CPR.

The Recipient shall:

- Prepare a CPR Report for each CPR that discusses the progress of the Agreement toward achieving its goals and objectives. This report shall include recommendations and conclusions regarding continued work of the projects. This report shall be submitted along with any other products identified in this scope of work. The Recipient shall submit these documents to the Commission Agreement Manager and any other

EXHIBIT A

Scope of Work

designated reviewers at least 15 working days in advance of each CPR meeting.

- Present the required information at each CPR meeting and participate in a discussion about the Agreement.

Commission Agreement Manager Products:

- Agenda and a list of expected participants
- Schedule for written determination
- Written determination

Recipient Product:

- CPR Report(s)

Task 1.3 Final Meeting

The goal of this task is to closeout this Agreement.

The Recipient shall:

- Meet with Energy Commission staff to present the findings, conclusions, and recommendations. The final meeting must be completed during the closeout of this Agreement.

This meeting will be attended by, at a minimum, the Recipient, the Commission Grants Office Officer, and the Commission Agreement Manager. The technical and administrative aspects of Agreement closeout will be discussed at the meeting, which may be two separate meetings at the discretion of the Commission Agreement Manager.

The technical portion of the meeting shall present an assessment of the degree to which project and task goals and objectives were achieved, findings, conclusions, recommended next steps (if any) for the Agreement, and recommendations for improvements. The Commission Agreement Manager will determine the appropriate meeting participants.

The administrative portion of the meeting shall be a discussion with the Commission Agreement Manager and the Grants Officer about the following Agreement closeout items:

- What to do with any equipment purchased with Energy Commission funds (Options)
- Energy Commission's request for specific "generated" data (not already provided in Agreement products)
- Need to document Recipient's disclosure of "subject inventions" developed under the Agreement

EXHIBIT A
Scope of Work

- “Surviving” Agreement provisions
- Final invoicing and release of retention
- Prepare a schedule for completing the closeout activities for this Agreement.

Products:

- Written documentation of meeting agreements
- Schedule for completing closeout activities

Task 1.4 Monthly Progress Reports

The goal of this task is to periodically verify that satisfactory and continued progress is made towards achieving the goals and objectives of this Agreement on time and within budget.

The objectives of this task are to summarize activities performed by the Recipient and subgrantees during the reporting period, to identify activities planned for the next reporting period, to identify issues that may affect performance and expenditures, and to form the basis for determining whether invoices are consistent with work performed.

The Recipient shall:

- Prepare a Monthly Progress Report which summarizes all Agreement activities conducted by the Recipient for the reporting period, including an assessment of the ability to complete the Agreement within the current budget and any anticipated cost overruns. Each progress report is due to the Commission Agreement Manager within 10 days of the end of the reporting period agreed to at the Kick-Off Meeting. The recommended specifications for each progress report are contained in Section 6 of the Terms and Conditions of this Agreement.
- In the first Monthly Progress Report and first invoice, document and verify match expenditures and provide a synopsis of project progress, if match funds have been expended or if work funded with match share has occurred after the notice of proposed award but before execution of the grant agreement. If no match funds have been expended or if no work funded with match share has occurred before execution, then state this in the report. All pre-execution match expenditures must conform to the requirements in the Terms and Conditions of this Agreement.

Product:

- Monthly Progress Reports from Recipient.

EXHIBIT A

Scope of Work

Task 1.5 Final Report

The goal of the Final Report is to assess Recipient's success in achieving its goals and objectives, advancing science and technology, and providing energy-related and other benefits to California.

The objectives of the Final Report are to clearly and completely describe the project(s) administered by the Recipient project(s), including the purpose, approach, activities performed, results, and advancements in science and technology; to present a public assessment of the success of the project(s) as measured by the degree to which goals and objectives were achieved; to make insightful observations based on results obtained; to draw conclusions; and to make recommendations for further projects and improvements to the FTD project management processes.

The Final Report shall be a public document. If the Recipient has obtained confidential status from the Energy Commission and will be preparing a confidential version of the Final Report as well, the Recipient shall perform the following activities for both the public and confidential versions of the Final Report.

The Recipient shall:

- Prepare an Outline of the Final Report.
- Prepare a Final Report following the approved outline and the latest version of the Final Report guidelines which will be provided by the Commission Project Manager. The Commission Agreement Manager shall provide written comments on the Draft Final Report within fifteen (15) working days of receipt. The Final Report must be completed at least 60 days before the end of the Agreement Term.
- Submit one bound copy of the Final Report with the final invoice.

Products:

- Draft Outline of the Final Report
- Final Outline of the Final Report
- Draft Final Report
- Final Report

Task 1.6 Identify and Obtain Matching Funds

The goal of this task is to ensure that the match funds planned for each project under this Agreement are obtained for and applied to this Agreement during the term of this Agreement.

The costs to obtain and document match fund commitments are not reimbursable through this Agreement. Although the Energy Commission budget for this task will be zero dollars, the Recipient and/or subgrantee may utilize match funds for this task.

