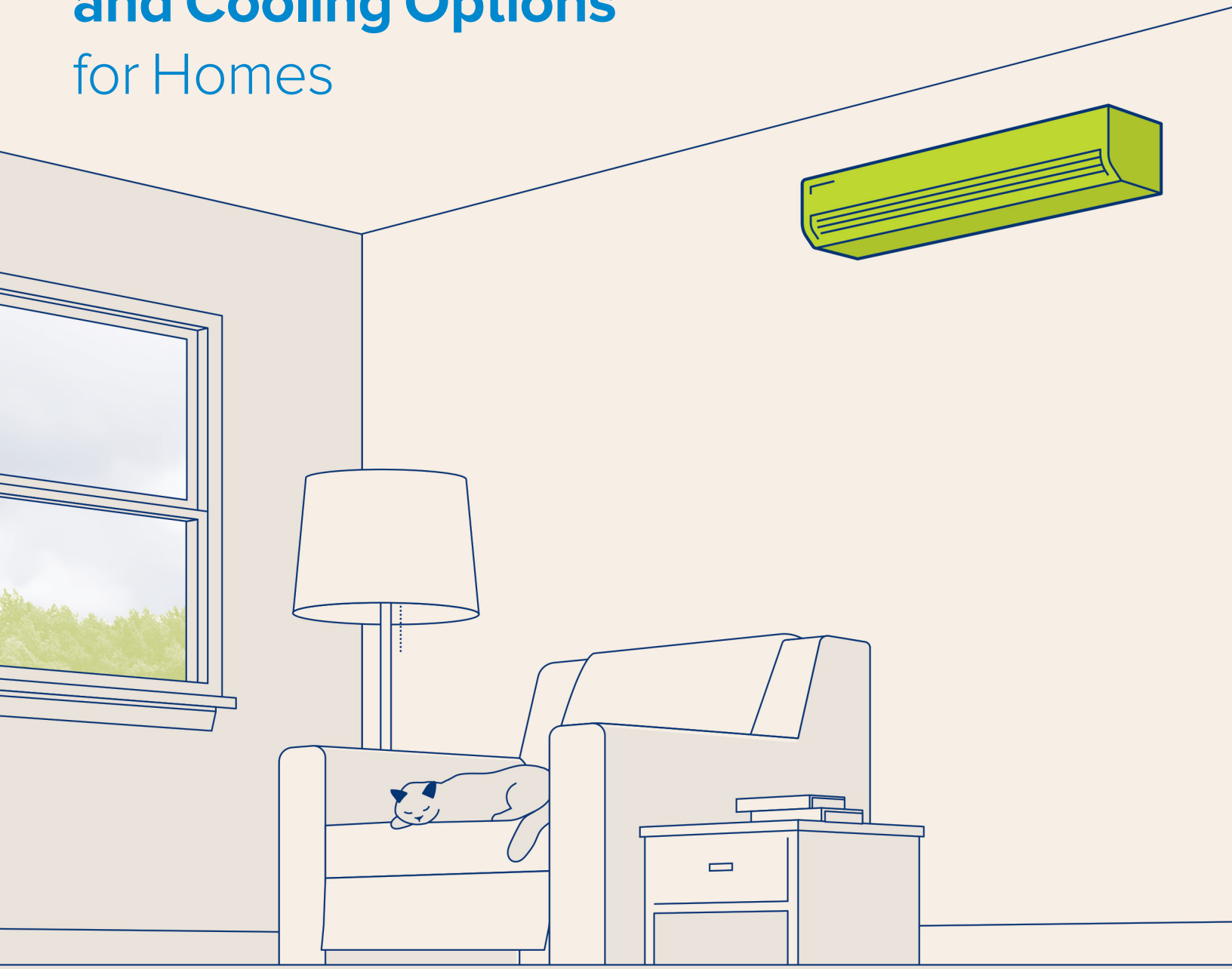
Heat Pump Planner

Clean Heating and Cooling Options for Homes



developed with

NEW YORK STATE OF OPPORTUNITY. | NYS Clean Heat

Steven Winter Associates, Inc.

be ex building energy exchange

Heat Pump Planner

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NYSERDA offers objective information and analysis, innovative programs, technical expertise, and support to help New Yorkers increase energy efficiency, save money, use renewable energy, and reduce reliance on fossil fuels. NYSERDA professionals work to protect the environment and create clean energy jobs. A public benefit corporation, NYSERDA has been advancing innovative energy solutions since 1975.

What Are Heat Pumps?

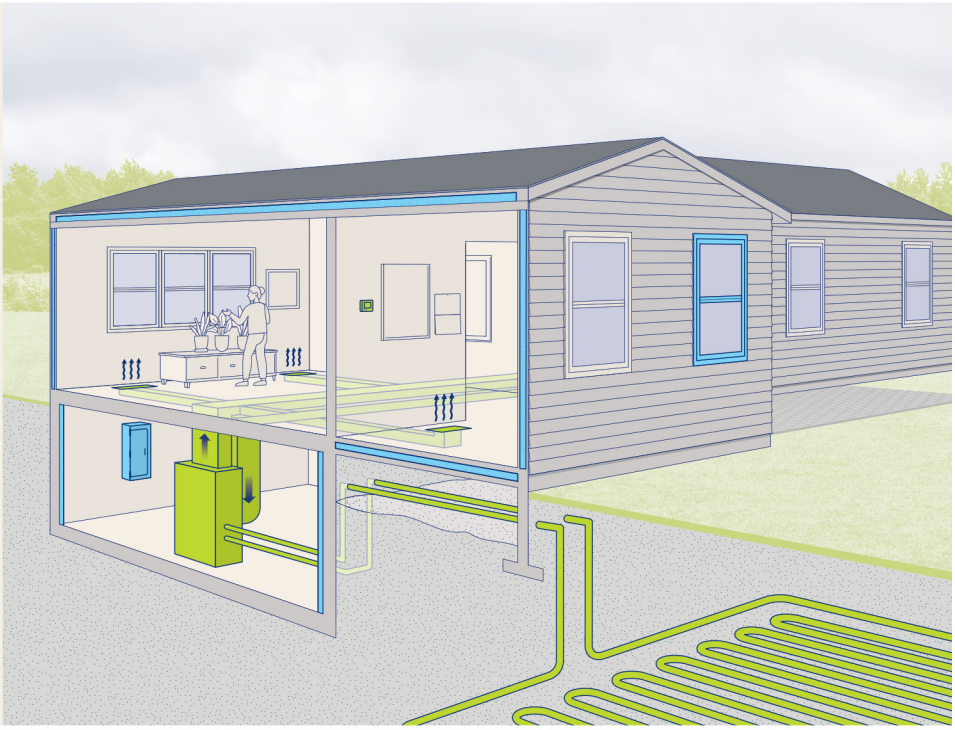
Heat pumps are a cleaner, proven technology that can provide up to 100 percent of your home's heating and cooling needs and help save on energy bills. In the summer, they work like an air conditioner to move heat outdoors, cooling your home, more efficiently than central air conditioners or window units. In the winter, the process is reversed by using electricity to move heat into your home instead of burning fuel. These systems work all winter and can reduce your energy costs, decrease your carbon footprint, and increase comfort every day.

Types of Heat Pumps

Ground source or Geothermal heat pumps use buried pipes to extract heating or cooling from below ground.

Compared to air source heat pumps, ground source heat pumps are more efficient and do not require outdoor units (condensers).

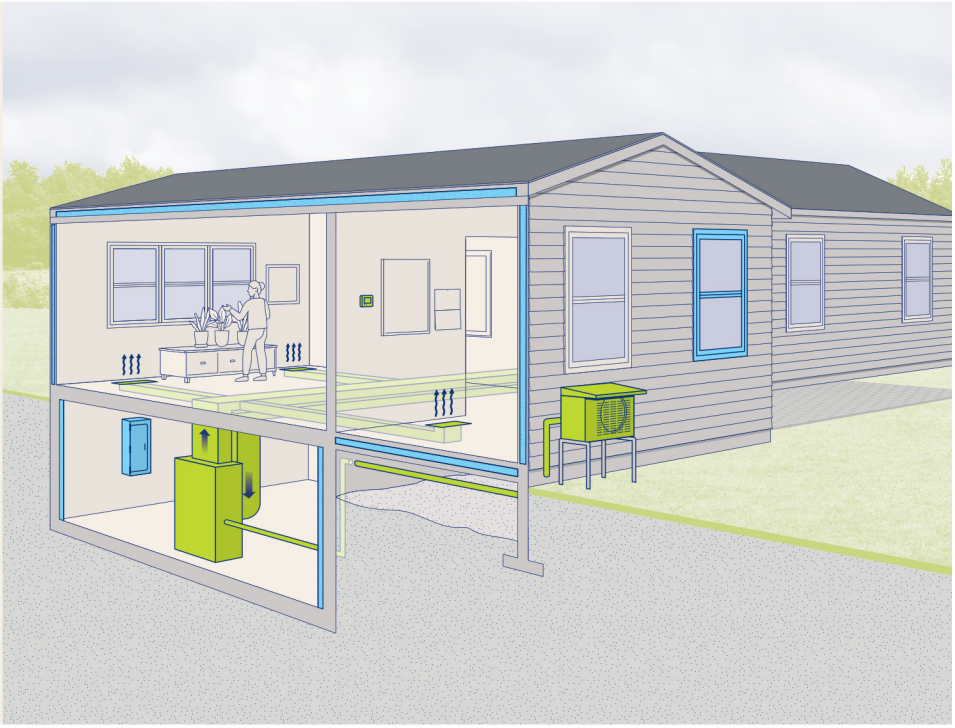
Ground source systems typically take longer and cost more to install.



Air source heat pumps extract heating or cooling from outdoor air. Technology designed for cold climates can efficiently heat homes all winter across New York State.

Air source systems are less costly to install and more versatile, but not as efficient as ground source heat pumps.

Outdoor units – similar to AC condensers – are necessary with air source heat pumps.



