



# A Guide to Energy-Efficient Heating & Cooling

# Heating & Cooling

WITH EFFICIENCY IN MIND



NYSERDA

Heating, cooling, and water heating account for more than half of the energy use in a typical New York home, making them significant energy expenses.

You can save on energy costs and improve your overall home comfort by choosing higher-efficiency equipment in addition to making weatherization improvements.

## Keeping efficiency in mind when replacing equipment in your home offers many benefits:

- **Save money** on future energy bills
- **Reduce maintenance** time and costs
- **Enjoy year-round comfort** with consistent temperatures and better air quality
- **Improve the indoor environment of your home** with a reduced risk of allergens and better humidity control

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# Six Signs It's Time to Replace Your Heating System

Home heating is the largest energy expense for most homeowners in New York. Consider upgrading your system or making air sealing and insulation upgrades if any of the following statements apply.

□ **Your heating equipment is 10–15 years old.**

A furnace or boiler that has received annual maintenance can last 20 years or more. If you haven't had your system serviced regularly, it may not last as long. Even equipment that seems to be running fine can be wasteful and costly to operate. Consider replacing older equipment before any issues occur or it breaks down when you need it.

□ **Your heating bills are rising.**

If your heating bills seem to be going up season after season, it may be time to replace your equipment with a new, energy-efficient model. An increase in energy bills might mean that your system is running less efficiently. Newer, more efficient equipment will use less energy and save you money regardless of changes in the cost of electricity and fuel.

□ **Your equipment needs frequent repairs.**

If your heating system is breaking down repeatedly, not providing heat at a comfortable level, or making unusual noises, it may be time to replace your system. When repairs become a constant expense or system performance is a nuisance, it's time for an upgrade.

□ **You have rooms that are too hot or too cold.**

Properly functioning heating equipment should provide even temperatures throughout your home. If heating is inconsistent from room to room, this may be a sign that it's time to replace your system or that you need to seal and insulate air leaks in your home and ductwork.

□ **Your home has humidity problems, excessive dust, or the air is too dry.**

If you feel uncomfortable in your home or are getting sick more often, you may need to replace or upgrade your system. When heating systems aren't working properly, you may notice problems managing humidity levels, excessive dust around the house, or other issues with indoor air quality that could impact the health of your family.

□ **You are remodeling.**

If you are undergoing a renovation project, it's the perfect time to consider a new heating system—especially if you are creating new spaces to heat and cool. Take advantage of clean heating and cooling technologies, like heat pumps. Unlike conventional systems, heat pumps work by drawing heat from the outdoor air and moving it indoors or moving heat from indoor air outdoors to cool your home. They are the safest choice for your home with no burning of fossil fuels, no need for fuel storage tanks, and no potential for carbon monoxide emissions.

**Time to replace your heating system?**

Learn about [energy-efficient heating options](#).

## Six Signs It's Time to Replace Your Cooling System

Many New York households use air conditioners to cool their homes. Consider upgrading your system or making air sealing and insulation upgrades if any of the following statements apply.

❑ **Your cooling equipment is 10–15 years old.**

A central air conditioner that has received annual maintenance can last up to 15 years. A room air conditioner (either a window unit or a portable air conditioner) can last 10–15 years and requires frequent maintenance. If you haven't had your system serviced regularly, it may not last as long and can cost more to operate—even if it seems to be doing a good job cooling your home. Consider replacing your system before any issues occur or it breaks down when you need it.

❑ **Your energy bills are rising.**

If your energy bills seem to be going up season after season, it may be time to replace your equipment with a new, energy-efficient model. An increase in energy bills can mean that your system is running less efficiently.

❑ **Your equipment needs frequent repairs.**

If your cooling system is breaking down frequently and needs to be fixed throughout the summer or is excessively noisy, it may be time to replace your system. When repairs become a constant expense, it's time for an upgrade.

