

OAK RIDGE NATIONAL LABORATORY

Managed by UT-Battelle for the Department of Energy

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June 29, 2001

Request for Proposal (RFP) No. 3400013229

Industries of the Future Plant-Wide Energy Efficiency Opportunity Assessments

Closing Date: October 15, 2001

UT- Battelle, LLC, acting under its Prime Contract No. DE-AC05-00OR22725 with the U.S. Department of Energy (DOE) invites you to submit a firm fixed price proposal to provide technical assistance to the Oak Ridge National Laboratory (ORNL).

The attached Statement of Work (SOW) dated June 26, 2001, describes the work to be performed.

We are requesting proposals from manufacturers for plant-wide assessments that will lead to substantial improvements in industrial energy efficiency, waste reduction, productivity and global competitiveness in support of the IOF Industries of the Future (IOF) strategy. The goal of such assessments is to develop a comprehensive strategy that will significantly increase plant energy efficiency and reduce environmental emissions.

Three similar Requests for Proposals were issued by ORNL during the past two years, and twenty-three proposals have been selected for subcontract awards.

We are issuing this RFP to expand industry participation in the IOF Plant-Wide Energy Efficiency Opportunity Assessments Program. This RFP will provide industry with another opportunity to identify and quantify energy consumers in a manufacturing facility that could result in improved or reduced energy consumption and improvements in process and manufacturing efficiency.

It is DOE's intent to increase industries participation in the IOF plant-wide assessment process across the United States and establish a solid and user-friendly database to assess and disseminate technology for reducing energy usage in the nine IOF industries. In order to reduce the financial burden on proposers, a public plant-wide promotional event is not a requirement in this RFP.

We intend to award multiple fixed-price subcontracts based on technical quality, price and the availability of funding. The maximum subcontract award will be \$100,000, and cost sharing of at least 50% is required. We anticipate that a period of performance of 6 to 12 months will be required to perform the assessments.

In evaluating proposals, we will be concerned with finding the most advantageous balance between expected performance and overall price (or cost) to us. You must, therefore, be persuasive in describing the merit and value of methods, characteristics, and features that will enhance potential performance, application or otherwise contribute to achieving our objectives.

Technical proposals must be limited to 10 single-spaced pages, exclusive of letters of intent, personnel resumes, and exhibits.

We will only award subcontracts to industrial "end-users". End-users are those companies that own and operate the facility that is the focus of the assessment. In addition to the end-user participation, a project team may include design and consulting engineering firms, manufacturers, distributors, utilities, energy service companies, state energy offices, research institutions, etc. End-user companies are encouraged to include such participation.

Please submit six (6) copies of your technical and business management proposals and a diskette containing an electronic version of the proposal on or before the above closing date. Address your proposal to my attention at the address above. For express mail or personal delivery, my address is:

UT – Battelle, LLC
Oak Ridge National Laboratory
Bethel Valley Road
Building 4500-N, Room 140, Mail Stop 6192
Oak Ridge, Tennessee 37831-6192

Evaluation Criteria and Proposal Instructions for this RFP are shown below. A pre-proposal conference is not planned. If you do not intend to submit a proposal, a prompt negative response, stating your reason would be appreciated.

All reference materials, except the Statement of Work, can be accessed at:

<http://www.ornl.gov/Procurement/>

If you have any questions regarding this RFP please contact me only by E-mail at the following Internet address: ebs@ornl.gov

Sincerely,

Mr. Shannon E. Bridges
Subcontract Administrator

Attachments:

Evaluation Criteria
Technical and Business Management Proposal Instructions
General Information
Statement of Work

Evaluation Criteria

The following criteria will be numerically weighed and scored by the indicated factors as part of the evaluation. (Maximum Score: 100 points)

Criterion 1 - Overall technical approach (60 points)

Overall technical approach includes: the breadth and scope of the study, uniqueness of techniques to identify direct or indirect energy savings opportunities, likelihood that the assessment will lead to identification of projects with significant energy, economic and productivity benefits in process and plant support systems (also referred to as plant utilities) areas, and insights gained from previous studies performed at the plant.

