

# Energy Assessment Questionnaire

*[www.energyprofiletool.com/xcel](http://www.energyprofiletool.com/xcel)*

Xcel Customer No.: \_\_\_\_\_

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Email Address: \_\_\_\_\_

You may send me information on energy-saving ideas, programs and incentives

- Yes       No

## Facility Setup

### 1. What type of facility is this?

- Stand-alone retail       Strip mall  
 Large mall       Grocery store  
 Motel/Hotel       Elementary school  
 Middle/high school       Extended care  
 High-rise office       Low-rise office (3 stories or less)

### 5. Besides electricity, which fuel type(s) do you typically use?

(Do not include fuels for backup heating or generation.)

- Natural Gas       Propane       Steam       Fuel Oil

### 2. When was your facility built?

- 2000s       1990s       1980s  
 1970s       1960s       1950s  
 1940s       1930s       1920s  
 prior to 1920

### 6. How long ago was a retrofit completed on your facility?

Please indicate for each type of retrofit performed.

	< 2 yr	2-5 yr	6-10 yr	11-15 yr	16-30 yr	> 30 yr	Never
Building Shell	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lighting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heating, Cooling & Ventilation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hot Water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### 3. What is the facility's name?

\_\_\_\_\_

### 4. What is the facility's address?

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_

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## Electrical Billing Data

Enter Monthly or Annual data

### Who is your electricity provider?

- Xcel Energy                       Other Utility

**Monthly**

(If you cannot find a value on your electric utility bill of "kW," leave those spaces blank. You will still get good results)

Month	kWh	kW	Total Bill (\$)
January	_____	_____	_____
February	_____	_____	_____
March	_____	_____	_____
April	_____	_____	_____
May	_____	_____	_____
June	_____	_____	_____
July	_____	_____	_____
August	_____	_____	_____
September	_____	_____	_____
October	_____	_____	_____
November	_____	_____	_____
December	_____	_____	_____
Annual	_____	_____	_____

**Annual**

If you have entered monthly data, please disregard annual data spaces. If you choose to enter annual (rather than monthly) data, note that annual data is only required for any two of the three annual spaces. The third space calculates for you no matter spaces you use to enter annual data.

	kWh	\$/kWh	Total Bill (\$)
Annual	_____	_____	_____

## Natural Gas Billing Data

Enter Monthly or Annual data

### Who is your natural gas provider?

- Xcel Energy                       Other Utility

**Monthly**

Month	Therms	Total Bill (\$)
January	_____	_____
February	_____	_____
March	_____	_____
April	_____	_____
May	_____	_____
June	_____	_____
July	_____	_____
August	_____	_____
September	_____	_____
October	_____	_____
November	_____	_____
December	_____	_____
Annual	_____	_____

**Annual**

If you have entered monthly data, please disregard annual data spaces. If you choose to enter annual (rather than monthly) data, note that annual data is only required for any two of the three annual spaces. The third space calculates for you no matter spaces you use to enter annual data.

	kWh	\$/Therm	Total Bill (\$)
Annual	_____	_____	_____

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## Steam Billing Data

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Enter Monthly or Annual data

### Who is your steam provider?

- Xcel Energy                       Other Utility

**Monthly**

Month	Mlbs	Total Bill (\$)
January	_____	_____
February	_____	_____
March	_____	_____
April	_____	_____
May	_____	_____
June	_____	_____
July	_____	_____
August	_____	_____
September	_____	_____
October	_____	_____
November	_____	_____
December	_____	_____
Annual	_____	_____

**Annual**

If you have entered monthly data, please disregard annual data spaces. If you choose to enter annual (rather than monthly) data, note that annual data is only required for any two of the three annual spaces. The third space calculates for you no matter spaces you use to enter annual data.

	Mlbs	\$/Mlbs	Total Bill (\$)
Annual	_____	_____	_____

## Facility Information

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### 1. Where is your facility located?