Why Heat Pumps?

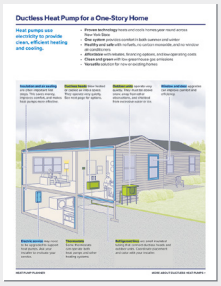
Heat pumps are **safer** and more **efficient**, **sustainable**, and **versatile**. Why?

- Heat pumps cost less to operate than oil, propane, or electric baseboard heating systems.
- Heat pumps are a safer option compared to gas or liquid fuels. There is no chimney, gas line, oil tank, or burning of fuels and no risk of generating carbon monoxide.
- Heat pumps can provide all your heating and cooling needs. The same unit cools your house in the summer and provides heat in the winter.
- Heat pumps generate no greenhouse gas emissions when your electricity comes from clean sources. Heat pumps can also be powered by solar at your home.
- With current technology, heat pumps are efficient in all seasons and can provide most (if not ALL) of the heating needs in homes across New York State.

Consider Heat Pumps When:

- You want to save money compared to an oil, propane, or electric baseboard heating system
- You want to add air conditioning or replace an existing AC unit
- Your heating system is old and will soon need replacement
- You are planning a major renovation or building a new home
- You want to address comfort problems in certain areas of your home
- You need to provide heating and cooling to an addition
- You want to improve health and safety for your family
- You want to reduce your carbon footprint

Using the Heat Pump Planner



What kind of home do you have? The guide shows a variety of systems in several types of homes.

Do you have forced-air heating? If your home currently has ducts for heating or cooling, these can often be reused for ducted heat pump systems.

No ducts? No problem. There are many ductless options for heat pumps.

Whole home solution? Heat pumps can efficiently heat and cool entire homes all across the State, but they can also be installed in additions or spaces with comfort problems.

Know the right questions to ask. Each system includes key questions for your heat pump installer. Work with installers to review options for your home type, price point, and other goals.

Insulate the home. Adding insulation and sealing air leaks will improve comfort, lower heating and cooling bills, and reduce the size (and cost) of the heat pumps needed. See resources for making your home more efficient at www.nyserda.ny.gov/Residents-and-Homeowners/Seal-and-Insulate-Your-Home.

Understand costs, financing, and incentives. Heat pumps are less costly than oil, propane, or electric baseboards. Check with NYSERDA or your electric company for incentives and financing options.

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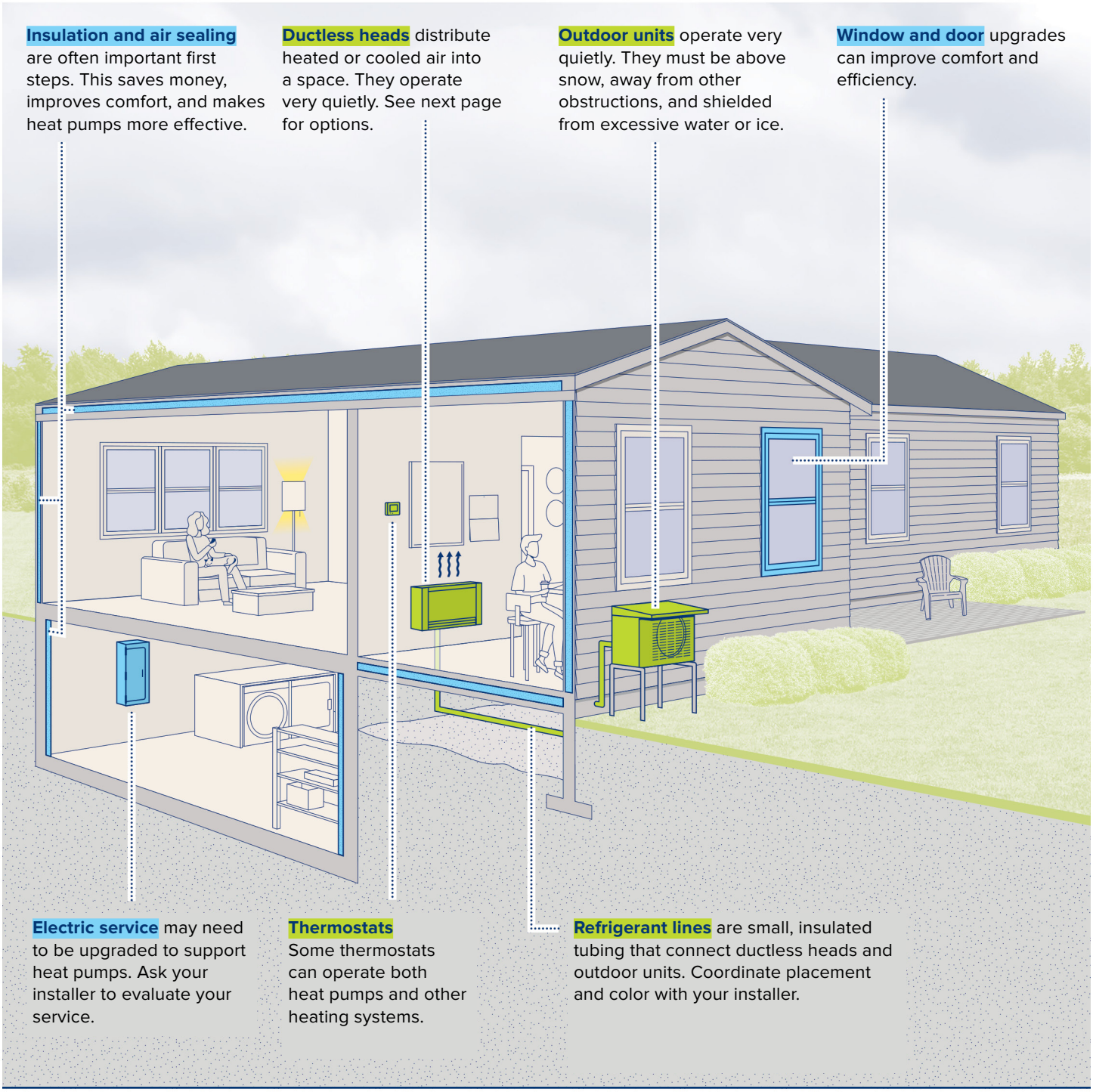
Ductless Heat Pump for a One-Story Home

Heat pumps use electricity to provide clean, efficient heating and cooling.

- **Proven technology** heats and cools homes year-round across New York State
- **One system** provides comfort in both summer and winter
- **Healthy and safe** with no fuels, carbon monoxide, or window air conditioners
- **Affordable** with rebates, financing options, and low operating costs
- **Clean and green** with reduced greenhouse gas emissions
- **Versatile** solution for new or existing homes



Ductless Heat Pumps

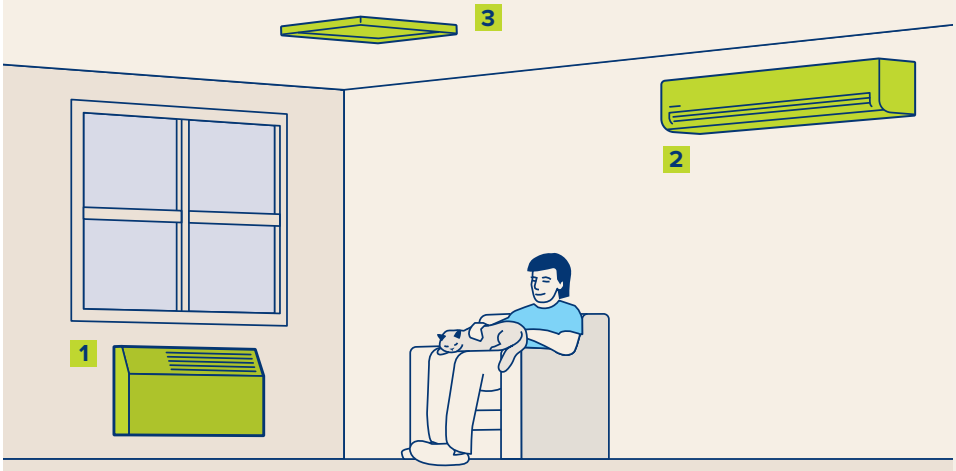
key considerations

Features

- Among simplest and least expensive heat pump system to install
- Control temperature in different areas of the home
- Quiet and efficient operation
- Eliminate window air conditioners

Types of Ductless Heads

Many options for indoor fan coils or "heads" are available. For optimal comfort and efficiency, each head should be sized to meet specific heating and cooling needs. Your heat pump installer can suggest the best options based on size and configuration of the space.



1 **Low-wall** or **floor mount** units may be installed where radiators once were. Do not block them with furniture.

2 **High-wall** are the most common and versatile.

3 **Recessed** can be flush with ceilings or walls. Ask your installer about installation and maintenance.

Ask Your Installer

- What size units do I need? **Ask for room-by-room heating and cooling calculations.**
- Can heat pumps sufficiently heat my home or is an additional system needed?
- What is the best location for each head? Can we avoid heads directly above where people sit or sleep?
- What are my options for locating each outdoor unit?
- How long will installation take? Where and when will you need access?
- How do I operate my system for optimal comfort and efficiency?
- What maintenance is required? How often should I clean or change air filters? Is annual service needed?
- What is the expected lifespan and warranty?

Cost Considerations

Installation Cost

- Check with NYSERDA, your electric company, and installer for incentives and financing options; as larger incentives may be available for eligible customers
- Ductless heat pumps are among the simplest and least expensive to install
- Cost varies with region, heat pump size, manufacturer, installation complexity, and installer experience

Operating Cost

- Your overall heating costs will likely decrease if switching from oil, propane, or electric baseboard
- If you previously heated with fuel, don't be surprised to see electric bills rise; however, your gas, oil, or propane bills will drop or disappear
- Efficient homes (windows, doors, insulation, air sealing) have much lower operating costs

NEW YORK STATE OF OPPORTUNITY. | NYS Clean Heat

Ducted Heat Pump for a One-Story Home

Heat pumps use electricity to provide clean, efficient heating and cooling.

