

# HEATING SYSTEM OPTIMIZATION

Xcel Energy's heating system optimization provides co-funding for an engineering study of your entire heating system or system components to discover and quantify energy-saving improvements. We base study funding on the expected energy savings and target funding up to 75% of your study costs (payable as post-study rebates—maximum \$25,000).

In order to receive study funding, the study must be preapproved by Xcel Energy prior to the study's start. Submit the "completed study" portion of this form no later than three (3) months after study completion.

## HEATING SYSTEM OPTIMIZATION

### BUSINESS CUSTOMER INFORMATION

Opportunity ID# \_\_\_\_\_

Stage of study:  Study preapproval  Study completion and rebate request  
 Bonus funding request (after completion of fast payback improvements) \_\_\_\_\_

Company name \_\_\_\_\_ Date submitted \_\_\_\_\_

Billing address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

Building address (IF DIFFERENT) \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

Contact person (print) \_\_\_\_\_ Phone \_\_\_\_\_

Fax \_\_\_\_\_ Email\* \_\_\_\_\_

\*By providing your e-mail address, you are granting Xcel Energy permission to send further e-mails regarding our programs and services.

Building Sq. Ft. \_\_\_\_\_

Xcel Energy premise number: (ELEC) \_\_\_\_\_ (NATURAL GAS) \_\_\_\_\_

Customer is an Xcel Energy  Electric customer  Retail gas customer  Transport gas customer

Electric Rate Code \_\_\_\_\_ Gas Rate Code \_\_\_\_\_ Xcel Energy account manager \_\_\_\_\_

Project contact (IF DIFFERENT) Name \_\_\_\_\_ Phone \_\_\_\_\_

Fax \_\_\_\_\_ Email \_\_\_\_\_

Customer preapproval signature (CUSTOMER TIED TO XCEL ENERGY PREMISE NO.) \_\_\_\_\_ Date \_\_\_\_\_

By signing here, I acknowledge the information in this application is accurate and complete. I confirm I have read, agree with and understand the rules and requirements on pages 4–5 of this application

Sign here if you'd like us to send a preapproval letter to the equipment supplier listed below: \_\_\_\_\_

### ENGINEERING INFORMATION

Engineering firm performing study (consulting firm) \_\_\_\_\_

Engineering firm address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

Principal investigator performing study \_\_\_\_\_

If not professional engineer, please provide qualifications below and attach relevant experience

Qualifications \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

Email\* \_\_\_\_\_

\*By providing your email address, you are granting Xcel Energy permission to send further emails regarding our programs and services.

**PROPOSAL REQUIREMENTS**

Heating system use:

Space heating    Domestic water heating    Industrial process    Extensive water heating (pools, commercial laundry, etc.)

Describe \_\_\_\_\_

Describe the improvements being analyzed in the proposed study (**CHECK ALL THAT APPLY**)

Whole system optimization study    New or replacement boiler or other heating system    Auxiliary equipment for existing system

Steam trap audit    Pipe insulation evaluation    Heat recovery    Other boiler improvements \_\_\_\_\_

The proposal should provide a description of energy impact measures that will be investigated. Please attach a building description and a proposal to customer that addresses the following items:

- What is the purpose of the study?
- What are the existing systems included in this study (type of equipment, size, efficiency, age, operating hours, etc.)?
- What are the customer's concerns or issues?
- What are the feasible alternatives and/or study tasks?

**CUSTOMER'S DECLARATION**

I certify that the information in this application is accurate and complete. I have read, understood and agree to the "Terms, Conditions and Responsibilities" section of this application.

I, (customer name) \_\_\_\_\_, agree to pay the full cost of the study, after Xcel Energy has approved the final report, and am fully responsible for supervising and directing the engineering firm in the performance of the study. I understand that if Xcel Energy does not approve the final report submitted by the engineering firm, that Xcel Energy will not provide a study rebate.

Signature \_\_\_\_\_

Title \_\_\_\_\_ Date \_\_\_\_\_

**ENGINEERING FIRM'S DECLARATION**

(Engineering firm's name) \_\_\_\_\_ will produce a study according to the Study Workscope section of the application or as revised according to the attached amendments and has read, understood, and agreed to the "Terms, Conditions and Responsibilities" section of this application. We also do not expect customer payment until Xcel Energy has approved the final report submitted by us. The cost for performing the study will not exceed \$ \_\_\_\_\_

Signature \_\_\_\_\_

Title \_\_\_\_\_ Date \_\_\_\_\_

Name (please print) \_\_\_\_\_ Phone \_\_\_\_\_

Fax \_\_\_\_\_ EMail\* \_\_\_\_\_

\*By providing your email address, you are granting Xcel Energy permission to send further emails regarding our programs and services.

Estimated Study completion date: \_\_\_\_\_

**XCEL ENERGY STUDY REBATE AUTHORIZATION**

The Xcel Energy Funding Authorization section of the application must be signed prior to initiation of a study to qualify for Xcel Energy study rebate. The study is limited to the evaluation of a potential energy impact project(s). The customer may expand the study scope to include other project-related work.