**Select the region in which your facility is located:**

- East North Central (IL, IN, OH, MI, WI)
- West North Central (IA, KS, MO, MN, NE, ND, SD)
- Middle Atlantic (CT, NJ, NY, PA)
- New England (MA, ME, NH, RI, VT)
- East South Central (AL, KY, MS, TN)
- South Atlantic (DC, DE, FL, GA, MD, NC, SC, VA, WV)
- West South Central (AR, LA, OK, TX)
- Mountain (AZ, CO, ID, MT, NM, NV, UT, WY)
- Pacific (AK, CA, HI, OR, WA)

**Which city's weather patterns are most similar to your location?**

- |                               |                                   |                                     |
|-------------------------------|-----------------------------------|-------------------------------------|
| <input type="radio"/> Atlanta | <input type="radio"/> Houston     | <input type="radio"/> Phoenix       |
| <input type="radio"/> Boston  | <input type="radio"/> Los Angeles | <input type="radio"/> Sacramento    |
| <input type="radio"/> Chicago | <input type="radio"/> Memphis     | <input type="radio"/> San Francisco |
| <input type="radio"/> Dallas  | <input type="radio"/> Minneapolis | <input type="radio"/> Seattle       |
| <input type="radio"/> Denver  | <input type="radio"/> New York    |                                     |

### 2. What is the floor area of your facility that is heated or cooled?

(Do not include garages or other unheated spaces.)

\_\_\_\_\_ ft<sup>2</sup>

### 3. What type of system do you use to heat and cool your facility?

**Choose the selection which most closely matches your situation.**

(Note: Selections vary by building type)

#### Elementary School selections

- Electric heating coil w/single speed fan, with or without local elec heat
- Fossil boiler or furnace with single speed fan, with local elec heat
- Fossil boiler or furnace with single speed fan
- Fossil boiler with multiple heat pump units distributed throughout facility
- Electric boiler with multiple heat pump units distributed throughout facility
- Fossil boiler or furnace with multiple fans distributed throughout facility

#### Extended Care selections

- Electric heating coil with single speed fan, with or without local elec heat
- Fossil boiler or furnace with single speed fan, with local elec heat
- Fossil boiler or furnace with single speed fan
- Electric heating coil serving roof top unit(s), with local electric heat
- Fossil boiler or furnace serving roof top unit(s), with local elec heat
- Fossil boiler or furnace serving roof top unit(s), with local hot water heat
- Fossil boiler with multiple heat pump units distributed throughout facility
- Electric boiler with multiple heat pump units distributed throughout facility
- Fossil boiler or furnace with multiple fans distributed throughout facility

## Facility Information (cont.)

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### Grocery Store selections

- Electric heating coil w/single speed fan, with or without local elec heat
- Fossil boiler or furnace with single speed fan

### High-Rise Office selections

- Electric heating coil w/single speed fan, with or without local elec heat
- Fossil boiler or furnace with single speed fan, with local elec heat
- Fossil boiler or furnace with single speed fan
- Electric boiler with multiple heat pump units distributed throughout facility
- Fossil boiler with multiple heat pump units distributed throughout facility
- Electric heating coil with multiple fans distributed throughout facility
- Fossil boiler or furnace with multiple fans distributed throughout facility
- Variable speed fan or variable dampers and/or vents with all electric heating
- Fossil boiler/furnace w/var spd fan/dampers/vents & supplemental local elec heat
- Fossil boiler or furnace with variable speed fan or variable dampers/vents

### Hotel/Motel selections

- Electric heating coil with single speed fan and elec baseboard heating in suites
- Fossil boiler/furnace w/single speed fan & local electric heat in suites
- Fossil furnace w/single spd fan & elec baseboard heat & local elec heat in suites
- Fossil boiler with multiple heat pump units distributed throughout facility
- Fossil boiler or furnace with multiple fans distributed throughout facility
- Electric heating coil with single speed fan and individual wall units in suites
- Fossil-fired in-suite units only
- Fossil boiler/furnace with single speed fan and individual wall units in suites
- Electric heating coil with single speed fan and indiv. heat pump units in suites
- Fossil furnace w/single spd fan & elec baseboard heat plus heat pumps in suites