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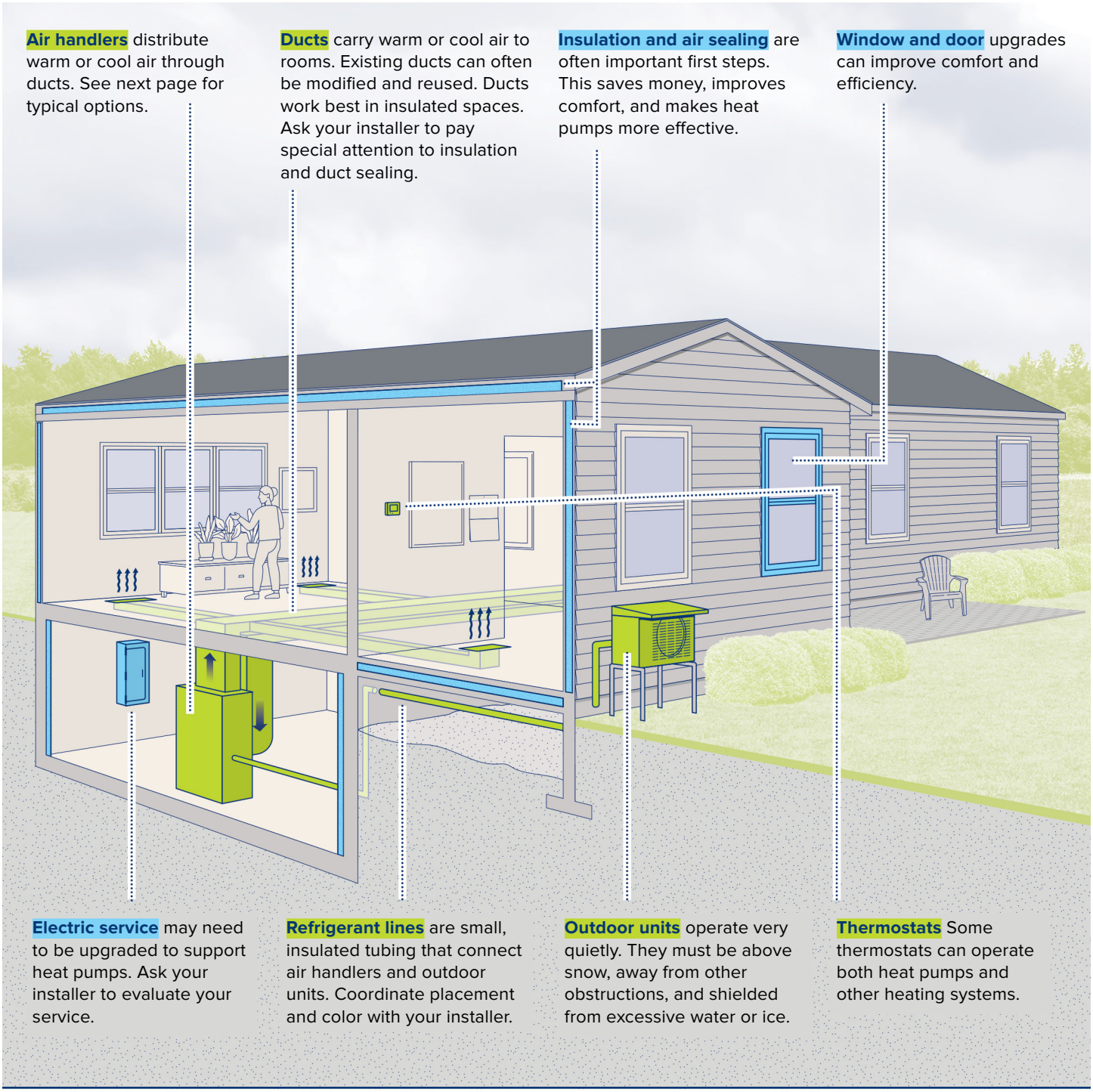


Ducted Heat Pumps

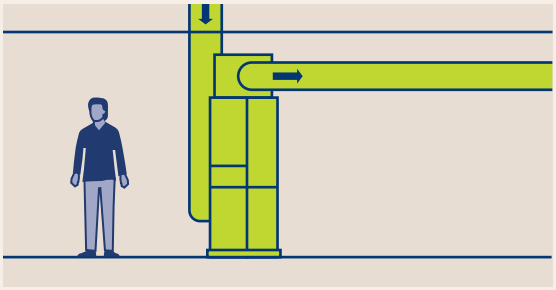
key considerations

Features

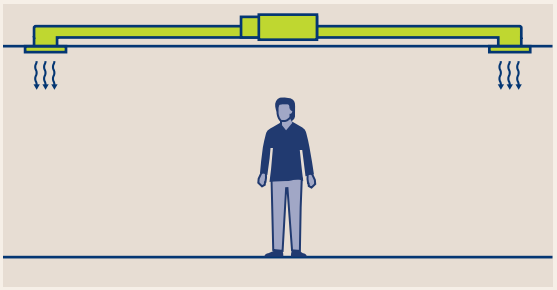
- Heating and cooling distributed throughout the home with new or existing ducts
- No wall-mounted indoor units
- Quiet and efficient operation
- Eliminate window air conditioners

Air Handler Options

Air handler equipment moves warm or cool air through ducts. Your installer can guide you to the best options based on heating and cooling needs, existing systems, and home configuration.



Conventional air handlers distribute air through larger ducts. They are often located in basements, attics, or utility closets. They can be installed to blow air upwards, downwards, or sideways to fit within your home.



Compact ducted air handlers usually serve smaller areas such as one to three rooms. Their slim profile means they often fit in dropped ceilings, but leaving access for maintenance is important.

Ask Your Installer

- Will proper heating and cooling get to each space? **Ask for room-by-room heating and cooling calculations.**
- Are my ducts big enough for a heat pump? What modifications are needed?
- Can heat pumps sufficiently heat my home or is an additional system needed?
- What are my options for locating each outdoor unit?
- How long will installation take? Where and when will you need access?
- How do I operate my system for optimal comfort and efficiency?
- What maintenance is required? How often should I clean or change air filters? Is annual service needed?
- What is the expected lifespan and warranty?

Cost Considerations

Installation Cost

- Check with NYSERDA, your electric company, and installer for incentives and financing options as larger incentives may be available for eligible customers
- If your home has ducts that can be reused, installation costs will be lower
- Cost varies with region, heat pump size, manufacturer, installation complexity, and installer experience

Operating Cost

- Your overall heating costs will likely decrease if switching from oil, propane, or electric baseboard
- If you previously heated with fuel, don't be surprised to see electric bills rise; however, gas, oil, or propane bills will drop or disappear
- Efficient homes (windows, doors, insulation, air sealing) have much lower operating costs

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Multi-Zone Heat Pump for a One-Story Home

Heat pumps use electricity to provide clean, efficient heating and cooling.

- **Proven technology** heats and cools homes year-round across New York State
- **One system** provides comfort in both summer and winter
- **Healthy and safe** with no fuels, carbon monoxide, or window air conditioners
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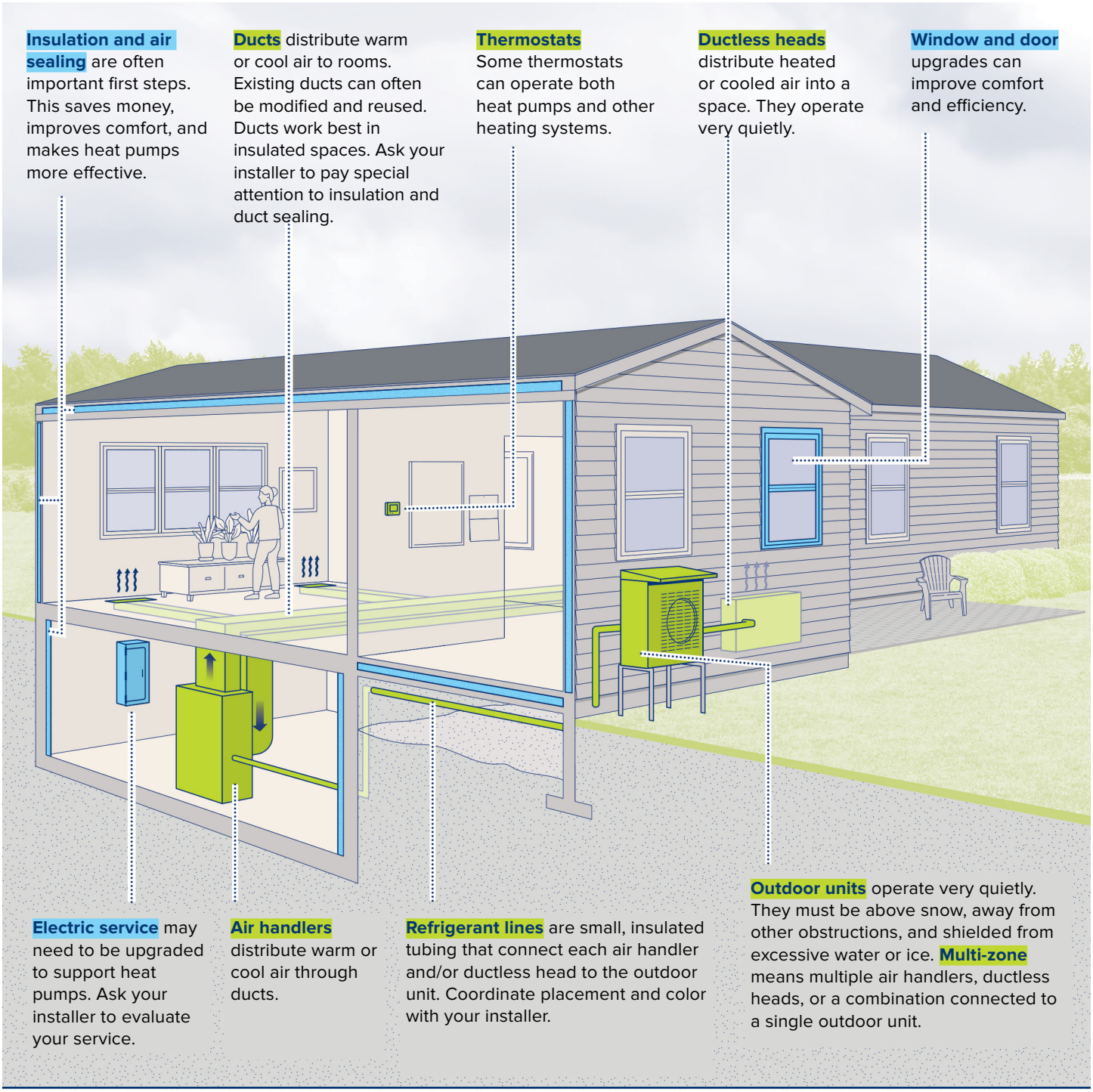