Xcel Energy agrees to fund this project up to \$ \_\_\_\_\_ initially. The customer is responsible for paying the balance of the Study cost.

Authorized by (**PRODUCT PORTFOLIO MANAGER**) \_\_\_\_\_ Date \_\_\_\_\_Authorized by (**TECHNICAL CONSULTANT**) \_\_\_\_\_ Date \_\_\_\_\_

**UPON STUDY COMPLETION**

Once the study is complete, please send the study draft, energy savings, calculation detail and the Energy Conservation Opportunity (ECO) form (template to be supplied by Xcel Energy upon study preapproval) to: **Xcel Energy, Heating System Optimization Study at the address or fax listed on the back.** Upon Xcel Energy approval of the study, the engineering firm should send a final copy of the study to the customer, along with the invoice, and to the Xcel Energy account manager. The study should not be presented to the customer until Xcel Energy has approved it. To receive the study rebate, the customer should submit this form with the section below completed within 3 months of the report presentation, to Xcel Energy along with a copy of their paid invoice.

**Study Details**

Date of final report presentation \_\_\_\_\_ Presenter \_\_\_\_\_

List of attendees:

Name \_\_\_\_\_ Title \_\_\_\_\_

Name \_\_\_\_\_ Title \_\_\_\_\_

Name \_\_\_\_\_ Title \_\_\_\_\_

Name \_\_\_\_\_ Title \_\_\_\_\_

Final cost of study \$ \_\_\_\_\_ (Please attach paid invoice to rebate.)

Probability of implementing any of the recommended measures:  0%  25%  50%  75%  100%

Measures anticipated to be completed within:  3 months  6 months  1 year  other \_\_\_\_\_

**Study Bonus Request Upon Completion of Low- and No-Cost Measures**

I certify that the attached Energy Conservation Opportunity form is accurate and complete, and that I have read, understood and agree to the Rules and Regulations section of the form. Invoices are included for these improvements

Invoices are included for these improvements

No invoices are available for these measures due to:

Internal labor was used to complete the measure

Estimated cost: \_\_\_\_\_ (hours x loaded labor rate = total)

Measure cost was minimal and was part of a larger project (please attach invoices for larger project if available)

Estimated cost: \_\_\_\_\_

Other, please specify \_\_\_\_\_

Do you expect to submit these measures along with other heating system optimization improvements to receive a Custom Efficiency heating system optimization rebate?  Yes  No

Signature \_\_\_\_\_

*I hereby certify that that this Heating System Optimization report and the calculations referenced in the report were prepared by me or prepared under my direct supervision.*

Title \_\_\_\_\_ Date \_\_\_\_\_

Account manager signature \_\_\_\_\_ Date \_\_\_\_\_

**TERMS, CONDITIONS AND RESPONSIBILITIES**

1. Study rebates are available to Xcel Energy natural gas business customers in Minnesota.
2. Individuals with demonstrable experience and engineering expertise, appropriate to the type of study being performed, must be responsible for conducting the study.
3. Rebate is only available if Xcel Energy has preapproved the study application prior to beginning the study and has approved final study.
4. The engineering firm performing this study must do so with impartiality towards equipment suppliers, distributors, and all equipment or product brand names.
5. The study must be performed according to the Study Workscope Section of this application.
6. Xcel Energy makes no warranties regarding the study. All such warranties are between the engineering firm and the customer. Rebate qualifications do not imply any representation or warranty of the study by Xcel Energy.
7. Xcel Energy's decision relating to customer eligibility for the study or other issues will be final and binding for all parties.
8. The customer shall be responsible for directing the work of the consultant or the contractor; at no time shall the consultant or contractor be considered an agent, employee, or a contractor of Xcel Energy.
9. The Xcel Energy Funding Authorization section of this application must be signed prior to initiation of the study.
10. The study must be completed within twelve (12) months of the Xcel Energy Funding Authorization Date.
11. Xcel Energy reserves the right to conduct inspections of installation and/or make a reasonable number of follow-up visits to customer's facility to verify savings estimates and/or measure implementation.
12. Rebate will not be paid until after the engineering firm presents the study to customer and Xcel Energy approves the study.
13. Xcel Energy reserves the right to accept or reject any application, study, or portion thereof.
14. Xcel Energy will pay study rebate upon customer payment of study to engineering firm.
15. Customers are eligible for heating system optimization studies focusing on identifying failed steam traps at most every other calendar year for the same system. We will consider study applications for repeat steam trap audits only if the customer provides documentation and verification that they have replaced/repared at least 75% of the failed traps identified in a previous study funded by Xcel Energy.
16. Actual rebate amounts subject to review by Xcel Energy.
17. Xcel Energy's conservation rebate programs are subject to 60 days' notice of cancellation. The customer is responsible for checking with the Business Solutions Center at 1-800-481-4700 to ask whether or not the program is still in effect and to verify program parameters.

**STUDY WORKSCOPE: BUSINESS CASE JUSTIFICATION**

Requirements: The purpose of the study is to provide a customer with the necessary business case justification to implement the energy-saving opportunity. All studies should include the information listed in the business case justification and the program requirements section.

