



YEARLY ACTIVITY PLAN (YAP) - FY '09 – FY10

Division/Attached Agency:	High Technology Development Corporation
Program Name:	Hawaii Center for Advanced Transportation Technologies(HCATT)
Program ID:	BED 143

I. PROGRAM PLANNING

Problem, issue or opportunity statement: Describe the problem, issue and/or opportunity your program is attempting to respond to.

HCATT is a federally funded program established to develop and demonstrate advanced transportation technologies for both military and commercial applications. Executive Order (EO) 13423 requires federal agencies to improve energy efficiency, reduce greenhouse gas emissions, implement renewable energy projects, and reduce petroleum consumption. Department of Defense (DOD) is the largest user of petroleum among federal agencies. Air Force is the largest petroleum user in DOD. Further, the projects HCATT takes on develop integration skills required for Hawaii to be more petroleum-independent with regards transportation. Not only is Hawaii currently one of the highest in the nation for use of petroleum, most of it comes from abroad, making it a security matter. By embracing and fostering renewable energy sources in a practical manner, Hawaii can also improve its business environment, as high energy cost is cited as one of the reasons companies relocate or prevents others from establishing a point of presence on the islands.

Problem: State and Military dependence on imported fossil fuels for energy and transportation needs.

Issue: Initiate steps to meet requirements of EO 13423, which in turn supports HCEI.

Opportunity: The Air Force established the National Demonstration Center for Alternative Fuel Vehicles at Hickam Air Force Base (HAFB) to facilitate demonstration/validation of the latest fuel efficient and environmentally compliant technologies for use in vehicles and ground support equipment. HCATT was selected to develop these technologies and manage the Center at HAFB, which is the leading hydrogen and fuel cell vehicle activity within DOD. Alternative Energy Program funds are available in FY09 for both Air Force and Army projects, and HCATT has an opportunity to participate in these projects. Additionally, Hawaii Volcanoes National Park now seeks support from HCATT to introduce zero-emission, hydrogen powered, fuel cell hybrid tour buses into the park. This is a joint initiative wherein HCATT will develop the buses and the Hawaii Natural Energy institute (HNEI) will install the hydrogen infrastructure to fuel the buses. The project capitalizes on the long term collaboration between HCATT and HNEI. Funding for the buses will be provided by the Federal Transit Administration; funding for the hydrogen infrastructure will be provided by the US Department of Energy and the State Hydrogen Fund. These projects accelerate the development of new technologies, thereby assisting manufacturers in achieving commercialization.

This opportunity supports the goals of the Hawaii Clean Energy Initiative by engaging the largest petroleum user in the State for energy and transportation – the military. By establishing and expanding the use of alternative fuels produced by renewable energy, HCATT is enabling the local military bases to serve as an integrated clean energy model for the State and all of DOD.

Need and partners: Provide quantitative evidence to show the scope and nature of the problem or opportunity you are working on. Identify partners you will be working with to address the problem, issue and/or opportunity. Describe why government should be part of the solution.

Need:

Under EO 13423, agencies must reduce greenhouse gas emissions by 3% annually, reduce petroleum consumption by 2% annually, and increase use of renewable and alternative fuels by 10% annually.

Partners:

Air Force, Army, National Park Service, Federal Transit Administration, Hawaii Natural Energy Institute

Note: This form was created using the *W. K. Kellogg Foundation Logic Model Development Guide, January 2004.*

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(HNEI).

Government is involved by design. HCATT is a federally funded program to develop and demonstrate technologies that can assist agencies in meeting the specified need.

Desired results (outputs, outcomes and impacts): What will success look like? Describe what you expect to achieve in the short-term (0-2 years) and long-term (2-6 years).

Outputs: (short-term)

Sustaining hydrogen production and vehicle refueling operations, including introduction of renewable energy.

Technology demonstrations.

Additional zero and low emission vehicles at HAFB.

Two prototype hydrogen powered tour buses operating in Volcanoes National Park.