Multi-Zone Air Source Heat Pumps

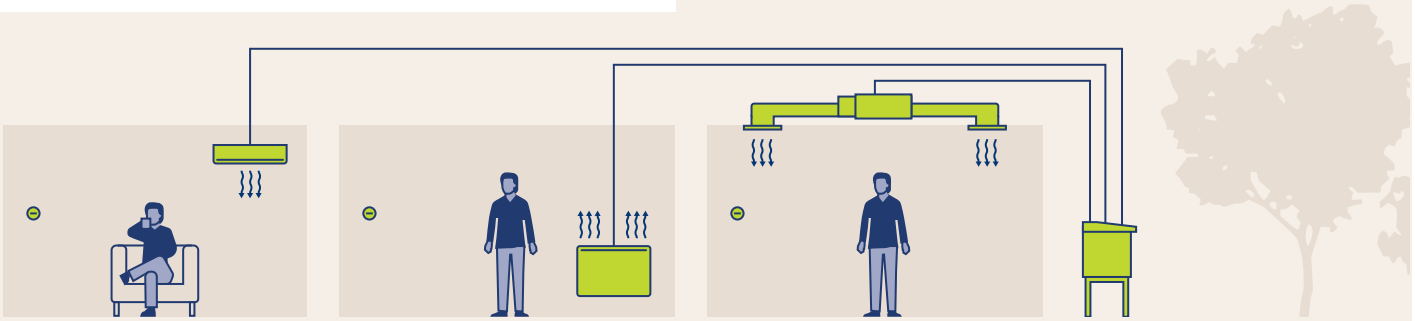
key considerations

Features

- Save space outdoors with multiple indoor units connected to one outdoor unit
- Control temperature in different areas of the home
- Options for both ducted and ductless heating and cooling
- Quiet and efficient operation
- Eliminate window air conditioners

Types of Indoor Units

Multi-zone heat pumps allow you to "mix and match" ducted air handlers and ductless "heads." Each should be sized to meet specific heating and cooling needs of the space it serves. Your installer can suggest the best options based on those needs, configuration of the home, and location of ducts (if present). Options include:



High-wall ductless heads are among the most common and versatile.

Low-wall ductless heads may be installed where radiators once were. Do not block them with furniture.

Ducted air handlers come in a wide range of configurations. Some serve a single room; others can serve most of a home.

Each indoor unit can have its own thermostat, but all indoor units connect to a **single outdoor unit**.

Ask Your Installer

- What size units do I need? **Ask for room-by-room heating and cooling calculations.**
- Can heat pumps sufficiently heat my home or is an additional system needed?
- What is the best location for each indoor unit? Can we avoid heads directly above where people sit or sleep?
- What are my options for locating the outdoor unit(s)?
- How long will installation take? Where and when will you need access?
- How do I operate my system for optimal comfort and efficiency?
- What maintenance is required? How often should I clean or change air filters? Is annual service needed?
- What is the expected lifespan and warranty?

Cost Considerations

Installation Cost

- Check with NYSERDA, your electric company, and installer for incentives and financing options as larger incentives may be available for eligible customers
- Each zone adds cost, so use fewer zones when practical
- Cost varies with region, heat pump size, manufacturer, installation complexity, and installer experience

Operating Cost

- Your overall heating costs will likely decrease if switching from oil, propane, or electric baseboard
- If you previously heated with fuel, don't be surprised to see electric bills rise; however, gas, oil, or propane bills will drop or disappear
- Efficient homes (windows, doors, insulation, air sealing) have much lower operating costs

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Ground Source Heat Pump for a One-Story Home

Geothermal Heat pumps use electricity to provide clean, efficient heating and cooling.

- **Ground source,** or Geothermal, systems heatand cools homes year-round across New York State
- **One system** provides comfort in both summer and winter
- **Healthy and safe** with no fuels, carbon monoxide, or window air conditioners
- **Affordable** with rebates, financing options, and low operating costs
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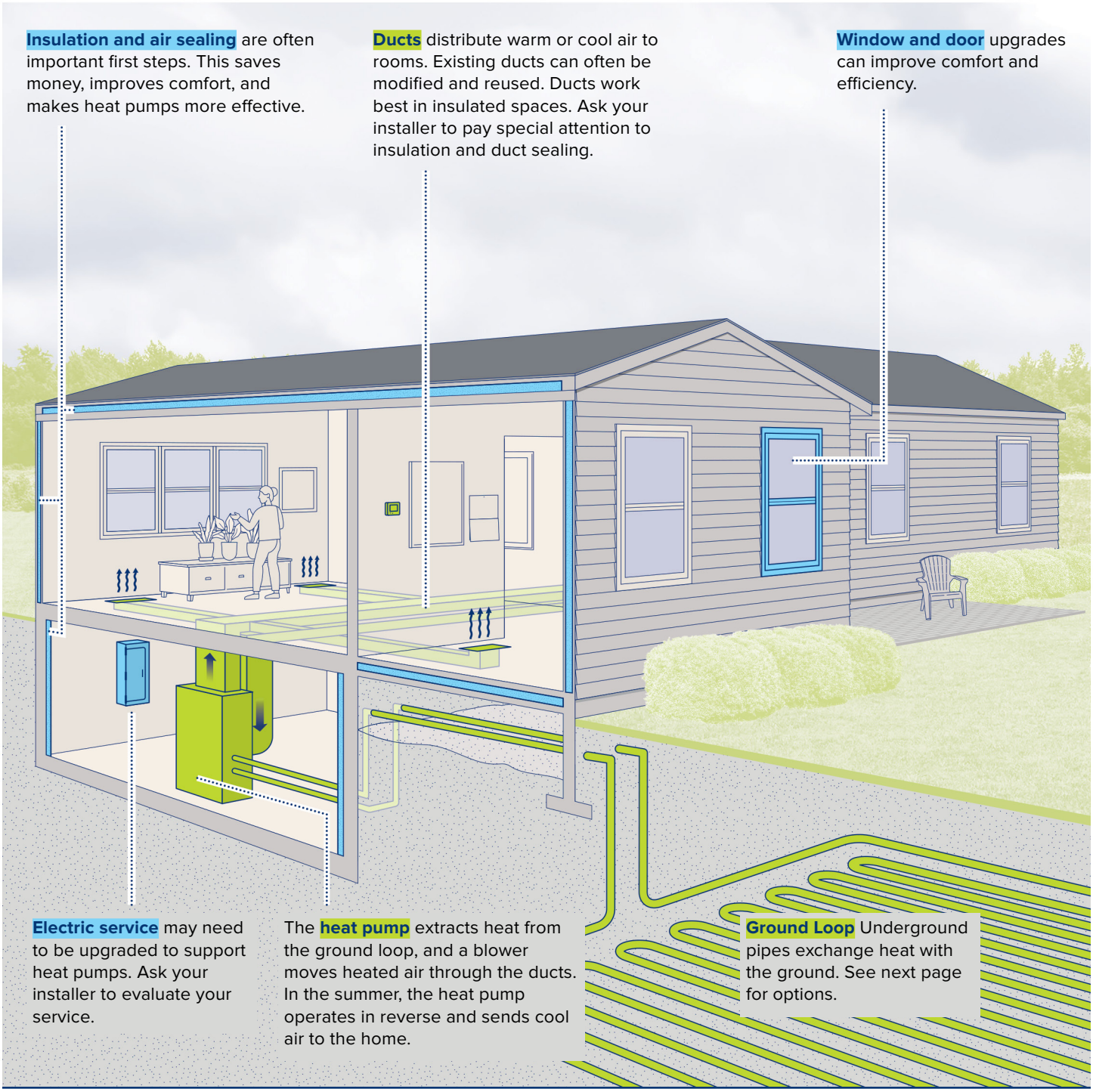
- **Versatile** solution for new or existing homes