Criterion 2 - End User Capability (15 points)

The likelihood that identified energy efficiency opportunities will be implemented.

Criterion 3 - Project Management Approach and Team Capabilities (15 points)

The structure of the team; the overall approach employed by the team to assess the plant's energy efficiency opportunities; the capability of the team and the credibility of the schedule.

Criterion 4 - Economic Significance of Replication (10 points)

The comparative significance of estimated energy and cost savings if the implementation projects were to be replicated more broadly at the facility, within the end-user's company, at other companies within the same SIC, and more broadly throughout industry

Cost will be considered in the overall evaluation of proposals but will not be numerically weighted and scored. The evaluation will include an analysis of the realism of the cost proposal, the total price that we will pay, the cost to be borne by the proposed team, and the form of the cost share (cash, in-kind services, etc.). The industrial team is required to bear at least 50% of the total project cost.

We reserve the right to solicit, from any available sources, relevant information concerning your record of performance and use this information in evaluation and selection.

The goals of the IOF strategy will also be considered in the evaluation. We will select a diverse range of manufacturing plants in an effort to gain a balance across the IOF sectors, and we will seek diverse technical approaches. To understand how differences in energy prices, climatic conditions, and other factors affect the optimization strategy, we will also select a diverse range of geographic locations and plant sizes (number of employees or size of energy bill).

Technical Proposal Instructions

The technical proposal shall not exceed ten 8 ½ x 11-inch, single-spaced pages with text of no more than 14 characters per inch, exclusive of letters of intent, personnel resumes, project briefs, exhibits, and other enclosures or attachments. Elaborate presentations are not desired. The technical proposal should be concise and demonstrate a thorough understanding of the Statement of Work.

Since the technical proposal will indicate your capability to conduct the work described in this request for proposal, it shall be specific and complete in every detail. The proposal should not merely offer to perform the work in accordance with the statement of work, but should outline and describe the actual work proposed and how it is to be performed over what time period as specifically as possible. Any deviations and exceptions to the Statement of Work should be fully detailed and justified. Otherwise, they may be detrimental to the evaluation of your proposal.

To aid in the evaluation of the proposals, all proposals must follow the same general format. Therefore, the technical proposal should respond to the evaluation criteria and follow the format given below:

Table of Contents:

Provide a table of contents with page numbers for each section and subsections.

List of Figures and Tables:

Provide a list of any tables and figures contained in the proposal along with the page numbers.

Abstract of the Proposal:

Provide a concise summary of your proposal addressing all Evaluation Criteria consisting of:

- 1) Project Title
- 2) Brief overview of the project (200 words maximum)
- 3) Name of industrial end-user company submitting proposal
- 4) Management and technical point-of-contact at end-user company including name, title, address, phone, fax, and e-mail address
- 5) Supporting team member companies, organizations, and point-of-contact information
- 6) Facility name and location where the assessment is proposed

Technical Approach

This section shall describe the breadth and scope of the assessment to be undertaken and should:

- 1) describe the scope of the plant energy assessment and the types of opportunities expected to be assessed,
- 2) describe all methodologies, tools, techniques and engineering methods to be employed for the plant assessment, and

3) provide information by fuel type and major application of the energy usage within the plant. If preliminary assessments have been performed, indicate the results of those assessments, the insights gained from those assessments, and how the current proposed effort builds on (but does not duplicate) those previous assessments.

Proposals should be for plant energy assessments that have not been performed before at the proposed assessment site or at similar facilities within the proposing organization.

Prior assessments incorporating standard or known and demonstrated technology at similar facilities within the proposing organization will not be considered.

Proposals that only duplicate the combination of assessment methodology and industrial focus of previous industrial awards, (i.e., water pinch analysis in a pulp and paper plant) may not be responsive to this RFP. See Appendix B for a review of the assessment methods used to date.

