

REQUEST FOR INFORMATION (RFI)
ONR RFI Announcement # 12-RFI-0003
Title: Compact Rep-Rate Pulsed Power for Driving Railguns

I. DISCLAIMER:

This announcement constitutes a Request for Information (RFI) for the purpose of determining market capability of sources or obtaining information. It does not constitute a Request for Proposals (RFP), a Request for Quote (RFQ) or an indication that the Government will contract for any of the items and/or services discussed in this notice. Any formal solicitation that may subsequently be issued will be announced separately through Federal Business Opportunities (FedBizOpps). Information on the specific topics of interest is provided in the following sections of this announcement. Neither ONR nor any other part of the federal government will be responsible for any cost incurred by responders in furnishing this information.

II. BACKGROUND:

The Navy is developing Electromagnetic (EM) Railgun systems for long-range volume-fires missions. To drive these EM-launchers, a high-energy and high-average-power pulsed power system (PPS) is required that can operate repetitively at the firing rate of the launcher. Of the different pulsed power technologies, PPS based on capacitor energy storage are considered the most appropriate for the Navy mission. This type of PPS currently operates at the appropriate energy level in Railgun laboratory facilities, but is larger than required, and operates in single-shot mode (relatively low average power).

Over the past two years, the Office of Naval Research (ONR) has been developing compact, rep-rate PPS designs and seeks to build and demonstrate a system based on these or alternate designs. See Attachment 1 for a basic diagram of the design concept.

This RFI was previously posted as Request Number: 10-RFI-0001 "Compact Rep-Rate Pulsed Power for Driving Railguns" by the Department of the Navy Office of Naval Research in November 2009. Numerous responses were received at the time, primarily from US sources, and as a result the state of the technology and various approaches have been identified within the US Pulsed Power community. This RFI is being re-released seeking information from non-US vendors, governments and sources to identify new concepts, areas of research and approaches to solving the stated PPS need.

This is not a solicitation for proposals. ONR will not be responsible for any costs incurred in furnishing this information. Based on the outcome of the written responses received under this RFI, ONR may amend its PPS design/performance requirements and subsequently issue a Broad Agency Announcement (BAA) or Request for Proposals (RFP) for PPS prototype development.

III. SPECIFIC INFORMATION OF INTEREST:

In order to meet the Navy Railgun requirements, the PPS must be able to store up to 200MJ of energy and deliver this energy to the launcher at a rate of once every 6 seconds (10 rounds per

minute), for bursts of 100's of shots. Maximum peak currents delivered to the launcher are in the range of to 6 MA. The system must also include all the required ancillaries (prime power, charging, cooling, and controls) and must be modular and transportable. System must be scalable – a fraction of the total system can operate independently and the energy capability can be increased/decreased by adding/subtracting modules as necessary. Reducing system volume is important, but this has to be balanced with system fault tolerance and cost. The energy density goal for the pulsed power component (excluding bus-work to launcher) is 1 MJ/m³ or better.

IV. SUBMISSION INSTRUCTIONS and FORMATTING REQUIREMENTS

- a. Responses are requested no later than **15 June 2012 at 1600**. Any response received after this date will also be considered but may not be included in initial reporting or assessments.
- b. All responses should be submitted electronically in PDF format and emailed to the technical point of contact: **Ryan Hoffman (ryan.hoffman@navy.mil)**. The subject line of the email should read as follows “RFI: Compact Rep-Rate Pulsed Power for Driving Railguns from Non-US Sources.”
- c. All responses must be unclassified. No classified response will be accepted. All information received in response to this RFI that is marked proprietary will be handled accordingly. Responses to this notice will not be returned.
- d. Recommended content and submission organization as follows:
 1. Cover Sheet – RFI number and name, address, company, technical point of contact, with printed name, title, email address and date.
 2. Table of Contents with page numbers .
 3. Technical data to include an assessment paper (marked proprietary in nature) discussing the technical challenges inherent in the Navy’s draft PPS design and the available solutions to each of those challenges. Evidence to validate each solution should be provided. If possible, this paper should not exceed 15 pages including charts/graphs/illustrations.

No cost or pricing information should be provided. Any received will be deleted and destroyed.

V. QUESTIONS AND POINT OF CONTACT

Questions of a technical nature regarding this RFI may be sent to the following Technical Point of Contact:

Name: Ryan Hoffman

Title: Technical Program Officer

Division Title: Naval Air Warfare and Weapons

Division Code: 352

Address: 875 N Randolph St, Arlington, VA, 22203-1995

Email Address: ryan.hoffman@navy.mil

V. ATTACHMENTS

(1): Rep-Rate Module Concept

Rep-Rate Module Concept