EXHIBIT A

Scope of Work

Match funds shall be spent concurrently or in advance of Energy Commission funds for each task during the term of this Agreement. Match funds must be identified in writing and the associated commitments obtained before the Recipient and/or subgrantee can incur any costs sought to be reimbursed.

The Recipient shall:

- Prepare a letter documenting the match funding committed to this Agreement and submit it to the Commission Agreement Manager at least 2 working days prior to the kick-off meeting. If no match funds were part of the proposal that led to the Energy Commission awarding this Agreement and none have been identified at the time this Agreement starts, then state such in the letter. If match funds were a part of the proposal that led to the Energy Commission awarding this Agreement, then provide in the letter a list of the match funds that identifies the:
 - Amount of each cash match fund, its source, including a contact name, address and telephone number and the task(s) to which the match funds will be applied.
 - Amount of each in-kind contribution, a description, documented market or book value, and its source, including a contact name, address and telephone number and the task(s) to which the match funds will be applied. If the in-kind contribution is equipment or other tangible or real property, the Recipient shall identify its owner and provide a contact name, address and telephone number, and the address where the property is located.
- Provide a copy of the letter of commitment from an authorized representative of each source of cash match funding or in-kind contributions that these funds or contributions have been secured. For match funds provided by a grant a copy of the executed grant shall be submitted in place of a letter of commitment.
- Discuss match funds and the implications to the Agreement if they are reduced or not obtained as committed, at the kick-off meeting. If applicable, match funds will be included as a line item in the progress reports and will be a topic at CPR meetings.
- Provide the appropriate information to the Commission Agreement Manager if during the course of the Agreement additional match funds are received.
- Notify the Commission Agreement Manager within 10 days if during the course of the Agreement existing match funds are reduced. Reduction in match funds must be approved through a formal amendment to the Agreement and may trigger an additional CPR.

EXHIBIT A

Scope of Work

Products:

- A letter regarding match funds or stating that no match funds are provided
- Copy(ies) of each match fund commitment letter(s) (if applicable)
- Letter(s) for new match funds (if applicable)
- Letter that match funds were reduced (if applicable)

Task 1.7 Identify and Obtain Required Permits

The goal of this task is to obtain all permits required for work completed under this Agreement in advance of the date they are needed to keep the Agreement schedule on track.

Permit costs and the expenses associated with obtaining permits are not reimbursable under this Agreement. Although the Energy Commission budget for this task will be zero dollars, the Recipient shall budget match funds for any expected expenditures associated with obtaining permits. Permits must be identified in writing and obtained before the Recipient can make any expenditure for which a permit is required.

The Recipient shall:

- Prepare a letter documenting the permits required to conduct this Agreement and submit it to the Commission Agreement Manager at least 2 working days prior to the kick-off meeting. If there are no permits required at the start of this Agreement, then state such in the letter. If it is known at the beginning of the Agreement that permits will be required during the course of the Agreement, provide in the letter:
 - A list of the permits that identifies the:
 - Type of permit
 - Name, address and telephone number of the permitting jurisdictions or lead agencies
 - The schedule the Recipient will follow in applying for and obtaining these permits.
- Discuss the list of permits and the schedule for obtaining them at the kick-off meeting and develop a timetable for submitting the updated list, schedule and the copies of the permits. The implications to the Agreement if the permits are not obtained in a timely fashion or are denied will also be discussed. If applicable, permits will be included as a line item in the Progress Reports and will be a topic at CPR meetings.
- If during the course of the Agreement additional permits become necessary, provide the appropriate information on each permit and an updated schedule to the Commission Agreement Manager.
- As permits are obtained, send a copy of each approved permit to the Commission Agreement Manager.

EXHIBIT A

Scope of Work

- If during the course of the Agreement permits are not obtained on time or are denied, notify the Commission Agreement Manager within 5 working days. Either of these events may trigger an additional CPR.

Products:

- Letter documenting the permits or stating that no permits are required
- A copy of each approved permit (if applicable)
- Updated list of permits as they change during the term of the Agreement (if applicable)
- Updated schedule for acquiring permits as changes occur during the term of the Agreement (if applicable)

Task 1.8 Obtain and Execute Subcontracts and Subgrant Agreements

The goal of this task is for Recipient to identify any subcontracts required to carry out the tasks under this Agreement and to procure them consistent with the terms and conditions of this Agreement and the Recipient's own procurement policies and procedures. It will also provide the Energy Commission an opportunity to review the subcontracts to ensure that the tasks are consistent with this Agreement, and that the budgeted expenditures are reasonable and consistent with applicable cost principles.

The goal of this task is also for Recipient to also execute subgrant agreements for each project under this Agreement, and to execute them consistent with the proposed goals, objects and tasks of each project as described in Recipient's application and with the terms and conditions of this Agreement including any special terms and conditions and other provisions required to be flowed down to subgrantees.