It is anticipated that the [process area evaluation](#) will focus more on new, state-of-the-art and emerging technologies. The plant utility area will likely look more at available system best practices in the design, management, operations, and procurement of systems that support production applications such as steam, compressed air, cooling water systems, etc.

Proposals will be ranked more highly that have a comprehensive systems approach across the entire facility and follow a logical methodology for determining where the best energy efficiency opportunities exist. Unique techniques that examine plant operations but have an indirect effect on energy use (for example, reducing peaks and valleys in production schedules can yield energy reduction benefits) can be considered but will be given lower priority. Where energy efficiency gains are an indirect benefit of the approach an explanation of how the effect occurs and an estimate of its magnitude is required.

Higher priority will be given to proposals where a preliminary assessment has been completed and the proposed study seeks to build on the results of the previous study. A description of the previous study should be provided and the implications of the results should be fully described.

The plant must be located within the United States, and have a four-digit SIC code within the codes shown in Appendix A.

End User Capability

Address / answer the following: what are the company and plant energy efficiency goals and programs to achieve those goals; what energy efficiency improvements and energy savings have been accomplished over the last three to five years; what spending level (capital and operating) has been typical for energy efficiency related activities over the last several years; how does the topic of this RFP relate to the plant's on-going programs; what new or emerging process technologies have been adopted within the last five years; what resource commitment does the plant anticipate will be made available for projects identified in the assessment.

Project Management Approach

Describe the team and define the role each participant will have in the study. Priority will be given to proposals where the plant personnel have overall responsibility for the study and are heavily involved in the conduct of the study. Describe past experience in performing such assessments in the subject manufacturing plant or in similar plants. Present a project schedule. Priority will be given to those proposals that have a broad-based team including: management, engineering, maintenance, and procurement. Participation by outside energy service companies and engineering firms is also a plus.

Economic Significance of Replication

In general, proposals are desired which could lead to demonstrably higher U.S. industrial productivity, energy efficiency, environmental enhancement, and improved competitiveness once the application is replicated on a widespread basis throughout the United States. Estimate the number of similar plants corporate-wide where potential projects resulting from the assessment could be replicated with an estimate of the current annual energy consumption in those plants and an estimate of the potential savings attributable to replication. In addition, estimate the potential impact that could be attained throughout the industry (the same SIC code) and potential impacts throughout other industrial sectors.

Higher priority will be given to proposals that contain a well-developed plan for disseminating the assessment results within the organization (e.g., other plants within the corporation). Proposals that contain a plan for disseminating the assessment results within the proposing plant's industry section (e.g., metal casting industry) and working with industrial end users, DOE and trade organizations to promote the results from the plant assessments will be considered and the proposal will be given higher priority in the selection process.

Cost / Price

Provide the total cost / price of the assessment and describe the cost share breakdown by all parties (including consultants, suppliers, etc.) providing resources to the project. Also indicate the form of the cost share (e.g., cash, in-kind services) and the net cost / price to ORNL.

Letter of Intent

Two letters from management are required: One from the plant manager and one from a high-level corporate manager. The letter of intent should provide a good faith estimate of the amount of resources that could be used to support implementation of cost-effective projects identified. In the letter, the "hurdle" rate for a project should be indicated.

Business Management Proposal Instructions

Your proposal must be received on or before 4:00 p.m., Daylight Savings Time, at Oak Ridge, Tennessee, on the Closing Date shown on the RFP cover page. Any proposal received after the time specified but before award may be considered solely within the Company's discretion.

The proposal must be signed by an official authorized to bind your organization and must be accompanied by a statement to the effect that the proposal is firm for a period of not less than 90 calendar days after the closing date for receipt of proposals.

The following documents can be accessed at: <http://www.ornl.gov/Procurement/>

Submit a completed, signed copy of the document entitled, "Representations and Certifications (Oct 2000)".

Submit a completed, signed copy of the Subcontract Pricing Proposal Cover Sheet (1-98).