Ground Source Heat Pumps

key considerations

Features

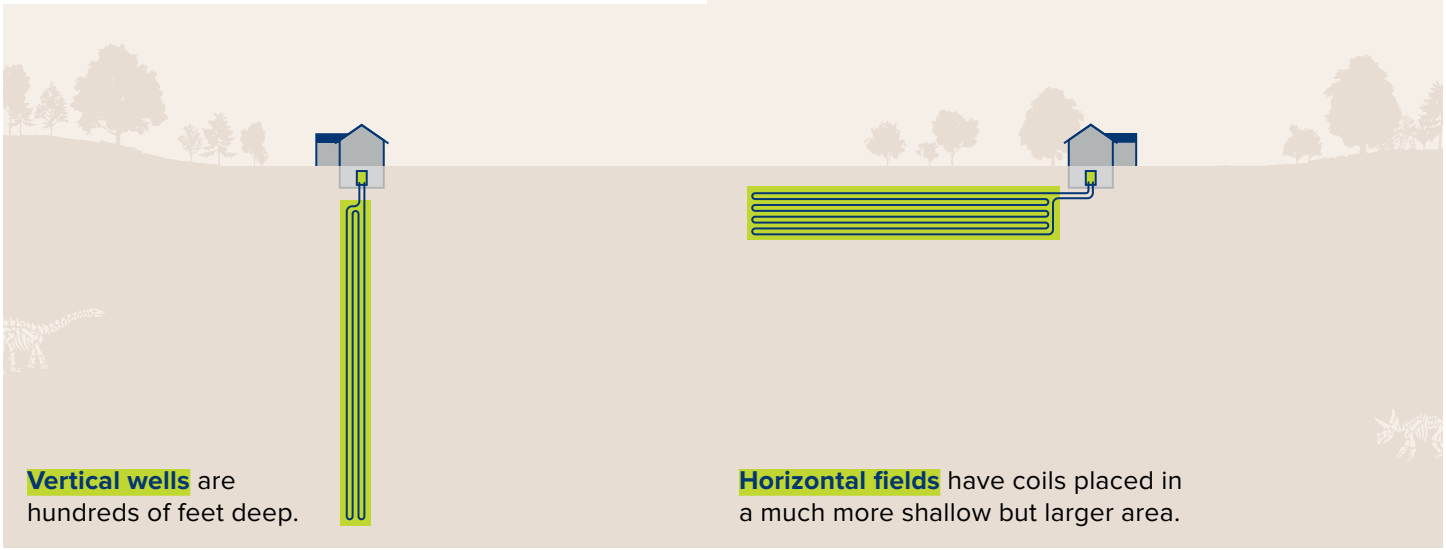
- Highest efficiency with lowest operating costs
- Quiet with no outdoor condensers or window air conditioners
- Heating and cooling distributed throughout the home with new or existing ducts
- Can also provide water heating

Ground Loop Types

Underground pipes exchange heat between the heat pump and the ground. Your installer will determine the proper type and size of ground loop based on:

- Land area available
- Type of rock or soil
- Heating and cooling needs of the home

There are two main types of loops.



Vertical wells are hundreds of feet deep.

Horizontal fields have coils placed in a much more shallow but larger area.

Ask Your Installer

- Will proper heating and cooling get to each space? **Ask for room-by-room heating and cooling calculations.**
- Are my ducts big enough for a heat pump? What modifications are needed?
- How long will installation take? Where and when will you need access?
- Who is responsible for landscaping after the ground loop is installed?
- How do I operate my system for optimal comfort and efficiency?
- What maintenance is required? How often should I clean or change air filters? Is annual service needed?
- What is the expected lifespan and warranty?

Cost Considerations

Installation Cost

- Check with NYSERDA, your electric company, and installer for incentives and financing options as larger incentives may be available for eligible customers
- While ground source heat pumps are the most efficient, they are also more expensive to install
- Cost varies with region, installation complexity, installer experience, system size, and manufacturer

Operating Cost

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Ductless Heat Pumps for a Two-Story Home

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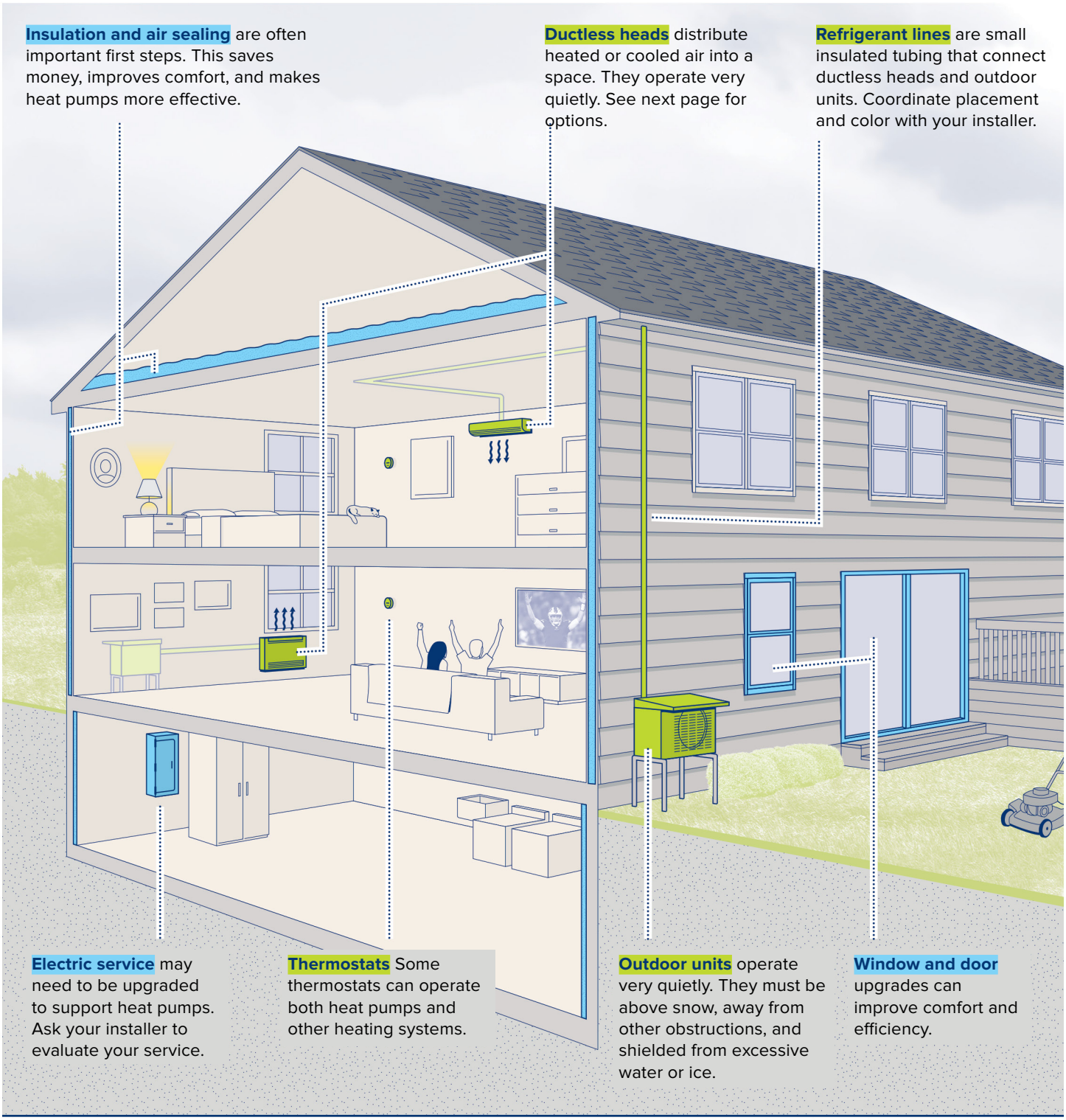

Ductless Heat Pumps

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- Among simplest and least expensive heat pump system to install
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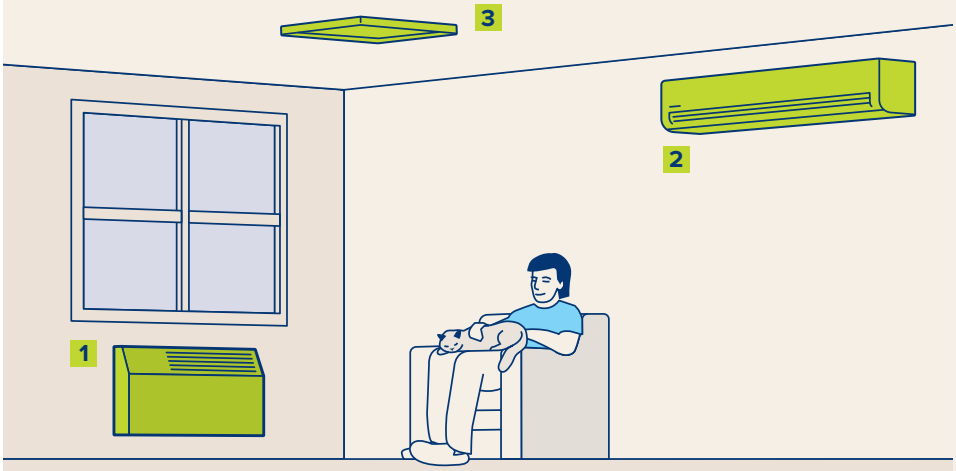
Types of Ductless Heads

Many options for indoor fan coils or "heads" are available. For optimal comfort and efficiency, each head should be sized to meet specific heating and cooling needs. Your heat pump installer can suggest the best options based on those needs plus size and configuration of the space.



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- What size units do I need? **Ask for room-by-room heating and cooling calculations.**
- Can heat pumps sufficiently heat my home or is an additional system needed?
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- Ductless heat pumps are among the simplest and least expensive to install
- Cost varies with region, heat pump size, manufacturer, installation complexity, and installer experience

Operating Cost

- Your overall heating costs will likely decrease if switching from oil, propane, electric baseboard
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NEW YORK STATE OF OPPORTUNITY. | NYS Clean Heat

