Invitation for Proposals

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CUSTOMER ENERGY SOLUTIONS INTEREST GROUP (CESIG)

CEATI PROJECT No. CESIG-12-03

UTILITIES GUIDE TO PLUG LOAD PROLIFERATION IN RESIDENTIAL MARKETS

CEATI International Inc. (CEATI) invites the submission of proposals to perform research work on the following topic:

TITLE

Utilities Guide to Plug Load Proliferation in Residential Markets

INTRODUCTION

Plug loads are electronic "black boxes" or electronic devices that are neither hardwired nor included in the traditional categories of appliances, lighting, or HVAC. They include residential electronic equipment that plugs into wall outlets, such as charging devices, entertainment systems, communication devices, computers, small appliances and other similar household equipment. Entertainment and information/communication devices account for 90% of all plug loads in residences, and therefore represent the greatest opportunity for energy conservation. Most plug loads use energy even when they are powered off.

Electronic plug loads are the fastest-growing category of household energy use. Research indicates that the annual energy use of plug loads varies from about 10 to 20 percent of residential electricity use today, and is projected to grow to up to 30 percent of household energy use by 2030. This significant growth of electric power use in the residential sector has caught the attention of the utilities and agencies that supply or regulate power to the consumers, representing a large opportunity for energy conservation. With the exception of a few smart grid pilot projects, the plug power load variables, including opportunities for conservation, have not been aggregated and controlled. This is due to the ever-changing product designs, and the current difficulties in measuring the potential savings which could be achieved from controlling such devices, such as smart power strips and timers.

At this time, the sponsoring utilities would like to obtain "how to" advice on creating energy efficiency programs to curb the unnecessary plug load use; pointers on how to assist energy-conscientious customers contemplating plug load purchases; and strategies for measuring attributable savings and encouraging manufacturers to produce more energy-efficient electronics.

PROJECT OBJECTIVE

To obtain a utility guide on how to market and accurately measure and verify residential plug load Energy Conservation Measures (ECMs), and to plan and implement its control and conservation strategies.

SCOPE OF THE STUDY

The information produced for the utilities sponsoring this guide will be utilized by their staff in identifying plug loads, assessing their individual impacts on residential electricity consumption, identifying areas and strategies for saving electricity, and quantifying the energy savings potential. This information will enable the sponsoring utilities to consider any market programs and measures that will enable customers to save electricity and money.

The expected outcome of the study is to provide some effective recommendations to electric utilities to tap into energy savings opportunities from controlling this growing residential load.

TASKS

1. Identify and list various plug loads, or categories, that you plan to include in the guide. The sponsors reserve the right to make changes to this list prior to finalizing this assignment with the selected contractor.

2. Estimate (ranges of) power consumed by various plug loads, both when power is ON and when power is OFF. Describe special features of individual devices (e.g. settings for partial operation) or other opportunities for energy conservation for each plug load (e.g. smart power strips), if available. Where possible, describe typical operating behaviours and/or usage patterns such as how many hours spent in ON mode, OFF mode, unplugged, time needed for charging or updating (e.g. set top boxes) and quantify typical energy saving scenarios (e.g. home entertainment system or home office category). Suggest potential strategies for the measurement and verification of savings from suggested ECMs. Comment on opportunities for higher efficiency when products are in operation, and on opportunities for standardizing standby mode operation to maximize savings, especially in the entertainment and computer devices.

3. Identify and list utilities in the USA and Canada that have deployed plug load marketing programs. This task will include a summary listing of the existing programs. As well, it would be desirable to produce sample case studies for a small, medium and large utility describing the particular program's content and operation, as well as any comments regarding program/strategy successful deployments, or opportunities to make positive changes. It would be very helpful to identify key personnel who may be contacted by their peers in the sponsors' utilities.

POTENTIAL BENEFITS

Adopting common denominator strategies for small products (where product level specific specifications are less feasible) to improve the efficiency of hundreds of low power products that use external power supplies or battery charger systems

DELIVERABLES

The successful proponent is expected to prepare a ready-to-publish report on the results of the investigation and present the results to funding consortium members. The completed report must be submitted for CEATI approval in editable, electronic format (Microsoft Word). In addition, the platform and version should be specified for any software or programs to be developed.

Progress reports will also be required with the completion of the identified tasks.

The successful proponent is also expected to provide the following:

- A ten to fifteen (10-15) slide Power Point Presentation. This should be composed of three main sections:
  1. The factors motivating the initiation of the work;
  2. A description of the main findings;
  3. Summary of the conclusions and recommendations for future research.

- Contents for the Project's Technical Brief. This is a summary of the report (between 1,000 and 1,500 words), which is published separately by CEATI. Proponents are not responsible for the preparation of a ready-to-print Technical Brief, but solely to provide the contents for the following 4 sections: Background, Summary, Conclusions and Recommendations.
  1. The Report Background section should be short (approximately 200 words) and should detail the reasons the work was conducted.
  2. The Summary section should be approximately 700 words. It must provide a general description of the work program.
  3. The Conclusions section should be about 150 words and should provide a general outline of the key results (do not include specifics).
  4. The Recommendations section should be about 200 words and should include a description of the potential applications of the results.

Please note that all reporting must be submitted in English. If written English is not the author's strong suit, it is recommended that a technical writer be hired to review the document prior to submission.

BUDGET AND SCHEDULE

The proposal must contain a schedule and a quote of required remuneration for the work in US or Canadian dollars. All prices shall be presumed to be in Canadian dollars (CAD) unless explicitly specified otherwise in the proposal. Proponents' responses to this section must include a full breakdown of the budget and schedule, including an indication of rates and hours and the task allocation for the key personnel by task and must correspond to any phases or milestones outlined above. (Please refer to the Proposal Template for more information).

It is expected that this project can be completed (draft final report submitted for review and approval) **within 3 - 4 months of initiation**.

The proposal must include the names and qualifications of the key individuals who will be involved, as well as the name of the accountable manager.

CEATI is not bound to accept any proposal but any selection will take into account technical merit, qualifications, price and schedule. A proposal may be accepted in whole or in part. A commitment to proceed with the first phase of a multi-phase project does not automatically imply that the work of the subsequent phases will be undertaken.

ALTERNATIVE WORKS

Proponents shall generally follow the above description of work, but are encouraged to offer alternative works if these alternatives will meet the objectives and provide a better end product to the utilities sponsoring this work. Alternatives shall be fully described including logistics explaining why the alternate works are being offered and the benefits to be realized by the funding utilities. Where alternatives are proposed, separate budgets shall be calculated for each alternative.

SUBMISSION OF PROPOSALS

The consideration of proposals received will be limited to those who indicate their intent to employ a suitable experienced project team and who possess proper facilities to perform the work. Receipt of this "IFP" does not necessarily constitute a prior determination by CEATI that your organization has the requisite experience and facilities.

The proposal must be properly completed and executed in accordance with the CEATI guidelines available at http://www.ceati.com/technology-providers/submission-guidelines, and shall be submitted to CEATI as an attachment in Microsoft Word at the following website: http://prs.ceati.com/proposals/. Be sure to indicate project number "**CESIG-12-03**" on the submission form. For assistance, please contact us at 514-866-5377.

The successful proponent will be required to sign the CEATI Standard Agreement upon project initiation. Proponents are encouraged to contact CEATI (projects@ceati.com) and request a copy of these terms to review prior to submitting a proposal, if they are not already familiar with this Agreement.

CLOSING DATE FOR RECEIPT OF PROPOSALS

Thursday, January 26, 2012, 4:00 pm EST/EDT