Submit a completed Subcontract Pricing Proposal [(1-98) (Form UCN 4638a)], and the required supporting documentation described in the Instructions on page 2 of the Form. All sub-tier subcontractors participating in the proposal must also submit a completed copy of this form or provide cost breakdown information in a similar format.

Submit a completed copy of the document entitled; "Exhibit 17 Rights to Proposal Data (Technical) (10-91)".

The provisions that may be made a part of any resulting subcontract are as follows. However, these documents do not need to be returned with your cost proposal unless you have exceptions.

General Terms & Conditions FP (Feb 2001)
Exhibit 9, Technical Data (Nov 2000)
Exhibit 17 Rights to Proposal Data (Technical) (10-91)

Any exceptions to the proposed provisions shall be made in writing and submitted with your proposal.

We are willing to make progress payments under the resulting subcontracts. We propose to pay 25% of our cost / price of the assessment after conducting a project "kick off" meeting at your facility and the remainder upon completion of the assessment.

General Information

Treatment of Proposal Information

- A.** Your proposal may include technical data and other data, including trade secrets and/or privileged or confidential commercial or financial information that you do not want disclosed to the public or used by the Company or the Government for any purpose other than proposal evaluation. To protect such data, you must specifically identify each page, including each line or paragraph thereof, containing the data to be protected and mark the cover sheet of the proposal with the following notice:

NOTICE: The data contained in page (s) _____ of this proposal have been submitted in confidence and contain trade secrets and/or privileged or confidential commercial or financial information and such data shall be used or disclosed only for evaluation purposes; provided, that if a subcontract is awarded to this Offeror as a result of or in connection with the submission of this proposal, the Company and the Government shall have the right to use or disclose the data herein to the extent provided in the subcontract. This restriction does not limit the Company and the Government's rights to use or disclose data obtained without restriction from any source, including the Offeror.

Reference to this notice on the cover sheet should be placed on each page to which the notice applies. The Company assumes no liability for disclosure or use of unmarked data and may use or disclose such data for any purpose.

- B.** Should a subcontract be awarded based on a proposal, it is policy in consideration of the award to obtain unlimited rights for the Government in technical data contained in the proposal unless the prospective subcontractor marks those portions of the technical information that he asserts as "proprietary data," or specifies those portions of such technical data that are not directly related to or will not be utilized in the work to be funded under this subcontract. "Proprietary data" are defined in DOE Acquisition Regulation 927.401 as technical data that embody a trade secret developed at private expense, such as design procedures or techniques, chemical composition of material, or manufacturing methods, processes, or treatments, including minor modifications thereof, provided that such data (1) are not generally known or available from other sources without obligation concerning their confidentiality; (2) have not been made available by the owner to others without obligation concerning their confidentiality; and (3) are not already available to the Government without obligation concerning their confidentiality. An Offeror that receives a subcontract award shall mark the data identified as proprietary by specifying the appropriate proposal page numbers to be inserted in the *Rights to Proposal Data (Technical)* clause below. Subject to the concurrence of the Company, information unrelated to the subcontract may be deleted from the proposal. The responsibility, however, of identifying technical data as proprietary or deleting it as unrelated rests with the prospective subcontractor.
- C.** The following clause shall be included in any subcontract where the Offeror seeks to protect proprietary proposal data. This clause is intended to apply only to technical data and not to other data such as privileged or confidential commercial or financial information.

Rights to Proposal Data (Technical); Except for technical data contained on page(s) _____, it is agreed that as a condition of the award of this subcontract, and notwithstanding the conditions of any notice appearing thereon, the Government shall have unlimited rights (as defined in the "*Technical Data*" clause contained in Exhibit 9 of this subcontract) in and to the technical data contained in the proposal dated _____, upon which this subcontract is based.

Subcontract Award

It is the intent of the Company to award based upon initial proposals received. Therefore, your proposal should be submitted initially on the most favorable terms, from a price and technical standpoint, that it can be submitted. However, we may consider proposal revisions and subsequent technical discussions, if we deem it necessary.

