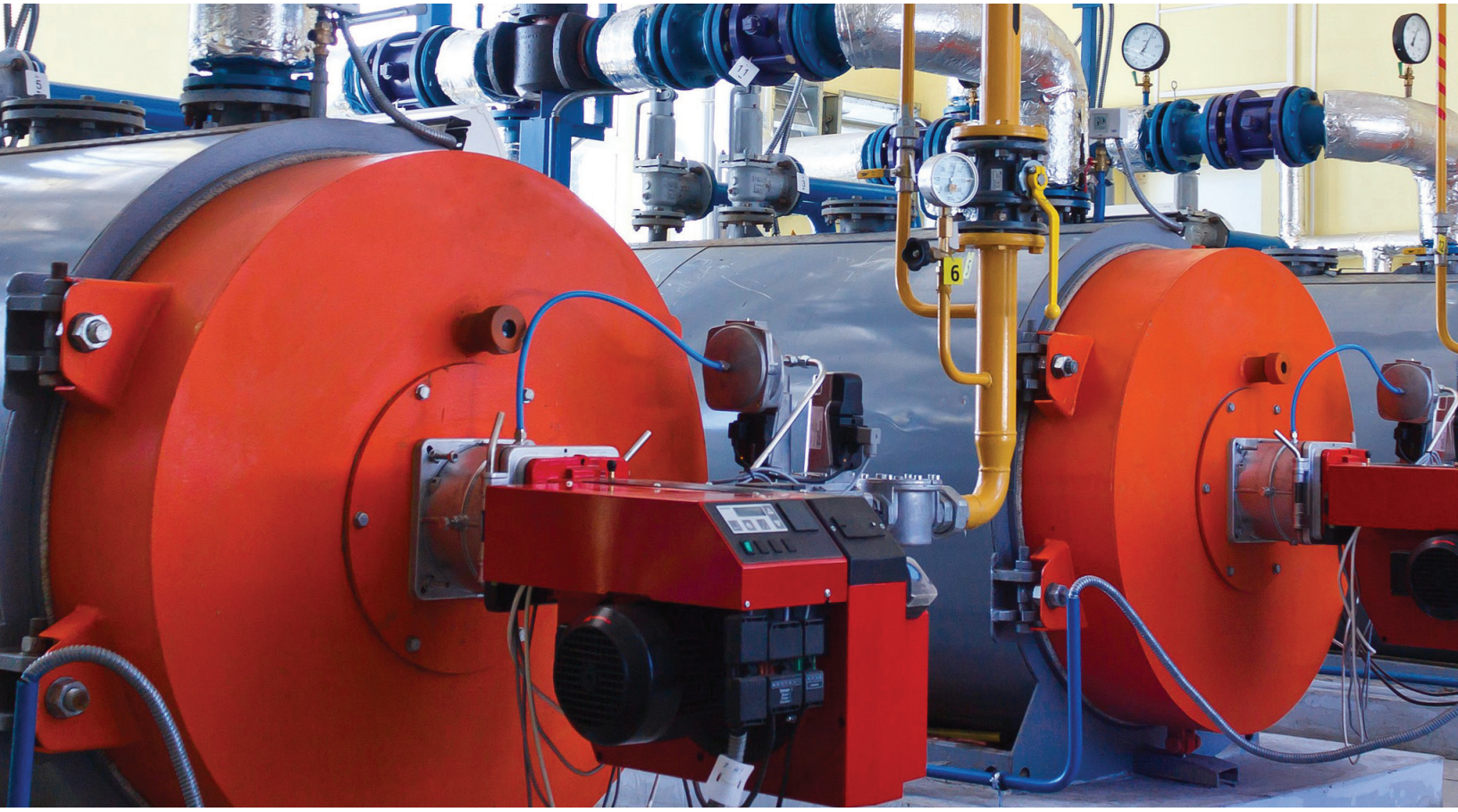
Xcel Energy®



Does your boiler have more life to give?

Tips to determine if your heating equipment should be repaired, rebuilt or replaced

Boiler systems are made to last decades, fired up every fall to keep buildings warm all winter in Minnesota. But as a facility manager wearing many hats—equipment maintenance, asset manager, safety inspector or accountant—you're aware there's more to maintaining a boiler than just keeping it working.

We have developed strategies in five key areas that could save you energy, money and, most importantly, time before you consider repairing, rebuilding or replacing your heating systems.

1. **Aging heating equipment considerations**
2. **Performance history of heating equipment**
3. **Heating equipment applications**
4. **Rightsize your heating equipment**
5. **Heating equipment rebuilds or upgrades**

Aging heating equipment considerations

An aging boiler is not necessarily a bad thing if it performs effectively and efficiently. Knowing when it is time to repair versus replace can make a difference on your heating bill. If you answered "yes" to any of the four questions below, these could be signs to start investigating replacing your equipment for a more cost-efficient system.

Do you spend more on repairs as your boiler ages?

If the number of service calls you make each year continually increase for repairs, these could be signs your system is not able to perform or be energy efficient.

Is the temperature fluctuating in the building?

If there are hot spots where the temperature is a tropical 90° on the coldest day of the year while other parts of the building are so cold your tenants are bundled up, recalibration may not be enough.

