

Invitation for Proposals

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TRANSMISSION UNDERGROUND CABLES INTEREST GROUP (TUCIG)

CEATI PROJECT No. IFP 12.02

**TECHNOLOGY REVIEW OF REAL TIME THERMAL RATING FOR
UNDERGROUND CABLE SYSTEMS**

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

TITLE

Technology Review of Real Time Thermal Rating for Underground Cable Systems

INTRODUCTION

Underground transmission projects require a substantial investment of both time and resource dollars. There is strong incentive for utilities to maximise the utilisation of these critical assets to avoid service interruption.

It is a common practice to use Distributed Temperature Sensing (DTS) systems based on fiber optic technology to monitor the cables temperature in real time over the entire cable run. Utilities use this real time temperature information to develop a “Real Time Temperature Cable Rating System” which extends the monitoring functionality and predicts cable performance under emergency situations.

PROJECT OBJECTIVES AND SCOPE

The objective of this study is to conduct a technology review of currently available products and packages for Real Time Thermal Rating of Cables.

Utilities wish to learn how the information provided by these systems allow network operators to establish temperatures and maximize power transfer without exceeding conductor limits under various ambient conditions.

The proponent should consider how these various systems are being applied, their respective functionality and associated operating experiences.

The study should discuss the comparative characteristics, performance and effectiveness of these systems so that utilities may refine their in house practices and be made aware of what systems are currently available.

The systems evaluated should be applicable to HPFF, SCFF and XLPE installed in duct banks or direct buried. (If the proponent has a particular expertise with a certain cable type, please indicate this in the proposal).

POTENTIAL BENEFITS

The project will provide a set of best practices to guide the refinement of Real Time Thermal Rating Systems for Underground Cables. A dependable and accurate Real Time Rating System for Underground Cables will allow network operators to maximize load transfer capability of the cable circuits within the operating temperature limit with certainty.

PROJECT STAGING

The following tasks are envisioned:

1. Conduct a review of Real Time Thermal Rating Systems for Underground Cables including a survey of TUCIG and non-member utilities to gather information about present practices and experiences with available Real Time Thermal Rating Systems.
2. Prepare a set of best practices to guide the refinement of Real Time Thermal Rating Systems currently in use.
3. Prepare a report and present findings and discuss the refinements at a TUCIG General Meeting.

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 report should contain findings of the review and a set of best practices to guide the refinement of a Real Time Thermal Rating Systems for Underground Cables. 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 on either a quarterly or milestone basis - normally these are scheduled to coincide 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 six (6) 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 “**TUCIG IFP 12.02**” 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 download a copy of the Standard Agreement for review from <http://www.ceati.com/technology-providers/submission-guidelines> prior to submitting a proposal, if they are not already familiar with these terms. Proponents may contact CEATI at projects@ceati.com to discuss any questions or concerns regarding these terms.

CLOSING DATE FOR RECEIPT OF PROPOSALS

Thursday, February 16, 2012, 4:00 pm EST