### Large Mall selections

- Single speed fan with electric heating coils and cooling coils
- Single speed fan with non-electric heating coils and cooling coils
- Electric boiler with multiple heat pump units distributed throughout facility
- Fossil boiler with multiple heat pump units distributed throughout facility
- Roof Top Unit electric heating coil with single speed fan
- Heat pump units with or without supplemental electric heat
- Roof Top Unit fossil furnace with single speed fan

### Low-Rise Office selections

- Electric heating coil w/single speed fan, with or without local elec heat
- Fossil boiler or furnace with single speed fan, with local elec heat
- Fossil boiler or furnace with single speed fan
- Electric boiler with multiple heat pump units distributed throughout facility
- Fossil boiler with multiple heat pump units distributed throughout facility
- Single speed fan with electric heating coils and cooling coils
- Single speed fan with non-electric heating coils and cooling coils
- Variable speed fan or variable dampers and/or vents with all electric heating
- Fossil boiler/furnace w/var spd fan/dampers/vents & supplemental local elec heat
- Fossil boiler or furnace with var speed fan or variable dampers and/or vents

## Facility Information (cont.)

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### Middle School/High School selections

- Electric heating coil w/single speed fan, with or without local elec heat
- Fossil boiler/furnace with single speed fan, with local elec heat
- Fossil boiler or furnace with single speed fan
- Electric boiler with multiple heat pump units distributed throughout facility
- Fossil boiler with multiple heat pump units distributed throughout facility
- Fossil boiler or furnace with multiple fans distributed throughout facility
- Variable speed fan or variable dampers and/or vents with all electric heating
- Fossil boiler/furnace w/variable fan/dampers/vents, supplemental local elec heat
- Fossil boiler or furnace with var speed fan or variable dampers and/or vents

### Stand Alone Retail selections

- Single speed fan with electric heating coils and cooling coils
- Single speed fan with non-electric heating coils and cooling coils
- Heat pump units with or without supplemental electric heat
- Roof Top Unit electric heating coil with single speed fan
- Roof Top Unit fossil furnace with single speed fan
- Electric boiler with multiple heat pump units distributed throughout facility
- Fossil boiler with multiple heat pump units distributed throughout facility

### Strip Mall selections

- Single speed fan with electric heating coils and cooling coils
- Single speed fan with non-electric heating coils and cooling coils
- Roof Top Unit electric heating coil with single speed fan
- Heat pump units with or without supplemental electric heat
- Roof Top Unit fossil furnace with single speed fan
- Electric boiler with multiple heat pump units distributed throughout facility
- Fossil boiler with multiple heat pump units distributed throughout facility

### 4. Is your facility air-conditioned?

- Yes
- No

### 5. What is the number of weekly, normal operating hours of the facility?

### 6. How many people occupy the facility during the main operating hours?

### 7. How many months per year is the facility in use?

## Facility Shell Information

### 1. Looking at the outside of your facility, how much of the wall area is made up of windows?

- None
- 0–10%
- 11–20%
- 21–30%
- 31–40%
- 41–50%
- 51–60%
- 61–70%
- 71–80%
- 81–90%
- 91–100%

### 2. What type of windows do you have (overall window U-value)?

- I don't know (use typical value)
- Not applicable
- 1 pane, aluminum frame, no thermal break (U-1.14, USI-6.5)
- 1 pane, aluminum frame, thermal break (U-0.96, USI-5.5)
- 2 panes, alum. frame, no thermal break (U-0.87, USI-4.9)
- 2 panes, alum. frame, thermal break (U-0.58, USI-3.3)
- 2 panes, curtain wall system (U-0.73, USI-4.1)
- 2 panes, wood or vinyl frame (U-0.55, USI-3.1)
- 2 panes, low-e, curtain wall system (U-0.57, USI-3.2)
- 2 panes, low-e, aluminum frame (U-0.50, USI-2.8)
- 2 panes, low-e, wood or vinyl frame (U-0.39, USI-2.2)
- 3 panes, low-e, aluminum frame (U-0.38, USI-2.2)
- 3 panes, low-e, wood or vinyl frame (U-0.31, USI-1.8)