❑ **Your home's temperature isn't comfortable.**

If you have a hard time keeping your home cool, this could be a sign of an aging air conditioner or even an incorrectly sized system. This could also signal that you may require sealing and insulation upgrades to better manage the indoor comfort of your home during the summer.

❑ **Your home has humidity problems.**

Even on the hottest days, your home should not feel humid if the air conditioning system is working properly. If your system is having an increasingly difficult time removing excess moisture from the air, it may be time for an upgrade.

❑ **You are remodeling.**

If you are undergoing a renovation project, it's the perfect time to consider a new heating system—especially if you are creating new spaces to heat and cool. Take advantage of clean heating and cooling technologies, like heat pumps. Unlike conventional systems, heat pumps work by drawing heat from the outdoor air and moving it indoors or moving heat from indoor air outdoors to cool your home. They are the safest choice for your home with no burning of fossil fuels, no need for fuel storage tanks, and no potential for carbon monoxide emissions.

**Time to replace your cooling system?**

Learn about [energy-efficient cooling options](#).

## Six Signs It's Time to Replace Your Water Heating System

Water heating is typically the second-largest energy expense in a home. Consider upgrading or making air sealing and insulation upgrades if any of the following statements apply.

□ **Your water heating equipment is 15–20 years old.**

A water heater that has received annual maintenance can last up to 20 years. If you haven't had your water heater serviced regularly, it may have a shorter life span. Consider replacing your system before any issues occur or it breaks down when you need it.

□ **Your energy bills are rising.**

Hot water accounts for most of the non-heating energy in a home. If your bills seem to be going up, it may be time to replace your equipment with a new, energy-efficient model. An increase in energy bills can mean that your system is running less efficiently.

□ **Your equipment needs frequent repairs.**

If your hot water system is breaking down repeatedly or leaking, it may be time to replace your system. When repairs become a constant expense, it's time for an upgrade.

□ **You aren't getting as much hot water.**

If you have noticed that the amount of hot water you typically get has been declining, these are warnings that your system is in decline and may need to be replaced.

□ **Your system is leaking or the water is discolored.**

If your water has a reddish tint, the inside of your hot water tank may be rusting out and is likely to start leaking soon. If you notice water puddling around the water heater, it's a sign that your system may be nearing the end of its life span.

□ **You are remodeling.**

If you are undergoing a renovation project, it's the perfect time to consider a new hot water system. Take advantage of clean heating and cooling technologies, like heat pump water heaters. Unlike conventional systems, heat pump water heaters use electricity to pull heat from the surrounding air and transfer it to water enclosed in a tank. They are more energy efficient than conventional water heaters, resulting in lower energy bills and operating costs.

### Time to replace your water heater?

Learn about [energy-efficient water heaters](#).

## Sealing & Insulating Your Home

If any of your heating, cooling, or hot water systems are not working properly or need to be replaced, make sure to seal air leaks in your home and duct system in addition to upgrading the mechanical systems. Poor insulation and air leakage can prevent equipment from functioning properly or as efficiently as possible. Sealing and insulating ducts can improve the efficiency of your heating and cooling system by as much as 20 percent.

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### Air Sealing

Air sealing is one of the most cost-effective ways to boost the energy efficiency of your home and save you money. When done properly, air sealing also reduces the risk of mold and mildew, reduces ice damming on your roof, increases the comfort of your home by reducing drafts, and prevents dust and pollutants from entering your home.

The most common air leakage points are in the attic and basement, as well as around windows, doors, and heating ducts. If air is escaping in any of these places, your heating and cooling systems may not be able to keep your home as comfortable as it could be.

### Insulation

When combined with air sealing, insulation contributes to additional savings on heating and cooling costs. Any surface in your home that separates the interior from the exterior should be insulated to prevent hot and cold air from escaping. In colder climates like New York, insulation is even more important to keeping your home comfortable year-round and ensuring your heating and cooling systems work efficiently.

While there are do-it-yourself opportunities to improve the air sealing and insulation of your home, the best return on investment is to hire a professional contractor.

**Learn more about**  
[replacing equipment with efficiency in mind.](#)