Proposal Expenses and Presubcontract Costs

This request does not commit the Company to pay for any costs incurred in the preparation and submission of a proposal or for any other costs incurred prior to the execution of a subcontract.

Acknowledgement of Amendments

If this request is amended, you must acknowledge receipt of amendments (by number and date) in your proposal transmittal letter. Any amendments issued against the subject RFP will be issued via E-mail. Formal notices will not be issued.

Statement of Work

June 26, 2000

Plant-Wide “Industries of the Future” Energy Efficiency Assessments

I. SUMMARY

The Oak Ridge National Laboratory (ORNL), in support of the U.S. Department of Energy's (DOE) Office of Industrial Technologies (OIT), is interested in obtaining proposals from industrial manufacturing plant sites for plant-wide assessments that will lead to substantial improvements in industrial energy efficiency, waste reduction, productivity and global competitiveness. OIT's goal in supporting such plant assessments is to reducing environmental emissions are of interest. Specifically, proposals are sought where teams are considering the adoption of best available and emerging technologies using a variety of tools, information, process engineering techniques, and BestPractices plant support (also known as plant utility) and process systems. ORNL anticipates that the plant would conduct the assessment by initially profiling the entire plant's energy requirements and energy-intensive processes. Further assessment would then focus on the assessment of those energy systems that would offer the largest cost savings and return on investment. Assessment methodologies and strategies that aim to uncover large process and process-to-process optimization opportunities where the plant's investment in energy efficiency is maximized will be of most interest.

ORNL strongly encourages industrial sites to work closely with their resource and equipment suppliers, engineering firms, and other third-party energy service companies. To this end, ORNL expects the plant-wide assessment to be performed by the end user plant site in conjunction with any number of outside firms that the end user plant sites deems appropriate. Therefore, OIT's and ORNL's involvement in the plant-wide assessment is to primarily provide cost-sharing funds for the assessment, and secondarily, to offer technical assistance through the IOF BestPractices initiative complementary to the overall plant assessment team's efforts.

The industrial site at which the assessment is conducted must fall within the OIT Industry of the Future (IOF) strategy areas. These include: Forest Products, Chemicals, Petroleum Refining, Steel, Aluminum, Metal Castings, Glass, Mining, and Agriculture (Appendix A contains a listing of specific SICs included).

DOE is seeking to work in partnership with individual manufacturing plants and their corporate offices over a long-term period to accelerate energy efficiency improvements towards the plant's full cost-effective energy savings potential. The plant-wide assessment, therefore, could represent the initiation of a partnership between the manufacturing company and DOE which amongst many aspects, will involve the assessment and strategic implementation of best-available and emerging technology, as well as energy efficiency best practices.

The summary results, successes, and experiences from these assessments will be published by DOE-OIT to encourage other U.S. industrial companies adopt and implement a comprehensive, plant-wide systems approach to increasing energy efficiency and reducing environmental emissions. All proprietary information and process data will be protected. DOE's only interest is to increase the market penetration of efficient energy systems across U.S. industry, so as to increase industrial energy efficiency, waste reduction, productivity and global competitiveness.

II. BACKGROUND

The Industries of the Future strategy creates partnerships between industry, government, and supporting laboratories and institutions to accelerate technology research, development and deployment. Nine energy intensive sectors are included in the IOF strategy at present. These include Forest Products, Chemicals, Petroleum, Steel, Aluminum, Metal Castings, Glass, Mining, and Agriculture. These industries use more than 80 percent of the energy consumed in all U.S. manufacturing. Two key elements of the strategy include an industry-driven document outlining the industry's vision for the future and a technology road map to outline the technologies that will be needed in order to reach their goals. Through this process government cost-shared research and development is brought to a sharp focus to benefit U.S. industry.