Ducted Heat Pumps for a Two-Story Home

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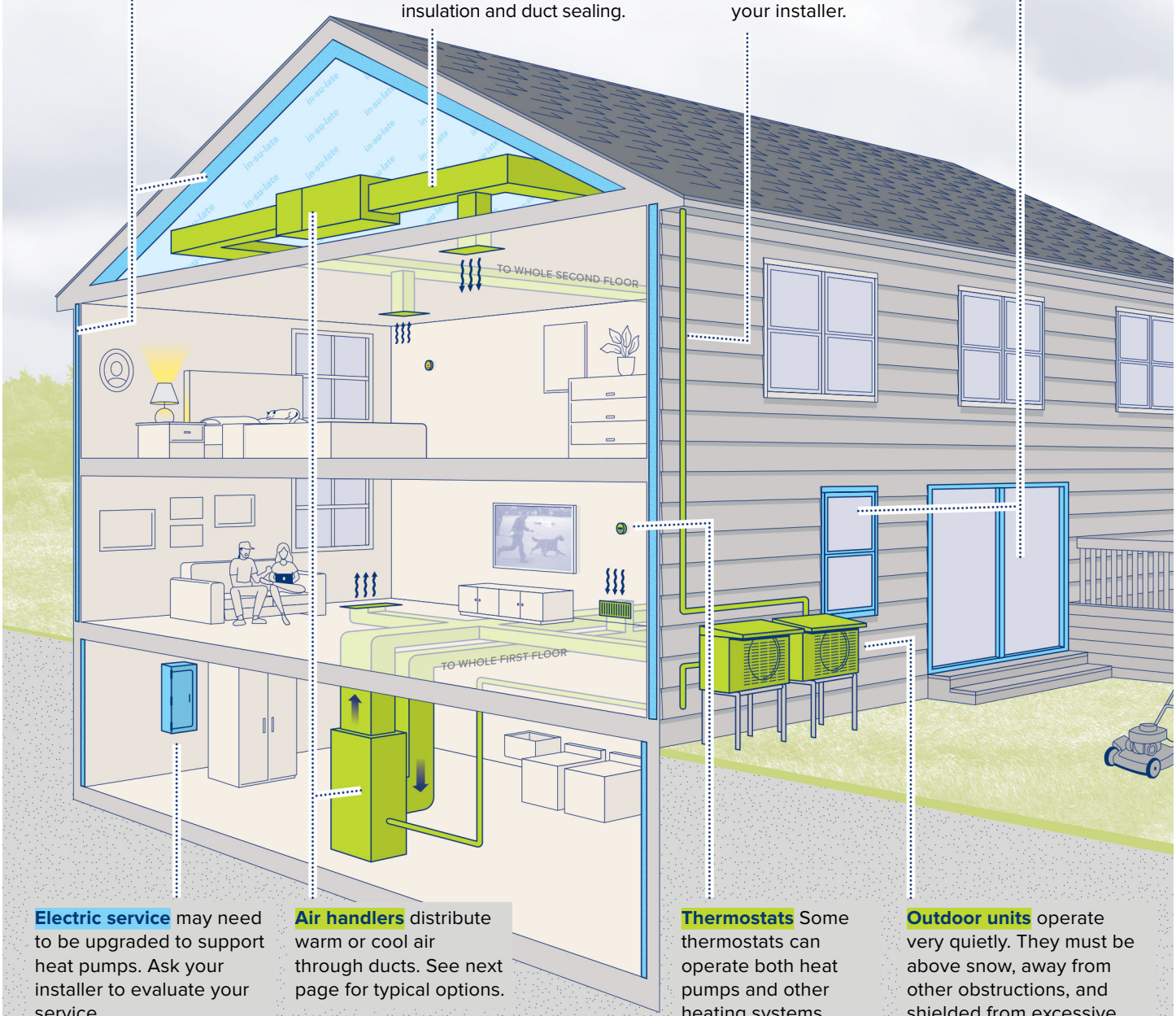
- **Versatile** solution for new or existing homes

Insulation and air sealing are often important first steps. This saves money, improves comfort, and makes heat pumps more effective.

Ducts distribute warm or cool air to rooms. Existing ducts can often be modified and reused. Ducts work best in insulated spaces. Ask your installer to pay special attention to insulation and duct sealing.

Refrigerant lines are small, insulated tubing that connect air handlers and outdoor units. Coordinate placement and color with your installer.

Window and door upgrades can improve comfort and efficiency.



Electric service may need to be upgraded to support heat pumps. Ask your installer to evaluate your service.

Air handlers distribute warm or cool air through ducts. See next page for typical options.

Thermostats Some thermostats can operate both heat pumps and other heating systems.

Outdoor units operate very quietly. They must be above snow, away from other obstructions, and shielded from excessive water or ice.

MORE ABOUT DUCTED HEAT PUMPS >

Ducted Heat Pumps

key considerations

Features

- Heating and cooling distributed throughout the home with new or existing ducts
- No wall-mounted indoor units
- Quiet and efficient operation
- Eliminate window air conditioners

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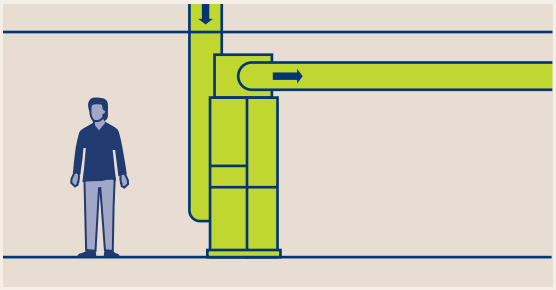

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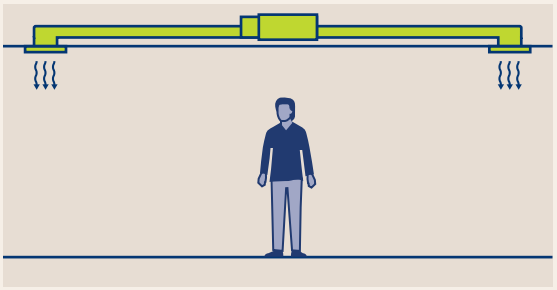

Compact ducted air handlers usually serve smaller areas such as one to three rooms. Their slim profile means they often fit in dropped ceilings, but leaving access for maintenance is important.

Ask Your Installer

- Will proper heating and cooling get to each space? **Ask for room-by-room heating and cooling calculations.**
- Are my ducts big enough for a heat pump? What modifications are needed?
- Can heat pumps sufficiently heat my home or is an additional system needed?
- What are my options for locating each outdoor unit?
- How long will installation take? Where and when will you need access?
- How do I operate my system for optimal comfort and efficiency?
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NEW YORK STATE OF OPPORTUNITY. | NYS Clean Heat

Multi-Zone Heat Pump for a Two-Story Home

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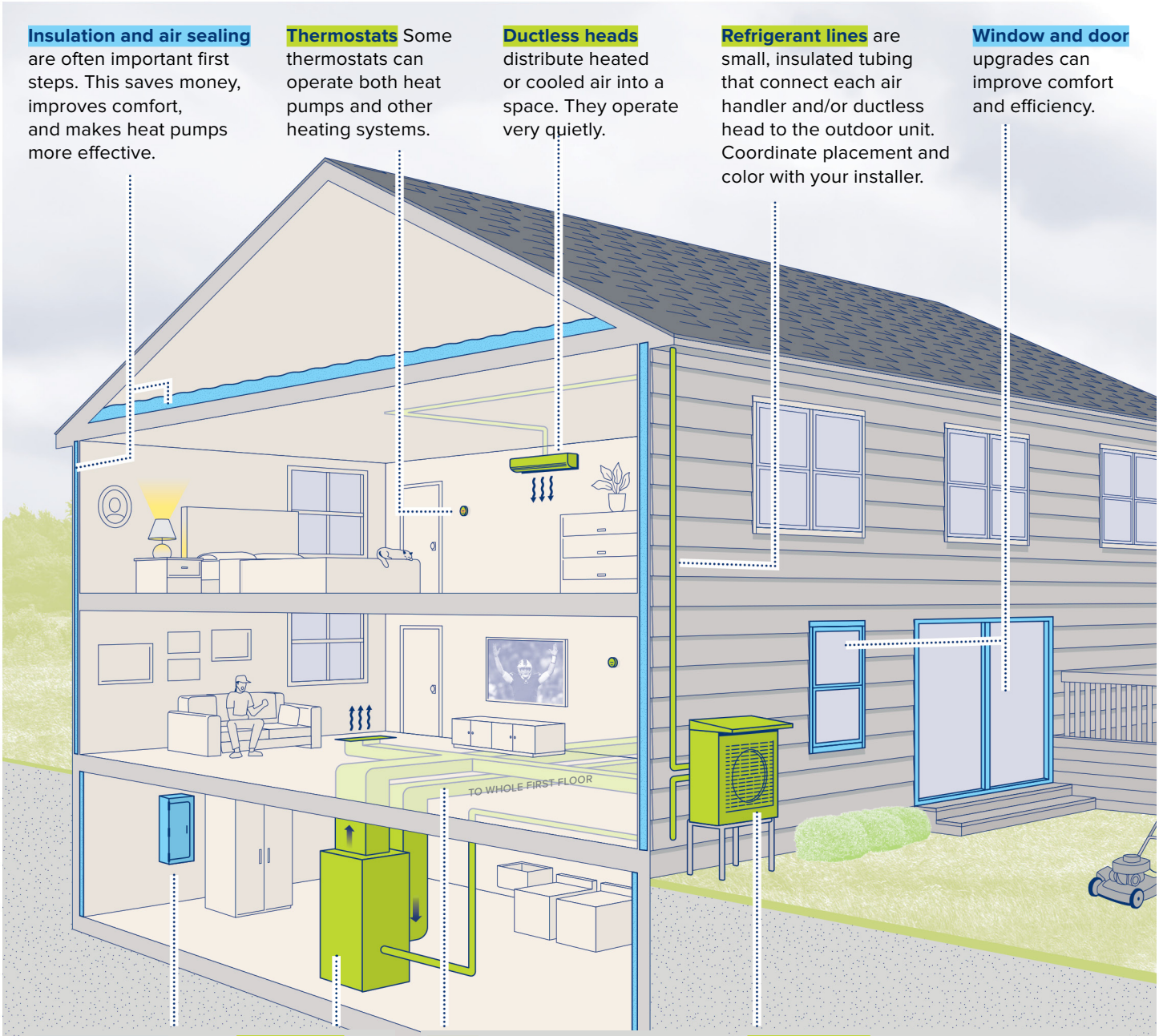


Insulation and air sealing are often important first steps. This saves money, improves comfort, and makes heat pumps more effective.

Thermostats Some thermostats can operate both heat pumps and other heating systems.

Ductless heads distribute heated or cooled air into a space. They operate very quietly.

Refrigerant lines are small, insulated tubing that connect each air handler and/or ductless head to the outdoor unit. Coordinate placement and color with your installer.

Window and door upgrades can improve comfort and efficiency.