Does your system sound like it's haunted?

Rattles, creaks or other unusual noises in your heating system could indicate that it's not working correctly or is headed for a breakdown.

Is your boiler old enough to vote?

Now we are back to age—nothing lasts forever. If your heating equipment is over the industry-average equipment life span, the efficiency and carbon emissions can deteriorate.

Performance history of heating equipment

For businesses finding energy efficiencies, they recognize the importance of developing, implementing, planning, tracking and executing a service or maintenance plan for their heating equipment. If you don't have an active service or maintenance plan, here is a checklist of ideas to add to your heating system management routine.

- Keep a regular maintenance schedule.
- Be sure to include simple tasks to your maintenance checklist such as changing filters, replacement of failed parts.
- Clean, lubricate, tighten and inspect all equipment.
- Include safety protocols
- Develop and perform visual controls for all equipment

Additional resources to help you develop a maintenance plan can be found at www.energystar.gov and maintenancetechnology.com.

Heating equipment applications

If your equipment includes the latest in cutting-edge technology, you want to get the most out of your system. To ensure you're optimizing its power, consider use, location and performance within the building's space.

Do you know and understand all the bells and whistles of your heating equipment and how to optimize it?

Each application for the heating equipment—space, usage, ventilation, etc.—all goes into determining how to calibrate efficiency and output.

How much energy does your facility waste every heating season by ventilating spaces unnecessarily or under-ventilating others?

Consider the various ventilation routes of where your heating system is connected to. Understanding how the equipment is connected—from your heating system to the duct work, vents and traps—and pinpointing opportunities for adjustments is key to ensuring your system is performing at its highest efficiency. Here is a checklist of the most common system connections that could contribute to heat loss during transit.

How many elbows, valves and bends are in your system?
Twists and turns in the duct work can cause dirt or debris to collect in these areas. This can impact your system's ability to heat and ventilate your facility efficiently.

If you have pipe insulation, does it need to be upgraded?
Like your home, proper insulation for pipes in your system are just as important to reduce heat losses.

Are areas of your facility warmer than other areas?
This could be a sign of faulty steam traps. When a leak occurs there is energy loss—which in turn increases fuel consumption, water treatment costs and maintenance costs.

Rightsize your heating equipment

Properly sized equipment is essential to heating your facility efficiently. A system too large for your space wastes energy and a system too small could be working too hard.

Has an addition been added to the building?

Do you have more space to heat now than you had in the past?

Does your system keep up with the demand?

Do you know how to calibrate your equipment to be more efficient?

Depending on the type of system you're installing, the system size can be better determined. For instance, a hydronic system is sized according to the heat loss of the building and a steam system is sized according to the connected load. The best approach is to consult your equipment provider to provide tips on how to optimize for your equipment model.

Heating equipment rebuilds or upgrades

If your heating system is not operating at the efficiency it was designed to manage, you may need to start exploring opportunities to improve energy consumption to save you money. For many, the conundrum of an aging boiler is to know when rebuilding or replacing is necessary.

Rebuild or replace?

Before you tear out your heating equipment, check with your heating system provider to determine if your system is a good candidate for a rebuild. A number of factors help determine if a rebuild is a feasible as a cost-saving option as opposed to replacement.

Identical boilers operating in different facilities often have operating histories that vary. Set-up, operating practices, and maintenance determine how fast your boiler is aging. Discuss your equipment history with your equipment provider to determine if a rebuild is the best option when it comes to cost, time, efficiency and safety.

Given the age, history and efficiency of your heating system, you may determine that a rebuild may not be possible or cost effective. Upgrading your system offers obvious benefits:

- **Energy efficiency –** A new, energy-efficient system could offset the costs to operate, maintain and repair it. Older systems with central boilers may have only one or two large boilers that are set up to cycle one boiler to match part-load operating conditions. With new-generation centralized systems, several smaller modular boilers can be effective in matching the system capacity and facility needs while improving operating efficiency.
- **Comfort of your tenants or facility occupants** – You'll have precision control of your system's thermal output with consistent temperature, humidity control and better air quality.
- **New equipment warranty** – Upgrading to a more efficient system provides the features you want and a new warranty that will last for years to come.

Is a high-efficiency model always the best option?

Efficiency range models vary along with price. Here are a couple of things to keep in mind to determine how energy efficient you want your system to be:

- ☑ Will it fit in the same foot print?
- ☑ Will the high efficiency option capitalize my current system or remaining equipment?
- ☑ Will the equipment be easy to install? Will it require the facility or operation to shut down in order to install the new systems or equipment

We'll guide you to next steps

If you need help to determine the best option for your facility or operation, contact your account manager or an energy efficiency specialist. Our team of industry experts offer free advice to help you maximize your facility and operating budget. If you install qualifying equipment, you could take advantage of our heating system rebates.

Our experts can help you determine the best options to lower your energy bill and add these values to your business:

- Enhanced productivity and customer satisfaction with improved building comfort.
- Reduced operation costs with extended equipment life and minimized breakdowns.
- Improved tenant comfort throughout your facility.
- Increased asset value of your facility with energy updates.

For free advice, call your account manager or our energy efficiency specialists at **855.839.8862**.