### 3. What is the color or tint of your windows (average shading coefficient)?

- I don't know (use typical value)
- Not applicable
- Clear, 1 pane (SC-1.0)
- Clear, 2 panes (SC-0.9)
- Clear, low-e, 2 panes (SC-0.5)
- Tinted, 1 pane (SC-0.8)
- Tinted, 2 panes (SC-0.6)
- Tinted, low-e, 2 panes (SC-0.4)
- Reflective, 1 pane (SC-0.4)
- Reflective, 2 panes (SC-0.2)

### 4. How are your walls constructed (overall R-value)?

- I don't know (use typical value)
- Metal stud, no insulation (R-2.5, RSI-0.44)
- Metal stud, 3.5" (9 cm) batt insulation (R-7, RSI-1.2)
- Metal stud, 5.5" (14 cm) batt insulation (R-12, RSI-2.1)
- Metal stud, 1" (2.5 cm) rigid insulation (R-6, RSI-1.1)
- Metal stud, 2" (5 cm) rigid insulation (R-10, RSI-1.8)
- Curtain wall, 3.5" (9 cm) batt insulation (R-5, RSI-0.88)
- Curtain wall, 5.5" (14 cm) batt insulation (R-7, RSI-1.2)
- Wood stud, no insulation (R-3, RSI-0.53)
- Wood stud, 3.5" (9 cm) batt insulation (R-10, RSI-1.8)
- Wood stud, 5.5" (14 cm) batt insulation (R-17, RSI-3.0)

### 5. How is your roof constructed (overall R-value)?

- I don't know (use typical value)
- Attic, 6" (15 cm) batt insulation (R-18, RSI-3.2)
- Attic, 12" (30 cm) batt insulation (R-36, RSI-6.3)
- Concrete, 2" (5 cm) rigid common insulation (R-9, RSI-1.6)
- Concrete, 4" (10 cm) rigid common insulation (R-17, RSI-3.8)
- Concrete, 2" (5 cm) rigid polyiso insulation (R-16, RSI-2.8)
- Concrete, 4" (10 cm) rigid polyiso insulation (R-30, RSI-5.3)
- Wood truss roof, no insulation (R-4.5, RSI-0.8)
- Wood truss roof, 6" (15 cm) batt insulation (R-22, RSI-3.9)
- Wood truss roof, 12" (30 cm) batt insulation (R-39, RSI-6.9)

## Heating and Cooling

(Note: Questions may vary according to heating system type)

### 1. What is the efficiency of your heating system?

- I don't know (use typical value)
- Below average (60%)
- Average (70%)
- Above average (80%)
- High efficiency (90%)

### 2. How much of your facility is mechanically cooled?

- I don't know (use typical value)
- 25%
- 50%
- 75%
- 100%
- Not applicable (0%)

### 3. How efficient is your cooling system?

- I don't know (use typical value)
- Not applicable
- Low efficiency air conditioners (COP-2.0)
- Average efficiency air conditioners (COP-3.0)
- High efficiency air conditioners (COP-4.0)
- Low efficiency chillers (COP-3.5)
- Average efficiency chillers (COP-4.5)
- High efficiency chillers (COP-6.0)

### 4. Does your facility use outside air for "free cooling"?

- Yes
- No

## Fans and Controls

### 1. How much do you lower the temperature at night (or during off-peak times)?

- I don't know (use typical value)
- Not applicable (0°F)
- 2°F (1.1°C)
- 5°F (2.8°C)
- 10°F (5.6°C)

## Refrigeration

(Note: This section may not appear for some building types)