Efforts in the IOF arena have demonstrated the need to systematically assess process and plant utility applications to find the most promising energy efficiency opportunities. For example a plant may have 1000 pump systems. It is obviously well beyond the ability of plant personnel to examine all pump systems to find the dozen or so where meaningful energy efficiency improvements are possible. This situation frequently discourages efforts to begin an efficiency improvement effort. However, applying appropriate system assessment methodologies allows the systems that offer the largest opportunities to be identified quickly. With only a relatively few systems to examine the job becomes more tractable. It is also clear that while energy savings are available at the component level, the energy savings opportunities that exist at the system level are frequently an order of magnitude higher than those available at the component level.

DOE is interested in increasing the market penetration of efficient energy systems across U.S. Industry, so as to increase industrial energy efficiency, waste reduction, productivity and global competitiveness. To that end, DOE is interested in developing a portfolio of assessment methodologies that can be used by industry to identify energy efficiency opportunities in plants and a comprehensive list of energy efficiency actions that IOF plants can consider to improve the energy performance of their plants. This information is being developed via the plant-wide assessment mechanism. Thus it is desired that the assessments cover a broad range of IOF industries and assessment methods rather than concentrate on duplication of previous assessments.

III. OBJECTIVE

This activity is specifically interested in the assessment and identification of projects that demonstrate the benefits of a systems approach across an entire manufacturing plant. Accordingly, proposals that demonstrate a strategy to assess optimal solutions across the plant site will be given higher priority for funding. It is anticipated that such an evaluation would consist of at least two steps. The first is to identify which applications offer the greatest potential by compiling a profile of energy consumption. The second is to assess specific actions in each of the high priority areas. Assessments should cover a variety of energy-efficient technologies and system best practices in plant support systems such as: steam systems (generation, delivery, use, and recovery), combined heat and power systems, process heating systems, electric motor systems (such as pump and fan systems), and compressed air systems. They should also assess how new, emerging state-of-the-art technologies can effect overall process efficiency and productivity improvement. Process efficiency improvement technologies are not limited to those technologies within the DOE Industries of the Future portfolio (see the OIT website - www.oit.doe.gov - for a listing of those technologies).

This RFP is specifically targeted at applications within industries currently classified as DOE-OIT Industries of the Future sectors. Appendix A contains a complete list of 4-digit SIC codes that describes the industries included within the nine overall IOF sectors.

The deliverable to ORNL from the completed plant energy assessment will be a summary report that presents the plant-wide strategy for improving the energy-efficiency of the plant systems developed in the study. An executive summary must be included in the final report and will be used to develop case study documents for dissemination to industry. The report should describe the methodologies used in conducting the assessment, and identify specific projects that were evaluated and those selected for implementation. The report shall discuss the economics and viability of the projects assessed, to include estimated implementation costs. Analysis shall include projected cost savings and capital costs, including energy savings and non-energy factors such as maintenance benefits or costs, operating benefits and costs, reduced down time benefits and costs, and environmental impacts.

A project kickoff meeting will be held within the first several months of the award. An important aspect of this meeting is information exchange regarding the technologies, training, and assistance that are available from DOE-OIT. Potential follow-on activities will also be discussed. Implementation projects from the plant assessments could qualify as DOE-OIT case studies. Case studies will assist in recognition of achievements in improving energy efficiency and environmental quality. Those plants that have achieved an exceptional improvement in energy efficiency and implement a number of emerging technologies may qualify to be an IOF Showcase Demonstration.

IV. DISCUSSION

A Company (or individual plant) which participates in the follow-on implementation and case studies can expect measurable improvements in energy efficiency, productivity, and environmental performance. Participation in the development of case studies will offer the opportunity of continued technical assistance, along with measurement and validation of energy savings by DOE-OIT. Participants can use the experiences from the plant assessment and implemented projects to replicate the similar projects at other plants within their company, or to other companies with related applications. In addition, participants will gain national recognition for taking a leadership role in improving energy efficiency. DOE will publicize a Company's achievements, as the Company deems appropriate.