The Recipient shall:

- Prepare a letter documenting the subcontracts required to conduct this Agreement, and submit it to the Commission Agreement Manager at least 2 working days prior to the kick-off meeting. If there are no subcontracts required at the start of this Agreement, then state such in the letter. If it is known at the beginning of the Agreement that subcontracts will be required during the course of the Agreement, provide in the letter:
 - A list of the subcontracts that describes the anticipated maximum budget and general scope of work for each,
 - A description of the procurement process to be used, and
 - The schedule the Recipient will follow in applying for and obtaining these subcontracts
- Submit a draft of each subcontract and subgrant agreement that will include a budget with the information required in the budget details to the Commission Agreement Manager for review and approval, and incorporate any changes recommended by the Commission Agreement Manager.

EXHIBIT A

Scope of Work

- Submit a final copy of each executed subcontract and subgrant agreement.

Products:

- Letter describing the subcontracts needed, or stating that no subcontracts are required
- Draft subcontracts and subgrant agreements
- Final subcontracts and subgrant agreements

1.9 Steps to Add Subgrantee

The goal of this task is to provide an optional procedure that enables the Energy Commission and Recipient to amend this Agreement consistent with any revised Notice of Proposed Awards which may allocate funding for a project proposed by the Recipient but not funded under the original Agreement.

The Recipient shall:

- Upon publication of any revised Notice of Proposed Awards, review and execute an amended Agreement proposed by the Commission.
- After execution of amended Agreement, Recipient shall carry out Task 1.8 to prepare a new subgrant agreement for the new project.

Products:

- Executed amended Agreement.
- Draft and final subgrant agreements.

1.10 Review and Validate Subgrantee Invoices

The goal of this task to ensure that the Recipient is actively reviewing and validating all invoices submitted by any subgrantee for their compliance with the Payment of Funds provision (Terms and Conditions, Section 17.)

The Recipient shall:

- Review and validate all invoices for reimbursements from subgrantees for compliance with the Payment of Funds provisions in this Agreement.
- Confirm that subgrantee is meeting the match share requirements.

Products:

- Invoice accompanied by Recipient certification that the subgrantee invoice complies with all Payment of Funds provisions in this Agreement.

EXHIBIT A

Scope of Work

TECHNICAL TASKS

Each technical task is for a single subgrantee project. Subgrants executed by Recipient shall include sufficient detail as reflected in subgrantee's application to adequately reflect deliverables proposed. Recipient will provide demonstration of deliverables identified in each of the subtasks identified here.

TASK 2 CLEAN AIR POWER: NAVISTAR NATURAL GAS MAXXFORCE 13

The goal of this task is to enter into an agreement with Clean Air Power to demonstrate and commercialize a natural gas version of the Navistar MaxxForce 13 engine using 12 trucks in California's South Coast and Mojave Desert air basins. The agreement tasks should include at a minimum demonstration fleet selection, vehicle deployment of natural gas tractors to the test fleets, monitoring and characterizing the in-use performance of the demonstration vehicles, gathering vehicle performance data and feedback from fleet operators, and optimizing demonstration vehicles based on input, .

The Recipient shall:

- Provide substantiation of the achievement of tasks in the project schedule in Clean Air Power's application as follows:
 - Prepare and submit a list of the participating
 - Prepare and submit an initial operation summary report
 - Selecting demonstration fleets.
 - Conducting all tasks required to place vehicle units into service in the selected demonstration fleets.
 - Prepare and submit baseline information and vehicle demonstration In-Use Test Plan.
 - Implementing In-Use Test Plan.
 - Implementing system modifications and verifying system improvements in accordance with the In-Use Test Plan.
 - Prepare and submit an In-Use Test Report.

Products:

- List of the participating fleets in the program
- Initial Operation Summary Report
- In-Use Test Plan
- In-Use Test Report

EXHIBIT A
Scope of Work

TASK 3 U.S. HYBRID CORPORATION: PLUG-IN LNG HYBRID HEAVY-DUTY TRUCK (PLHT)

The goal of this task is to enter into an agreement with U.S. Hybrid Corporation to demonstrate LNG powered, heavy duty drayage trucks with plug-in hybrid electric power train technology in California. The agreement tasks should include at a minimum PLHT system configurations and specifications using an existing prototype defined for alternative LNG heavy duty drayage truck applications; fabricating all components and integrate all necessary subsystems in the demonstration vehicle(s); testing each component and integrating subsystems, conducting full integration of systems into the vehicle(s), and testing and validating performance on dynamometers and in the field.

The Recipient shall:

- Provide substantiation of the achievement of tasks in the project schedule in U.S. Hybrid Corporation's application as follows:
 - Developing performance specifications.
 - Generating operator, service and maintenance, and emergency response manuals.
 - Fabricating, testing, and integrating all subsystems and systems into the vehicles, and validating their performance.
 - Prepare and submit:
 - PLHT system performance specification(s)
 - Operator Manual
 - Service and Maintenance Manual
 - Emergency Response Team Manual
 - Components Fabrication Report
 - Sub-System Integration Report
 - PLHT Operation Report

Products:

- PLHT system performance specification(s)
- Operator Manual
- Service and Maintenance Manual
- Emergency Response Team Manual
- Components Fabrication Report
- Sub-System Integration Report
- PLHT Operation Report