### 1. How much of your facility's floor area is covered with commercial refrigeration equipment?

- I don't know (use typical value)
- None
- Less than less than 100 ft<sup>2</sup> (9.3 m<sup>2</sup>)
- 101 to 200 ft<sup>2</sup> (9.4 to 18.6 m<sup>2</sup>)
- 201 to 400 ft<sup>2</sup> (18.7 to 37.2 m<sup>2</sup>)
- 401 to 800 ft<sup>2</sup> (37.3 to 4.3 m<sup>2</sup>)
- 801 to 1600 ft<sup>2</sup> (74.4 to 149 m<sup>2</sup>)
- 1601 to 3000 ft<sup>2</sup> (149.1 to 279 m<sup>2</sup>)
- 3001 to 4500 ft<sup>2</sup> (279.1 to 418 m<sup>2</sup>)
- 4501 to 6000 ft<sup>2</sup> (418.1 to 557 m<sup>2</sup>)
- 6001 to 8000 ft<sup>2</sup> (557.1 to 743 m<sup>2</sup>)
- 8001 to 10,000 ft<sup>2</sup> (743.1 to 930 m<sup>2</sup>)
- 10,001 to 12,000 ft<sup>2</sup> (930.1 to 1110 m<sup>2</sup>)
- 12,001 to 15,000 ft<sup>2</sup> (1110.1 to 1390 m<sup>2</sup>)
- 15,001 to 18,000 ft<sup>2</sup> (1390.1 to 1670 m<sup>2</sup>)
- 18,001 to 21,000 ft<sup>2</sup> (1670.1 to 1950 m<sup>2</sup>)
- 21,001 to 25,000 ft<sup>2</sup> (1950.1 to 2320 m<sup>2</sup>)

### 2. How many freezer and refrigerator display cases does the facility have?

### 3. How many walk-in coolers does the facility have?

## Domestic Hot Water (DHW) System

### 1. How is your service water primarily heated?

- Electricity
- Natural gas (or Fuel Oil)
- Steam

### 2. What is your facility's hot water usage on a typical day?

- I don't know (use typical)
- None
- Low
- Average
- High

### 3. What is the temperature of your hot water?

- I don't know (use typical value)
- Not applicable
- Mainly for hand washing (100°F, 38°C)
- Low (120°F, 49°C)
- Typical (140°F, 60°C)
- High (160°F, 71°C)

### 4. How efficient is your hot water system?

- I don't know (use typical value)
- Not applicable
- Below average (60%)
- Average (70%)
- Above average (80%)
- High efficiency (90%)

## Laundry

(Note: This section may not appear for some building types)

### 1. How much of your facility's laundry is done in-house?

- I don't know (use typical value)
- None (0%)
- Small amount (10%)
- Half (50%)
- All (100%)

### 2. What type of fuel is used for clothes drying?

- Not applicable
- Electricity
- Natural gas (or Fuel Oil)
- Steam

## Lighting and Miscellaneous

### 1. What is your overall interior lighting load?

(Note: Lighting loads vary by building type. Calculate on following page or refer to values listed in tool).

- I don't know (use typical value)
- Above average
- Average
- Below average
- High efficiency \_\_\_\_\_ (estimated/calculated W/ft<sup>2</sup>)

### 2. Do you have any indoor daylighting sensors and/or occupancy controls?

**Select up to two different combinations and enter the percent of floor area controlled.**

#### Primary type of control system:

- None
- Daylighting (on/off)
- Daylighting (multiple step dimming)
- Daylighting (continuous dimming)
- Occupancy sensors
- Occupancy & daylighting (on/off) in same area
- Occupancy & daylighting (multiple step dimming) in same area
- Occupancy & daylighting (continuous dimming) in same area

**What percent of floor area does this control? \_\_\_\_\_%**

#### Secondary type of control system:

- None
- Daylighting (on/off)
- Daylighting (multiple step dimming)
- Daylighting (continuous dimming)
- Occupancy sensors
- Occupancy & daylighting (on/off) in same area
- Occupancy & daylighting (multiple step dimming) in same area
- Occupancy & daylighting (continuous dimming) in same area

**What percent of floor area does this control? \_\_\_\_\_%**

### 3. How many elevators (and/or escalators) are typically in operation in your facility?

### 4. What type of fuel is used for commercial cooking?

- Not applicable
- Electricity
- Natural gas (or Fuel Oil)
- Steam

