

Planning Ahead for HVAC Replacement



Replacing your heating and cooling equipment is a big expense, but planning ahead can make the process easier. Follow these guidelines to help you make the best decision for your facility and your budget.

Getting Started

Make a plan!

- If you know your HVAC system is approaching the end of its life (15-20 years for heat pumps and A/Cs, 20-30 years for gas furnaces), make a plan for replacement now. If you don't make time now, you won't have time later when your unit fails.

Consider your options:

- Is your current setup working for you? Maybe you want to compare other heating and cooling types, like switching from gas heat to electric, or ductless mini-splits.
 - Don't assume that fancier systems are worth the investment. Higher efficiency may not create enough savings to offset the higher prices.
 - Ask your contractor if a variable speed air handlers and multi-stage compressors might make sense for you. If your building goes for long periods without being occupied (for example, a church that is generally used only twice a week) or your building struggles with humidity, ask your contractor if a variable speed system might make sense for you. These can be more efficient in some situations by allowing your unit to run slower but longer. However, they are more expensive to install.
 - If your utility offers HVAC rebates, be sure to factor in those discounts as you consider the costs and benefits of different options.

Don't assume you should replace your unit with whatever was there before!

- If you're running your HVAC a lot but are still finding things too hot or too cold, or if the temperature in some parts of your building is very different from others, your system might not be sized correctly.
 - Over- or under-sized HVAC can be a cause of high utility bills.
 - If you're starting from scratch or replacing after a major renovation, or if your current HVAC isn't keeping your space comfortable, ask for a load calculation (called Manual J, see more below).
- The best way to analyze expensive upgrades is to pay a professional to model the savings. It's worth paying a little money now to avoid making a potentially costly mistake.

Hiring a Contractor

Check out our “[Tips on how to find a good contractor](https://mtassociation.org/energy/finding-good-contractor-in-kentucky/)” resource at <https://mtassociation.org/energy/finding-good-contractor-in-kentucky/> to help you decide which pros to get bids from. Get multiple bids for old systems before they die so you don't risk having a contractor increasing the price to take advantage of the situation.

Be sure the HVAC bid includes:

- Specifications of the equipment such as model numbers for units or size of duct work. Contractor should provide a detailed layout plan (mechanical plan) for any significant installation.
- Warranty information. Manufacturer parts warranty is usually 5-10 years.
 - Don't forget to register your new equipment! Not registering the new unit within 60-90 days can reduce a 10-year parts warranty to only 5 years.
 - Manufacturers often require proof of annual maintenance to keep the warranty active.
- Installation workmanship warranty. Provided by the installer to cover mistakes in installation, such as faulty wiring or refrigerant leaks. This usually lasts 1-2 years, though some contractors offer longer.
- Maintenance Contract. Most installers do not provide maintenance. If you are interested in ongoing maintenance, be sure to discuss a contract for that additional service.

If needed, ask for a Manual J load calculation.

- Load calculations make sure you're getting the right-sized equipment for your space and needs.
 - Ask if the contractor does the load calculations themselves or if they hire it out. Get the name of the engineering firm or HVAC specialist who has performed the load calculations.

Watch for oversizing.

- Sometimes contractors will try to sell you a system that's too big for your needs, which can reduce the life of your units, cause humidity and comfort issues, and increase your utility bills.
 - A common (but not firm) rule for sizing an HVAC system is to allow 1 ton of cooling capacity (12,000 BTU/h) for every 400 to 600 square feet of space. If you feel like your contractor is oversizing the system (which can be common for upselling equipment), ask for the Manual J load calculations to explain their reasoning.

Don't forget about your ducts!

- If your ductwork is old, or if your building was significantly remodeled after the current HVAC system was installed, you should have your ducts checked out to make sure they're not leaky and are laid out properly.
 - Ask if your contractor can perform a duct sealing test. This tests for leaks in your ductwork that can increase your utility bills.
 - In Kentucky, commercial duct sealing tests are generally required for new construction and major renovations.
 - Duct sealing is important if you have any equipment outside the building envelope such as an uninsulated attic or basement.
 - If your ducts are in bad shape, make sure to factor the cost of repair or replacement into your cost comparisons.

Consider Upgrading Your Thermostats

- If you don't already have wi-fi thermostats, now is a great time to have them installed. Many utilities offer rebates for smart thermostats.
- If you have electric heat, wi-fi thermostats are especially helpful. When you raise the temperature on your thermostats more than 2-3 degrees in the winter, it can force the heat pump into emergency (or auxiliary) heat, which can use 3 times as much electricity and contribute to big spikes in your demand charge. Wi-fi thermostats let you raise the temperature slowly, either manually or through scheduling. We recommend scheduling whenever possible, but when doing it manually, just raise the temperature by 2 degrees and allow the thermostat to reach that point before raising it another 2 degrees until you get to your desired temperature. (Note: your heat pump will go into emergency heat mode no matter what when the outside temperature is around 35 degrees or lower.)
- The Department of Energy estimates a 1% savings on energy costs for each degree of setback as long as it's kept that way for at least 8 hours. Adjusting the thermostat by 10 degrees at night could save you 10% on your heating and cooling costs.

Installation

- As it becomes time for installation, confirm the required permits are being pulled and inspections are being done.

Never pay the final invoice before the system is installed and working.

- Require an AHRI sheet (see an example below) with invoice. Confirm the model numbers of each system component match the certificate before paying the contractor.

This combination qualifies for a Federal Energy Efficiency Tax Credit when placed in service between 1/1/2015 and 12/31/2020.

AHRI CERTIFIED
www.ahridirectory.org

Certificate of Product Ratings

AHRI Certified Reference Number : 201842142	Date : 01-23-2021	Model Status : Active
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AHRI Type : HRCU-A-CB (Split System; Heat Pump with Remote Outdoor Unit-Air-Source)
Series : ELITE XP20 SERIES
Outdoor Unit Brand Name : LENNOX
Outdoor Unit Model Number (Condenser or Single Package) : XP20-024-230A**
Indoor Unit Model Number (Evaporator and/or Air Handler) : CBA38MV-018/024-230*+TDR

The manufacturer of this LENNOX product is responsible for the rating of this system combination.

Rated as follows in accordance with the latest edition of AHRI 210/240 with Addendum 1, Performance Rating of Unitary Air-Conditioning & Air-Source Heat Pump Equipment and subject to rating accuracy by AHRI-sponsored, independent, third party testing:
Cooling Capacity (A2) - Single or High Stage (95F), btuh : 23000