1. WHY DO WE NEED NEW TECHNOLOGIES FOR HEATING + COOLING?

Nearly 75% of the average New Yorker’s home energy bill goes to heating and cooling costs, and fossil powered technologies are a major source of greenhouse gas emissions that fuel the climate crisis. Today’s clean heating and cooling technologies — namely, heat pumps for space heating, air conditioning, and water heating — are far more efficient than conventional furnaces and boilers. A zero-emission technology, heat pumps can save money over the long run, especially for households and businesses that heat with expensive fuels.

2. HOW DO HEAT PUMP TECHNOLOGIES WORK?

Heat pumps extract heat from the air or ground around your building, and distribute it inside using a similar refrigerant-based process to an air conditioner or refrigerator. They can also run in reverse, to cool and dehumidify a space. Because they transfer heat rather than burning fuel for heat like a conventional boiler or furnace, heat pumps are not only much more efficient, but also quieter and safer.

There are 3 types of heat pump technologies being supported by HeatSmart Ulster Sullivan:

- **Air source heat pumps** transfer heat into or out of a building through the air.
- **Ground source (or geothermal) heat pumps** which transfer heat into or out of a building from the surrounding earth.
- **Heat pump water heaters** draw heat from the air to heat your water.
3. ARE THESE TECHNOLOGIES APPROPRIATE FOR ANY BUILDING? DOES THE EFFICIENCY OF THE BUILDING MAKE A DIFFERENCE IN HOW WELL THEY WORK?

Air source heat pumps, in particular, work best in buildings with relatively open floor plans. Building efficiency is extremely important for two reasons. A more efficient building takes less work to heat and cool, allowing you to install a more modest sized system. And distributing heat or cooling evenly through the rooms and crannies of a leaky building is much more difficult than in a well insulated one. With recent advances in technology, these systems can greatly reduce your need for fossil fuels even in the cold climate of New York.

4. WHAT FACTORS ARE MOST IMPORTANT IN CHOOSING A CONTRACTOR?

Ideally, you want a contractor who understands how building design and existing heating and cooling equipment affect the dynamics of heating and cooling. The contractor should also be trained and experienced with installing and troubleshooting the specific types of technology you are interested in. This experience and commitment to training may be demonstrated through certifications awarded by manufacturers for experience, service, and regular training (e.g. Mitsubishi Diamond Dealer, Fujitsu Elite, WaterFurnace GeoPro Master Dealer) and/or by third-parties (e.g. North American Technician Excellence (NATE), International Ground Source Heat Pump Association (IGSHPA)). These manufacturer-certified contractors may also be able to offer extended equipment warranties. Installers approved by NYSERDA can apply for NYSERDA rebates on your behalf. A good contractor should guide you on how best to use and maintain your heat pump system.

5. WHAT ABOUT THE ECONOMICS OF THESE SYSTEMS – THE UP-FRONT COSTS, ENERGY SAVINGS AND OTHER BENEFITS?

Costs and paybacks vary substantially based on your current heating and cooling systems and the condition of your building. A single zone air source heat pump might cost $3000 - $4000, and a multi-zone system $7,000 and up. Ground source heat pumps are typically $30,000 - 40,000. Heat pump water heaters are the most affordable innovation at $1,200 - $3,000.

6. IF I'M BUYING A CLEAN HEATING AND COOLING SYSTEM, WHAT KINDS OF CONSUMER PROTECTION SHOULD I EXPECT IN THE WARRANTY?

WORKMANKSHIP: Most heat pump installers will offer a minimum of one-year workmanship warranty, though some will offer as much as three years or more. Some will even offer even longer warranties if you sign an annual service contract. EQUIPMENT: Manufacturers usually offer limited warranties on parts and components of your heat pump system and cover labor costs of warranty replacement. There are many variations for equipment types and add-ons.

7. HOW CAN HEATSMART ULSTER-SULLIVAN HELP?

Part of the New York State Energy Research and Development Authority’s (NYSERDA’s) statewide Clean Heating and Cooling Communities campaign, HeatSmart Ulster Sullivan provides public education and group purchase discounts with carefully selected contractor partners who can be trusted to do what is best for your building and situation. We start you off with a no- or low-cost energy audit so that you understand as much as possible about your building.