

REQUEST FOR INFORMATION (RFI)
Experimental Forward Operating Base (ExFOB) 2011

INTRODUCTION:

This announcement constitutes an RFI notice for planning purposes. This is NOT a Request for Proposals. NO SOLICITATION DOCUMENTS EXIST AT THIS TIME. This RFI does not constitute a commitment, implied or otherwise, that the USMC Expeditionary Energy Office (E2O) will take a procurement action in this matter. Neither E2O nor the Government will be responsible for any cost incurred in furnishing this information.

The USMC E2O is interested in gathering information to further its understanding of currently available technologies that could enhance the logistics sustainability of remote Forward Operating Bases (FOBs) engaged in combat operations. Specific areas of interest for this RFI include: (1) Concentrated solar harvesting technologies to produce power and hot water at remote FOBs; and (2) Technologies to increase tactical vehicle fuel efficiency while exporting power at idle or static conditions. Technologies of interest are those that would most rapidly and effectively enhance the self-sufficiency of FOBs roughly the size of a Marine Corps Company (approximately 200 Marines). Information is requested in the form of brief technology descriptions.

GENERAL BACKGROUND:

In March 2010, the USMC established its first temporary Experimental Forward Operating Base (ExFOB) at Quantico, Virginia. The ExFOB was established to provide industry with an opportunity to demonstrate their capabilities to enhance the USMC's self-sufficiency and reduce its need for fuel and water logistics. Following the first ExFOB Third Battalion, Fifth Marines (3/5) was trained and deployed to combat operations with renewable and energy efficient technologies demonstrated during this inaugural ExFOB. In less than a year technologies demonstrated at ExFOB were deployed to combat for further end-user evaluation, and have helped guide requirements and investment decisions.

In August 2010, ExFOB was established at the Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms, California. Again technologies were identified that showed potential for reducing fuel and water demand on the battlefield. These technologies include hybrid PV-generator-battery systems, solar powered direct current (DC) air conditioners, and solar powered DC coolers. These systems will be evaluated further during the spring of 2011 to determine potential impact on the battlefield. If successful, deployment of these technologies for end-user evaluation and testing will occur during the summer of 2011.

The rapid deployment of 3/5 proved to be highly successful and has already resulted in changes to USMC's requirements documents, acquisitions, and investment decisions. ExFOB has provided the USMC the ability to mitigate decision making risks in an environment that vendors and government can collaborate real-time in the field with actual capabilities operating in a representative combat environment.

Information received in response to this RFI is intended to serve two purposes. (1) Technology descriptions will help formulate the Science , Technology and Acquisition planning necessary to mature technologies toward fieldable solutions; and (2) Technology descriptions may result in invitations for equipment manufacturers to demonstrate their technologies at the ExFOB 2011 at no cost or risk to the Government, from 11 through 20 August 2011, if the manufacturer indicates that a product or prototype would be sufficiently developed for a conceptual demonstration by this date. This ExFOB event will be conducted in conjunction with the U.S. Army through their Expedited Modernization Initiative Procedure (EMIP) process.

SPECIFIC INFORMATION OF INTEREST:

Concentrated Solar Energy Harvesting: Solar energy is the only realistic renewable energy source available for harvesting in the expeditionary environment. During the first two ExFOB vendors demonstrated various traditional small scale photovoltaic (PV) solar technologies. The issue with small scale traditional PV technologies are low efficiency and large area required to harvest enough solar to support a company-sized FOB, approximately 5kW range and below. The USMC is interested in investigating solar concentrating technologies that reduce the area required to harvest solar energy at the 5kW and below. In addition to an interest in providing small renewable power the USMC is interested in concentrated solar technologies that produce hot-water for health and hygiene. Technologies of interest will demonstrate the ability to utilize solar energy to reduce fuel demand for company-sized FOBs. Possibilities might include, but are not limited to the following:

1. Concentrated Solar Harvesting Systems i.e., lens-focused PV, solar thermal dishes powering Sterline engines, etc.; and
2. Concentrated Passive Solar Water Heating

Increase Fuel Efficiency of Tactical Vehicles at Idle or Static: Often Marines at FOBs idle their tactical vehicles to provide power to critical combat systems like radios, laptops, blue force tracker, etc. For example, the Medium Tactical Vehicle Replacement (MTVR) can maintain 2.4kW of power to off-board equipment. To provide this power the MTVR consumes an average of .8 gallons of fuel per hour. This is a highly inefficient method to provide off-board power considering a typical 10kW tactical generator only consumes .92 gallons per hour. In addition, USMC tactical vehicles have become significantly less fuel efficient due to the addition of significant weight from armor and other Warfighter requirements, and continue to require increasing on-board power due to the demand of new electronic systems (i.e. IED jammers, radios, vision devices, communication equipment, etc.). Both of these issues result in greater fuel demand at FOBs, requiring significant logistics support that the USMC would like to reduce. The USMC is interested in improving the fuel efficiency of its tactical vehicles and looking for ways to more efficiently power both on and off-board electronic systems. Possibilities might include, but are not limited to the following:

1. Bolt-On Auxiliary Power Units;
2. Improve Fuel Efficiency at Idle/Stationary with No Degradation of Driving Performance; and
3. Improve overall fuel efficiency through improved engine/power train efficiencies, as well as any other automotive technologies such as cold and hot weather idle free solutions for vehicle

climate control, reduction of parasitic loads, or any other automotive solutions designed to improve vehicle fuel efficiency.

SUBMISSION PROCESS AND DUE DATE:

The ExFOB team is partnered with the Army's Expedited Modernization Initiative Procedure (EMIP). Please go to the EMIP website below to determine how to submit information papers for technologies for the ExFOB 2011. The due date for all submissions is midnight on 29 April 2011. Additional information regarding the joint Army/USMC review process and the August 2011 EXFOB industry demonstration shall be provided to those who submit information papers pursuant to the standard Army Expedited Modernization Initiative Procedure (EMIP), Component Technology Demonstrations process at:
<http://peocscss.tacom.army.mil/EMIP/home.html>

NOTE: This RFI is issued for the purpose of determining market capability of sources and does not constitute an Invitation for Bid (IFB), a Request for Proposal (RFP), a Request for Quote (RFQ) or an indication that the Government will contract for any of the items and/or services contained in this notice. No solicitation document exists at this time. All information received in response to this notice that is marked Proprietary will be handled accordingly. Responses may not include Classified material. Responses to this notice will not be returned. No reimbursement will be made for any costs to provide information in response to this announcement or any follow-up information requests. Information contained herein is based on the best information available at the time for publication, is subject to revision, and is not binding upon the Government. Availability of any formal solicitation will be announced under a separate Federal Business Opportunities (FedBizOpps) announcement.