**A. Executive summary**

Report will include an Energy Conservation Opportunities form briefly describing the purpose of the study, existing conditions, and options considered.

**B. Introduction**

In addition, the report will contain an introduction section consisting of customer information and an Xcel Energy (Company) disclaimer.

**C. Study summary**

The approved engineer will fill out the Energy Conservation Opportunities (ECO) form (i.e. material and/or format provided by Company) of capital costs, incentives, energy reduction/increase in kilowatts, and reduction/increase in natural gas Dth, reduction/increase in district cooling energy use, reduction/increase in other fuels/utilities.

**D. Project description**

The following will be provided for retrofit opportunities:

- Description of existing equipment, including sketches, drawings, flow diagrams, photos as necessary to explain and describe the project; and
- Explanation of how the proposed project will modify the plant process or building.

The following will be provided for equipment upgrade situations:

- Description of the proposed energy alternative(s) and the comparable "standard" or "normal" alternative;
- Description of plant upgrade and how the different energy alternatives will affect operation and function;
- Description, sketches, drawings or flow diagrams as necessary to explain and describe the energy use relative to the "standard" alternatives.

**E. Energy estimate**

The following energy-use calculations and calculated estimates must be provided with regard to the project scope of work:

- A calculated estimate of annual electric energy use in kWh, monthly maximum demand in kW and/or natural gas Mcf. This calculation will include an indication of when, during the day and year, the demand and energy consumption will occur.
- A calculated estimate of annual electricity/natural gas reductions/increases in use and cost, based on the rate schedule most appropriate for the customer. Request rate information from the customer's company account manager.
- Indication of how estimate data was derived (e.g., theoretical calculations, field measurements, manufacturer's data, etc.)
- An estimate of the project cost and payback period.
- A description of the proposed modifications to improve energy efficiency.

**F. Measurement of energy**

If study findings exceed 20,000 Dth and/or 1GWh of estimated energy savings, the study must include a plan to verify the energy use (e.g., after the project is implemented how will the building owner or plant manager know that the project is using/reducing the energy estimated). Costs associated with verification must be identified.

**G. Non-energy project impacts**

- The study will estimate other quantifiable benefits and costs to implement the potential energy project, such as impact on production or building function levels, operating and maintenance costs, and plant reliability. Positive and negative impacts will be considered.
- The study also will provide an indication of project impacts that may be difficult to quantify, such as safety and environmental considerations and product quality.

**H. Project costs/vendor quotations**

Estimated and/or vendor quotations of the incremental project costs will be provided. This will involve a category breakdown of the major pieces of equipment to be installed, removed or replaced, subdivided into internal customer labor, external contractor labor, additional engineering, and equipment component costs. Also, any incremental operating and maintenance costs compared to the existing process or equipment operation should be identified.

**I. Financial analysis**

The study will include a financial analysis according to criteria established by the customer (i.e. payback requirements, return on investment requirements). Xcel Energy's Energy Conservation Opportunities Sheet, to be filled out with all studies, will calculate simple paybacks and applicable Xcel Energy rebates. This analysis takes into consideration all energy and non-energy project costs and benefits including applicable company prescriptive rebate amounts. If the customer has no preference, then simple payback should be used. Simple payback must always be included as part of the analysis. The engineering firm is responsible for calculating Xcel Energy prescriptive rebate estimates, and identifying non-prescriptive items as eligible for Custom Efficiency rebates.

**J. Implementation**

The study is designed to provide business case justification and sufficient information to proceed with implementation.

**ALTERNATE REBATE RECIPIENT**

If you prefer to have study reimbursement funds sent to an alternate recipient, please indicate below.

Alternate contact name \_\_\_\_\_ Company name \_\_\_\_\_

Company address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

Customer Signature \_\_\_\_\_ Date \_\_\_\_\_

**INCENTIVES**

Additional incentives for implementing identified conservation measures will be determined by Xcel Energy upon completion of the study. The incentive amounts are based on Xcel Energy prescriptive, Custom Efficiency, and/or other rebate programs.

**Please send this completed application to your Xcel Energy account manager, or:**

**Xcel Energy Heating System Optimization – GO 6**  
**414 Nicollet Mall**  
**Minneapolis, MN 55401**

**Fax: 612-330-2914**

**Email: [energyefficiency@xcelenergy.com](mailto:energyefficiency@xcelenergy.com)**

**UPON STUDY COMPLETION/APPROVAL/INTERNAL USE ONLY**

Account Managers, please attach 12 months building usage history and complete the following:

Xcel Energy Account Manger (**SIGNATURE**) \_\_\_\_\_ Date \_\_\_\_\_

Xcel Energy engineering approval (**SIGNATURE**) \_\_\_\_\_ Date \_\_\_\_\_

Xcel Energy marketing authorized signature (**SIGNATURE**) \_\_\_\_\_ Date \_\_\_\_\_

Total study rebate amount \$ \_\_\_\_\_ Electric Portion \$ \_\_\_\_\_ Gas Portion \$ \_\_\_\_\_

JDE \_\_\_\_\_