Eligible Project Teams: Only industrial "end-users" are eligible to submit project proposals. "End-users" are defined as those companies who own and operate the facility that is the focus of the assessment. In addition to end-user participation, a project team may involve other partners including, but not limited to, design and consulting engineering firms, manufacturers, distributors, utilities, energy service companies, state energy offices, research institutions, etc. End-user companies are encouraged to include such participation. Other non-end user entities are also encouraged to catalyze and support proposal submission by end-user companies.

Plant Assessment Project Team Obligations: The proposing project team must cost share at least 50% of the total cost of the plant energy assessment, and can receive up to \$100,000 in funds from DOE. Special consideration will be given to teams where the predominance of team's costs are provided by the end user/manufacturing plant itself, as opposed to other non-end user partners. This includes all projects costs, including, cost for outside engineering and plant assessment services, process instrumentation and data measurement, and report preparation.

A letter of commitment will be required from a high-level management representative from both the plant site and the company's corporate management. For example, a letter of commitment expressing support for the energy assessment from the plant manager, including some stipulation of the direct cash cost share for outside services and the level of commitment for in-house personnel time to participate in the plant energy assessment would be ideal. Likewise, a letter of commitment from a corporate official, such as the Corporate Vice President of Environmental Affairs, would show corporate awareness and high-level management support for the objectives of the plant energy assessment.

Appendix A- SIC Codes for IOF Sectors

<u>IOF Sector</u>	<u>SIC codes included in sector</u>
Mining	SIC 10 - Metal Mining SIC 12 - Coal Mining SIC 14 - Mining & Quarrying of Nonmetallic Minerals, except fuels
Petroleum	SIC 29 - Petroleum Refining and Related Industries
Forest Products	SIC 24 - Lumber and Wood Products, except Furniture SIC 26 - Paper and Allied Products
Chemicals	SIC 281 - Industrial Inorganic Chemicals SIC 282 - Plastic Materials and Synthetic Resins, Synthetic Rubber, Cellulosic and Other Manmade Fibers except Glass SIC 286 - Industrial Organic Chemicals SIC 287 - Agricultural Chemicals
Glass	SIC 321 - Flat Glass SIC 322 - Glass and Glassware, Pressed or Blown SIC 323 - Glass Products Made of Purchased Glass SIC 3296 Mineral Wool
Steel	SIC 331- Steel Works, Blast Furnaces, and Rolling and Finishing Mills
Aluminum	SIC 3334 - Primary Production of Aluminum SIC 3353 - Aluminum Sheet, Plate, and Foil SIC 3354 - Aluminum Extruded Products SIC 3355 - Aluminum Rolling and Drawing
Metal Casting	SIC 3321 - Grey and Ductile Iron Foundries SIC 3322 - Malleable Iron Foundries SIC 3324 - Steel Investment Foundries SIC 3325 - Steel Foundries, not elsewhere classified SIC 3363 - Aluminum Die Casting SIC 3364 - Nonferrous Die Casting, except Aluminum SIC 3365 - Aluminum Foundries SIC 3366 - Copper Foundries SIC 3369 - Nonferrous Foundries, except Aluminum and Copper
Other Metal Industries	SIC 3398 - Metal Heat Treating SIC 3462 - Iron and Steel Forgings SIC 3463 - Nonferrous Forgings SIC 3331 - Primary Smelting of Copper SIC 3339 - Primary Smelting and refining of Nonferrous Metals SIC 3341 - Secondary Smelting/Refining of Nonferrous Metals SIC 3351 - Rolling, Drawing, and Extruding of Copper SIC 3356 - Rolling, Drawing, and Extruding of Nonferrous Metals SIC 3357 - Drawing and Insulating of Nonferrous Wire SIC 3399 - Primary Metal Production, Not Elsewhere Classified

