

# Fluid System Optimization

## COMPRESSED AIR - SUPPLY SIDE STUDY

Xcel Energy OID

### Preapproval Request

#### Business Customer Information

Date submitted \_\_\_\_\_

Xcel Energy premises number \_\_\_\_\_ and/or \_\_\_\_\_  
Electric \_\_\_\_\_ Gas \_\_\_\_\_

Account manager \_\_\_\_\_

Company name \_\_\_\_\_

Rate code \_\_\_\_\_

Customer contact name \_\_\_\_\_ Title \_\_\_\_\_ Phone \_\_\_\_\_

Installation address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

Mailing address (if different from installation) \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

Customer contact email\* \_\_\_\_\_

#### Study Provider Information

Company name \_\_\_\_\_

Contact name \_\_\_\_\_ Phone \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

Email \_\_\_\_\_

### Study Description

Total installed compressor system horsepower (excluding backup) \_\_\_\_\_

Estimated operating hours \_\_\_\_\_ Total cost of proposed study \_\_\_\_\_

#### Maximum Study Funding per System hp

Only compressor systems that run 2,000 hours are eligible. Back-up and isolated non-production compressors are not eligible for inclusion in the funding calculation.

- 10hp – 49hp Systems get \$250 plus \$20 per hp
- 50hp – 199hp Systems get \$2,000 plus \$20 per hp
- 200hp – 499hp Systems get \$3,000 plus \$20 per hp
- 500hp Systems and larger get \$4,000 plus \$20/hp (capped at \$25,000)

Study provider signature \_\_\_\_\_ Date \_\_\_\_\_

This signature is required from the study provider responsible for completing the study work and report. I acknowledge the information in this application is accurate and complete. I confirm I have read, agree with and understand the terms, conditions, responsibilities in this application, and will produce a study according to the study work scope section of the application. We will not expect customer payment until Xcel Energy has approved our final report. Cost of study will not exceed quoted price without additional notice to the customer and Xcel Energy. Cost changes may impact study funding.

Customer signature \_\_\_\_\_ Date \_\_\_\_\_

This signature is required from the individual tied to the Xcel Energy premises number herein. 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 in this application. I also authorize Xcel Energy to provide a copy of the project preapproval notification to the study provider named herein so as to expedite the study process.

\*By providing your email address, you are granting Xcel Energy permission to send further emails regarding our programs and services. Providing your email address also ensures faster delivery of your preapproval letter, expediting the rebate process.

### Complete Study Payment

Complete this section after study is complete.

**Alternative Rebate Recipient:** This section should be completed if there is a rebate recipient other than the company tied to the premises number noted in the Customer Information section. If this section is left blank, the rebate will be mailed to the company noted in the Customer Information section.

Company name \_\_\_\_\_ Contact name \_\_\_\_\_

Mailing address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

Customer signature \_\_\_\_\_

Customer signature \_\_\_\_\_ Date \_\_\_\_\_

By signing here, I confirm that I have paid the provider for the study, the study was approved by Xcel Energy and presented to me by the study provider and alternate rebate information is accurate.

Study provider signature \_\_\_\_\_ Date \_\_\_\_\_

By signing here, I confirm that this initial study is completed and that the customer has repaired at least 75 percent of the air loss due to leaks.

### Compressed Air—Supply Side Study Funding Requirements, Terms and Conditions

Xcel Energy Minnesota electric business customers are eligible for Compressed Air—Supply Side Study funding once every five years through a participating contractor identified on Xcel Energy's participating compressed air supply-side study contractor list.

#### Compressed air system requirements

Qualifying compressed air systems must meet the following requirements:

- A total installed electric driven compressed air system must have a capacity of greater/equal to 10 hp (excluding backup equipment).
- Only compressors that run 2,000 hours are eligible. Backup and isolated non-production compressors are not eligible for inclusion in the funding calculation.
- "System" is defined as the total hp at the facility that runs at the same time during the study monitoring period. If the compressor does not run during the monitoring period, or if it is being cycled for rotational purposes, it will not be included in the fund structure level on page 1.
- Studies will be capped up to 100% funding. Funding levels vary and may be dependent upon projected energy savings at the facility.

#### Program participation requirements

1. Contact an approved compressed air study professional and request study estimate. A study provider list is available at [xcelenergy.com/Business](http://xcelenergy.com/Business).
2. Submit the Compressed Air - Supply Side Study application and the proposed cost of the study to your Xcel Energy representative.
3. Obtain preapproval from Xcel Energy, then proceed with the study.
  - a. The study must satisfy the terms of the study requirements herein within three months of the Xcel Energy funding authorization date.
  - b. Repair 75% of the air loss due to leaks and/or waste identified in the study in order to receive study reimbursement.
  - c. Provide a compiled copy of the original study and invoice to:
 

Xcel Energy the Account Manager, email to [energyefficiency@xcelenergy.com](mailto:energyefficiency@xcelenergy.com).