Electric service may need to be upgraded to support heat pumps. Ask your installer to evaluate your service.

Air handlers distribute warm or cool air through ducts.

Ducts carry warm or cool air to rooms. Existing ducts can often be modified and reused. Ducts work best in insulated spaces. Ask your installer to pay special attention to insulation and duct sealing.

Outdoor units operate very quietly. They must be above snow, away from other obstructions, and shielded from excessive water or ice. **Multi-zone** means multiple air handlers, ductless heads, or a combination connected to a single outdoor unit.

Multi-Zone Air Source Heat Pumps

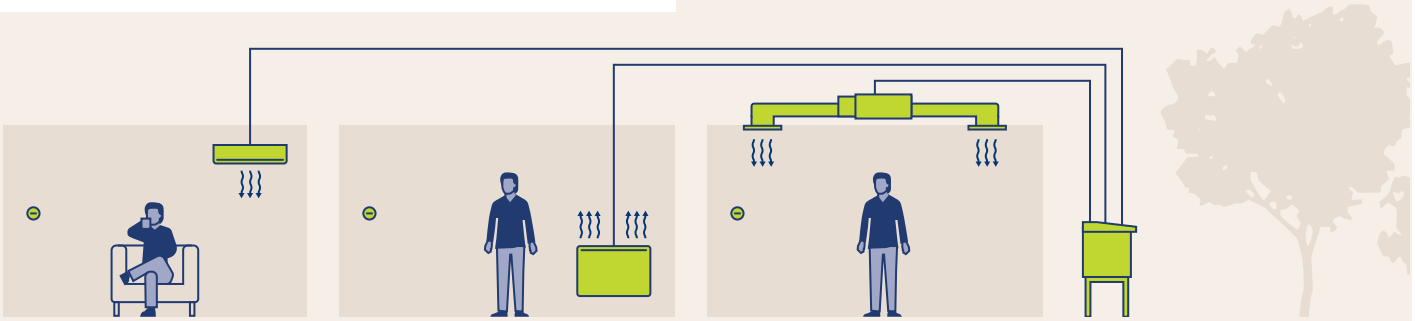
key considerations

Features

- Save space outdoors with multiple indoor units connected to one outdoor unit
- Control temperature in different areas of the home
- Options for both ducted and ductless heating and cooling
- Quiet and efficient operation
- Eliminate window air conditioners

Types of Indoor Units

Multi-zone heat pumps allow you to "mix and match" ducted air handlers and ductless "heads." Each should be sized to meet specific heating and cooling needs of the space it serves. Your installer can suggest the best options based on those needs, configuration of the home, and location of ducts (if present). Options include:



High-wall ductless heads are among the most common and versatile.

Low-wall ductless heads may be installed where radiators once were. Do not block them with furniture.

Ducted air handlers come in a wide range of configurations. Some serve a single room; others can serve most of a home.

Each indoor unit can have its own thermostat, but all indoor units connect to a **single outdoor unit**.

Ask Your Installer

- What size units do I need? **Ask for room-by-room heating and cooling calculations.**
- Can heat pumps sufficiently heat my home or is an additional system needed?
- What is the best location for each indoor unit? Can we avoid heads directly above where people sit or sleep?
- What are my options for locating the outdoor unit(s)?
- How long will installation take? Where and when will you need access?
- How do I operate my system for optimal comfort and efficiency?
- What maintenance is required? How often should I clean or change air filters? Is annual service needed?
- What is the expected lifespan and warranty?

Cost Considerations

Installation Cost

- Check with NYSERDA, your electric company, and installer for incentives and financing options as larger incentives may be available for eligible customers
- Each zone adds cost, so use fewer zones when practical
- Cost varies with region, heat pump size, manufacturer, installation complexity, and installer experience

Operating Cost

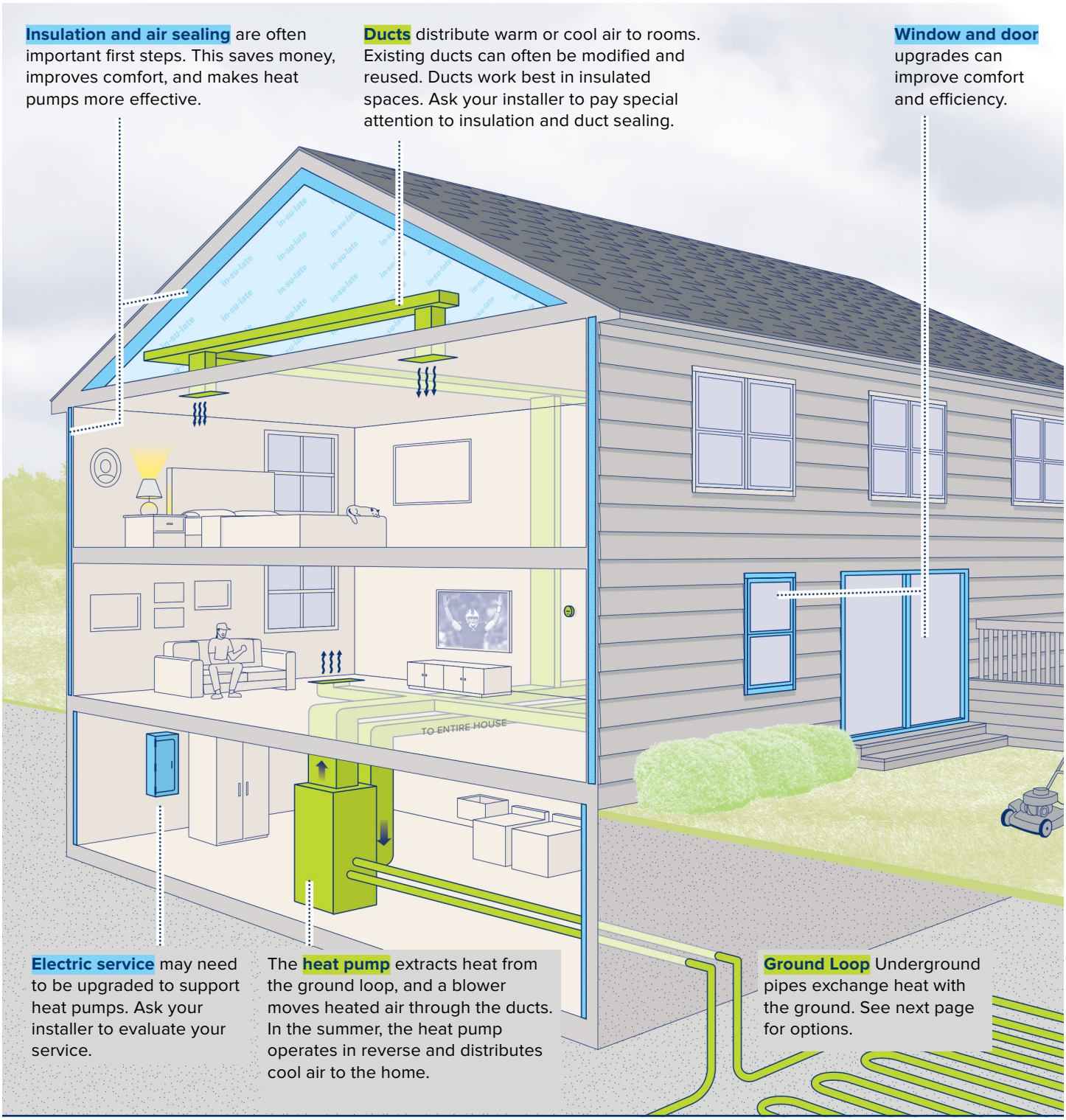
- Your overall heating costs will likely decrease if switching from oil, propane, or electric baseboard
- If you previously heated with fuel, don't be surprised to see electric bills rise; however, gas, oil, or propane bills will drop or disappear
- Efficient homes (windows, doors, insulation, air sealing) have much lower operating costs

NEW YORK STATE OF OPPORTUNITY. | NYS Clean Heat

Ground Source Heat Pump for a Two-Story Home

Geothermal Heat pumps use electricity to provide clean, efficient heating and cooling.

- **Ground source,** or Geothermal, systems heat and cools homes year-round across New York State
- **One system** provides comfort in both summer and winter
- **Healthy and safe** with no fuels, carbon monoxide, and no window air conditioners
- **Affordable** with rebates, financing options, or operating costs
- **Clean and green** with reduced greenhouse gas emissions
- **Versatile** solution for new or existing homes



Ground Source Heat Pumps

key considerations

Features

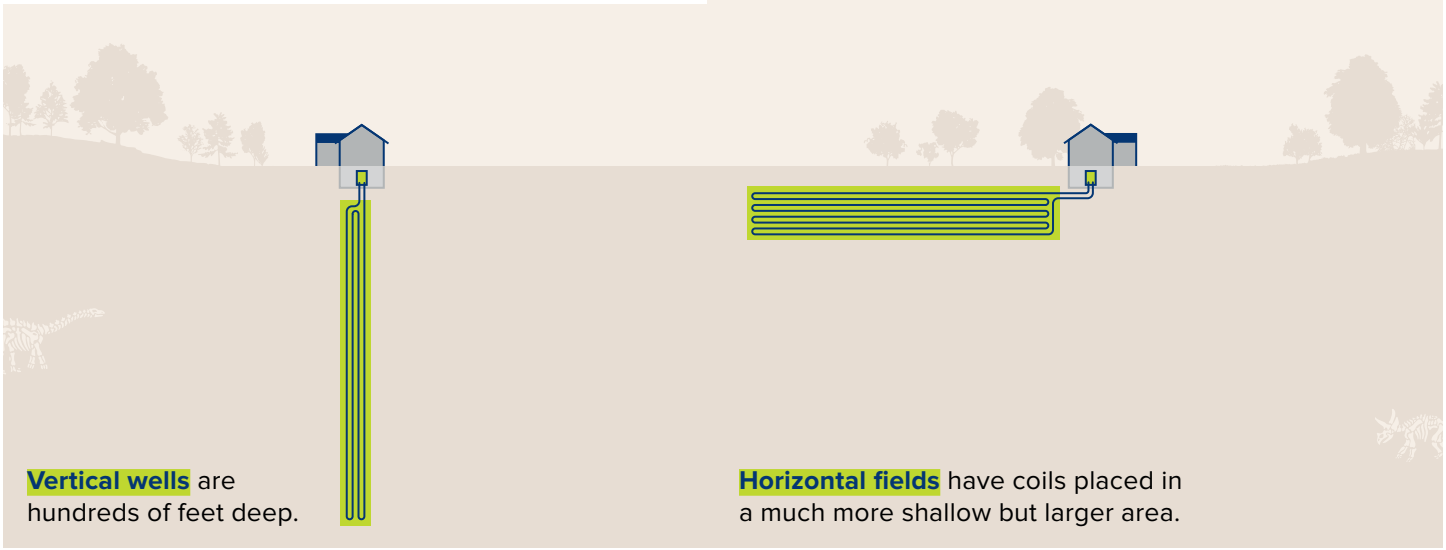
- Highest efficiency with lowest operating costs
- Quiet with no outdoor condensers or window air conditioners
- Heating and cooling distributed throughout the home with new or existing ducts
- Can also provide water heating

Ground Loop Types

Underground pipes exchange heat between the heat pump and the ground. Your installer will determine the proper type and size of ground loop based on:

- Land area available
- Type of rock or soil
- Heating and cooling needs of the home

There are two main types of loops.