Agriculture

OIT's IOF Agriculture initiative with U.S. industry focuses on the use of crops, trees, and their waste residues to manufacture industrial chemicals and related consumer goods. Therefore, any manufacturing, industrial or agricultural plant site or facility which is currently in the process of developing, designing, or demonstrating any new technology that addresses the above goals could be eligible for a plant-wide energy efficiency assessment award. Any proposal submitted in this IOF area should address all plant-wide efficiency opportunities – not just the new technology under development. The following is a suggested list of potential industrial sectors where plant sites may qualify as participating within OIT's Agriculture initiative:

SIC 01 - Crops
SIC 07 - Agriculture Services
SIC 08 - Forestry

SIC 20 - Food and Kindred Products
SIC 24 - Lumber and Wood Products
SIC 26 - Paper and Allied Products
SIC 28 - Chemicals and Allied Products

APPENDIX B

SUMMARY OF SUBCONTRACT AWARDS TO DATE

As stated in the Technical Proposal Instructions, proposals that only duplicate the combination of assessment methodology and industrial focus of previous industrial awards, (i.e., water pinch analysis in a pulp and paper plant) may not be responsive to this RFP. This Appendix B describes the assessment methods used to date.

ROUND 1 AWARDS

<u>INDUSTRY</u>	<u>PRODUCT</u>	<u>ASSESSMENT FOCUS</u>
Forest Products	Liner Board	Focus on demand side energy use for plant utilities and process. Develop model to identify critical energy consumers
Forest Products	Recycled paper Board	Energy and Technology review - total system
Forest Products	Integrated Pulp and Paper	Water Pinch Analysis
Forest Products	Integrated Pulp and Paper	Combined Thermal and Water Pinch analysis
Aluminum Metal Casting	Automotive Parts	Utilize IAC Methods and Process Study. Evaluate combined energy, waste and process related improvements.
Aluminum	Extrusions	Apply Systematic Energy Audit (IAC) Techniques
Steel	Specialty Steel Products	Review all processes and utilities for energy opportunities

ROUND 2 AWARDS

<u>INDUSTRY</u>	<u>PRODUCT</u>	<u>ASSESSMENT FOCUS</u>
Forest Products	Carbonless Paper	IAC Type Assessment - Energy & Process Study Apply audit techniques to determine energy/waste and process related issues as an integrated study
Forest Products	Kraft Paper	Water pinch and thermal pinch in succession
Glass Products	Containers	Process Analysis and emission reduction study with a comprehensive system analysis
Metals	Heat treating	Review all energy components Focus on combustion, heat recovery and heat containment
Petroleum	Liquid asphalt products	Combined heat and power systems analysis
Steel	Metal Forging	Plant-wide energy assessment techniques
Chemical	Coatings and Polymers	Process & utilities study: Monitor and model process, introduce energy efficient technology, apply thermal pinch technology to identify energy intensive areas.

ROUND 3 AWARDS

<u>INDUSTRY</u>	<u>PRODUCT</u>	<u>ASSESSMENT FOCUS</u>
Aluminum	Alumina	Systems Analysis of process and energy components.
Petroleum	Refinery for Gasoline and Diesel Fuel	Combined evaluation of heat and power systems and full utility analysis. Site-wide energy balance (fuel, power, steam).
Chemicals	Plastic Tape	Heat recovery/reutilization and cogeneration. Evaluation of plant utilities.
Chemicals	Inorganic Products	6 Sigma analysis of new process technology. Site-wide engineering analysis to determine energy efficiency for utility system.
Chemicals	Oxide Pigments and Specialty Chemicals	Plant-wide energy survey of energy usage in the utility generating and distribution areas.
Chemicals	Adhesives, Coatings, Printing Inks	Evaluate processes and utilities for energy efficiency
Chemicals	Acrylic Emulsions for Paint	Energy system analysis for utilities and process systems.
Glass	Lamps (automotive)	A complete energy system analysis and strategic review of plant's energy system. Develop simulation models focusing on energy efficiency and the process.
Forest Products	Recycled Newsprint	Review all thermal systems – develop simulation models focusing on energy and water analysis.