Outcomes: (short-term)

Expansion of hydrogen fuel cell use for transportation and stationary applications.

Model systems for worldwide deployment.

Commercialization of advanced technology products.

Renewable hydrogen production.

Impact: (long-term)

Less demand for imported oil.

Energy security and independence.

Reduction in pollution from vehicle emissions.

Influential Factors: List the factors you believe will support or hinder your ability to impact the problem or opportunity.

Congressional support.

Federal funding.

Funding agencies' motivation (Air Force, Army, Federal Transit Administration).

Willing participation by users and operators of advanced technologies.

Volcanoes National Park motivation to introduce zero emission tour buses.

Manufacturers' willingness to participate.

State of technology.

State contracting/procurement policies.

Cost share requirements.

Strategies: List the "best practices" that have helped other programs achieve the kind of results your program promises.

Demonstrate technologies under real life mission scenarios.

Establish technology developer/operator cooperation to support future product acquisition.

Maintain readily available maintenance/service support (local) throughout project life cycle.

Build upon successful technology demonstrations; don't "reinvent the wheel" with each new project introduction.

Assumptions: State the assumptions behind *how* and *why* the change strategies you have identified will work. Use 'If - then' statements, i.e. "if _____ then _____ happens."

If the Defense Appropriations Bill includes funding for Alternative Energy Programs, then HCATT will be able to pursue funds for continuing the Air Force program at HAFB and initiate projects for the Army in Hawaii.

If the U.S Department of Transportation completes the Interagency Agreement to transfer funds to the Department of Interior, then Hawaii Volcanoes National Park will provide funding to HCATT to develop the hydrogen powered tour buses for demonstration and evaluation in the park.

If HCATT selects companies and technologies that result in successful demonstrations, then the federal agencies can pursue procurement of the technologies to meet their needs under EO 13423.

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II. PROGRAM IMPLEMENTATION

Resources: Describe the resources available to support your program.

Federal funds; HCATT Facility and equipment; contractors; Air Force Advanced Power Technology Office at Robins AFB in GA; 15th Airlift Wing at HAFB; Army Tank Automotive Research, Development, and Engineering Center in Warren, MI; Army Installation Management Command, Pacific Region, Ft. Shafter, HI; HNEI; Volcanoes National Park; Kilauea Military Camp, HI.

Activities: Describe each of the activities you plan to conduct within your program.

Educate/inform congressional staff.
Solicit/review white papers and proposals.
Submit white papers and proposals to appropriate federal agencies.
Generate project list.
Brief Federal Projects Committee.
Draft contracts.
Coordinate user demonstrations/evaluations.
Collect data.
Conduct program reviews; monitor project progress.

Outputs: For each program activity, identify what outputs you aim to produce.

Proposals, contracts, reports, presentations, infrastructure, technology demonstrators.

Outcomes: Identify the short-term (0-2 years) and long-term (2-6 years) outcomes you expect to achieve.

This is a complex program comprised of many advanced technology projects, each with its own outcome relative to an expected performance, measured by contract deliverables. The final deliverable under each project may be an end item in and of itself or a subset of a larger initiative. Examples of typical outcomes for both the short and long terms follow.

Short term:

Model systems, zero-emission vehicles, multi-agency collaboration.

Long term:

Acquisition-ready products, cost reductions for advanced technologies, sustainable infrastructure.

Impact: Describe the lasting impact you anticipate.

State of Hawaii, HAFB, and Volcanoes National Park are recognized leaders in hydrogen powered vehicle operations; energy security; reduced dependence on imported petroleum; accelerated market introduction; support for renewable hydrogen economy.

III. PROGRAM EVALUATION

Indicators: Describe what SMART ('specific; measurable; action-oriented; realistic; and timed') indicators can be collected that would convey the status of your program.

Vehicle and equipment performance reports.
Operator surveys.

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c.

APPROVED

DISAPPROVED

Director - Signature

Date