Xcel Energy will reimburse the customer for the completed study within eight weeks from our receipt of the study, invoice, vendor verified application and demand side checklist.

#### Compressed Air—Supply Side Studies must include these components:

##### Equipment Inventory

Provide the following for each piece of equipment. If any of the information below is not available provide an estimate and note as such.

- Compressors—ID, model, manufacturer, nameplate HP, motor nameplate HP, approximate age, type, pressure rating in PSIG, full load capacity in ACFM or SCFM at the given pressure rating, full load power in kW at the given pressure rating, and control type.
- Dryers—ID, model, manufacturer, type, full load capacity in ACFM or SCFM, full load power in kW, and controls.
- Filters—Type, manufacturer, model, rated capacity (ACFM or SCFM), and element rating.
- Receivers—Capacity in gallons and type of storage (wet vs dry).
- Flow Controllers/Pressure Regulators—Model, manufacturer, rated flow in ACFM or SCFM, and type.
- Drains—Type and location.

##### Compressed Air Usage

- Provide a general overview of how and for what purpose compressed air is used in the facility.
- Complete Demand side checklist available at [xcelenergy.com/TradePartners](http://xcelenergy.com/TradePartners).

##### Monitoring Requirements

- Measure power, pressure and flow for a minimum 24 hours on systems 10 hp–49 hp and a minimum seven days for all other systems.
- Measure individual compressor and total system power consumption using kW or amps. If amps are measured provide assumptions used for voltage, power factor, and phase.
- Pressure should be measured at the compressor discharge and end-use. If supply and demand side pressure cannot be measured, then estimate using pressure measurements at alternate locations and pressure drops through equipment. Note which method was used and pressure drop assumptions used.

- Measure individual compressor and total system flow. Flow can be measured or estimated using power reading, pressure readings, and equipment specifications. Note which method was used.
- Include a system diagram with the relative location of major compressed air equipment and measurement locations.
- Conduct an ultra-sonic leak inspection.

##### Monitoring Results

- List the model, manufacturer, and type of meters used to monitor the system.
- Include graphs summarizing individual compressor and total system power, individual compressor and total system flow, and pressure measurements for the entire monitoring period.
- Summarize the average flow, supply pressure, hours, % flow, % power, power (kW), and energy (kWh) for each individual compressor by demand profile (e.g. low, medium, high) and for 15-minute peak demand conditions.
- List total system annual energy consumption (kWh/year), operational costs (\$/year), and the blended rate (\$/kWh) used to calculate operational costs.
- List location and approximate size in ACFM or SCFM of each leak. A minimum of 75% of the total leak flow is required to be fixed.
- Provide raw monitoring data in electronic format upon request.

##### Recommendations

- Improvements to maintenance procedures and equipment retirement/replacement schedules.
- Energy Conservation Opportunities (ECOs) including a description, cost estimate (equipment and install), O&M savings, kW savings, kWh savings, gas savings in therms, annual billed savings, and payback without rebate.
- If the customer anticipates future compressed air demand increases note them and any recommendations to accommodate the new loads.

##### Standard Terms and Conditions

- 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.
- Participation in Xcel Energy's contractor program does not constitute an endorsement, nor does it certify or guarantee the quality of work performed.
- Xcel Energy is not responsible if your compressed air contractor, retailer, builder or other party provides you with inaccurate information about the amount or conditions of the program.
- Xcel Energy is not responsible for any lost, late, stolen, ineligible, illegible, misdirected or postage due mail. All completed submissions become the property of Xcel Energy and will not be returned. Warning: Fraudulent submission of this form may result in federal prosecution for mail fraud under 18 USC sections 1341, 1342.
- This program's rules, requirements and offer are subject to change at any time. The changes will be posted on [xcelenergy.com/Rebates](http://xcelenergy.com/Rebates) and the program will provide up to 60 days notice of cancellation. The customer is responsible for checking with the Xcel Energy Business Solutions Center at 1-855-839-8862 or by email [energyefficiency@xcelenergy.com](mailto:energyefficiency@xcelenergy.com) or visit [xcelenergy.com/Rebates](http://xcelenergy.com/Rebates) to determine whether the program is still in effect and to verify program parameters. Xcel Energy reserves the right to publicize your participation in this program, unless you specifically request otherwise.
- Xcel Energy reserves the right to conduct a random audit of your project before or after issuing a rebate. The customer agrees to provide reasonable access to inspect the installation. Audits may be performed up to one year after the date of the rebate application. If Xcel Energy finds that the application does not comply with its rules and qualifications, any rebate amount may be adjusted, denied or subject to return.
- Warranties are between the customer and the equipment manufacturer(s). Xcel Energy makes no warranties, expressed or implied, with respect to equipment operation, material, workmanship or manufacturing. Xcel Energy does not guarantee that a specific level of energy or cost savings will result from the implementation of energy conservation measures or the use of products funded under this program. In no event shall Xcel Energy be liable for any incidental or consequential damages.