Vertical wells are hundreds of feet deep.

Horizontal fields have coils placed in a much more shallow but larger area.

Ask Your Installer

- Will proper heating and cooling get to each space? **Ask for room-by-room heating and cooling calculations.**
- Are my ducts big enough for a heat pump? What modifications are needed?
- How long will installation take? Where and when will you need access?
- Who is responsible for landscaping after the ground loop is installed?
- How do I operate my system for optimal comfort and efficiency?
- What maintenance is required? How often should I clean or change air filters? Is annual service needed?
- What is the expected lifespan and warranty?

Cost Considerations

Installation Cost

- Check with NYSERDA, your electric company, and installer for incentives and financing options as larger incentives may be available for eligible customers
- While ground source heat pumps are the most efficient, they are also more expensive to install
- Cost varies with region, installation complexity, installer experience, system size, and manufacturer

Operating Cost

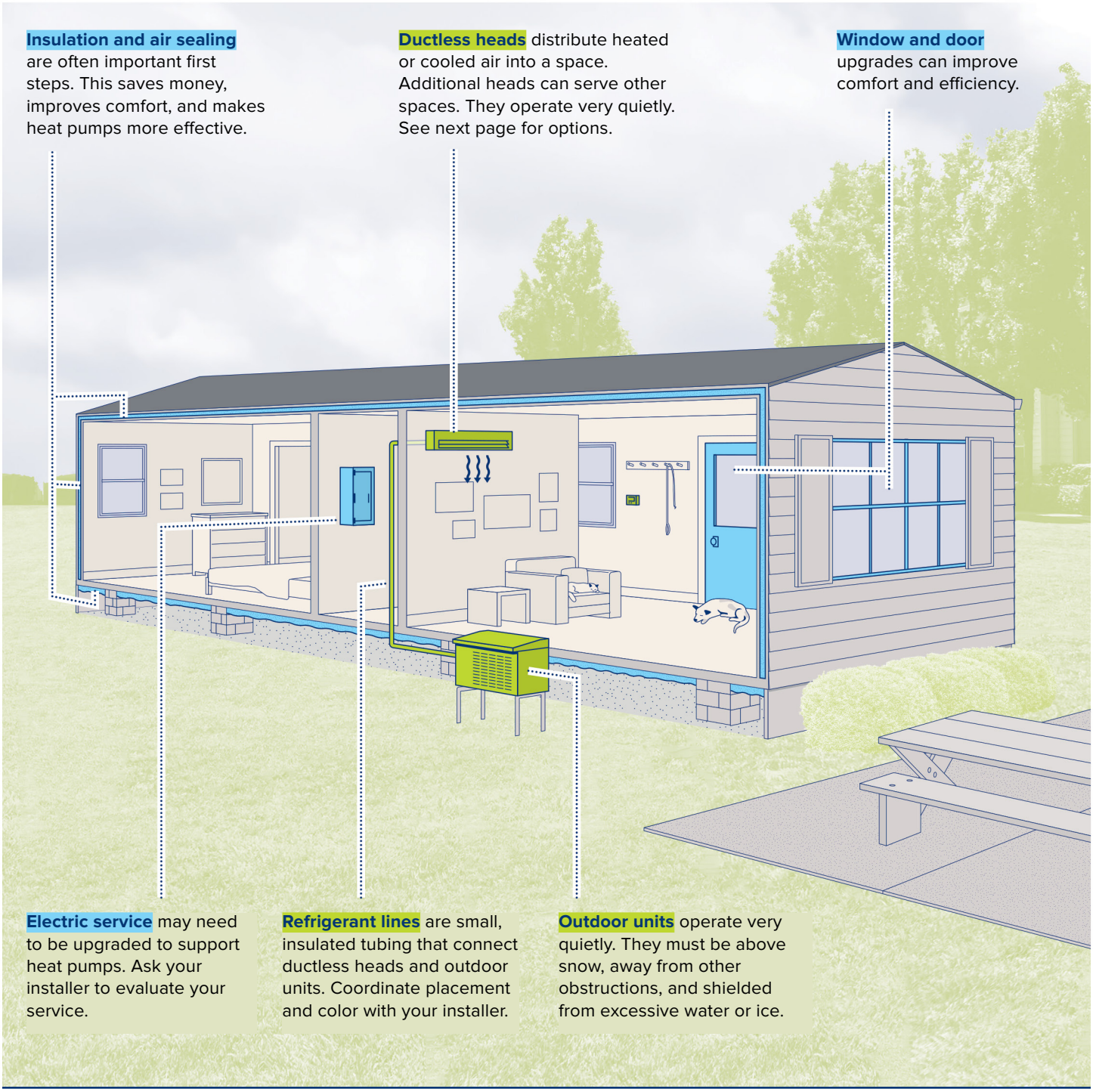
- Your overall heating costs will likely decrease if switching from oil, propane, or electric baseboard
- If you previously heated with fuel, don't be surprised to see electric bills rise; however, gas, oil, or propane bills will drop or disappear
- Efficient homes (windows, doors, insulation, air sealing) have much lower operating costs

NEW YORK STATE OF OPPORTUNITY. | NYS Clean Heat

Ductless Heat Pump for a Manufactured or Mobile Home

Heat pumps use electricity to provide clean, efficient heating and cooling.

- **Proven technology** heats and cools homes year-round across New York State
- **One system** provides comfort in both summer and winter
- **Healthy and safe** with no fuels, carbon monoxide, or window air conditioners
- **Affordable** with rebates, financing options, and low operating costs
- **Clean and green** with reduced greenhouse gas emissions
- **Versatile** solution for new or existing homes



Ductless Heat Pumps

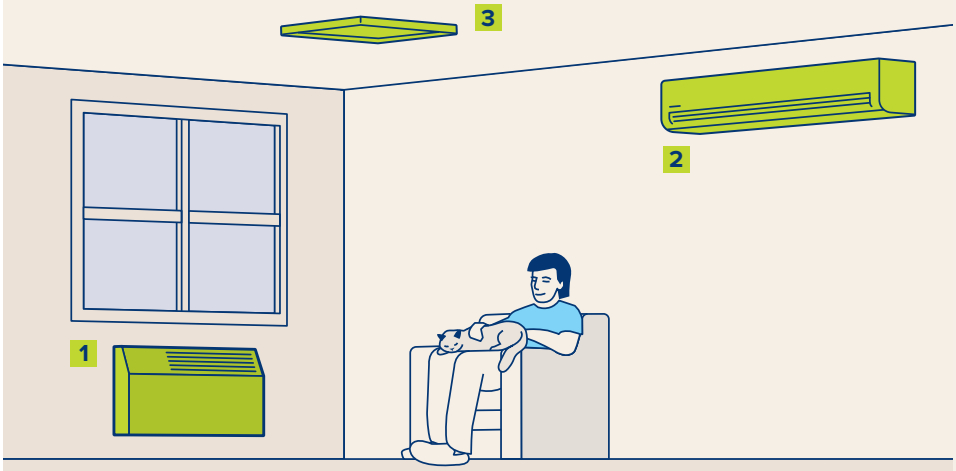
key considerations

Features

- Among simplest and least expensive heat pump system to install
- Control temperature in different areas of the home
- Quiet and efficient operation
- Eliminate window air conditioners

Types of Ductless Heads

Many options for indoor fan coils or “heads” are available. For optimal comfort and efficiency, each head should be sized to meet specific heating and cooling needs. Your heat pump installer can suggest the best options based on those needs plus size and configuration of the space.



1 **Low-wall** or **floor mount** units may be installed where radiators once were. Do not block them with furniture.

2 **High-wall** are the most common and versatile.

3 **Recessed** can be flush with ceilings or walls. Ask your installer about installation and maintenance.

Ask Your Installer

- What size units do I need? **Ask for room-by-room heating and cooling calculations.**
- Can heat pumps sufficiently heat my home or is an additional system needed?
- What is the best location for each head? Can we avoid heads directly above where people sit or sleep?
- What are my options for locating each outdoor unit?
- How long will installation take? Where and when will you need access?
- How do I operate my system for optimal efficiency?
- What maintenance is required? How often should I clean or change air filters? Is annual service needed?
- What is the expected lifespan and warranty?

Cost Considerations

Installation Cost

- Check with NYSERDA, your electric company, and installer for incentives and financing options as larger incentives may be available for eligible customers
- Ductless heat pumps are among the simplest and least expensive to install
- Cost varies with region, heat pump size, manufacturer, installation complexity, and installer experience

Operating Cost

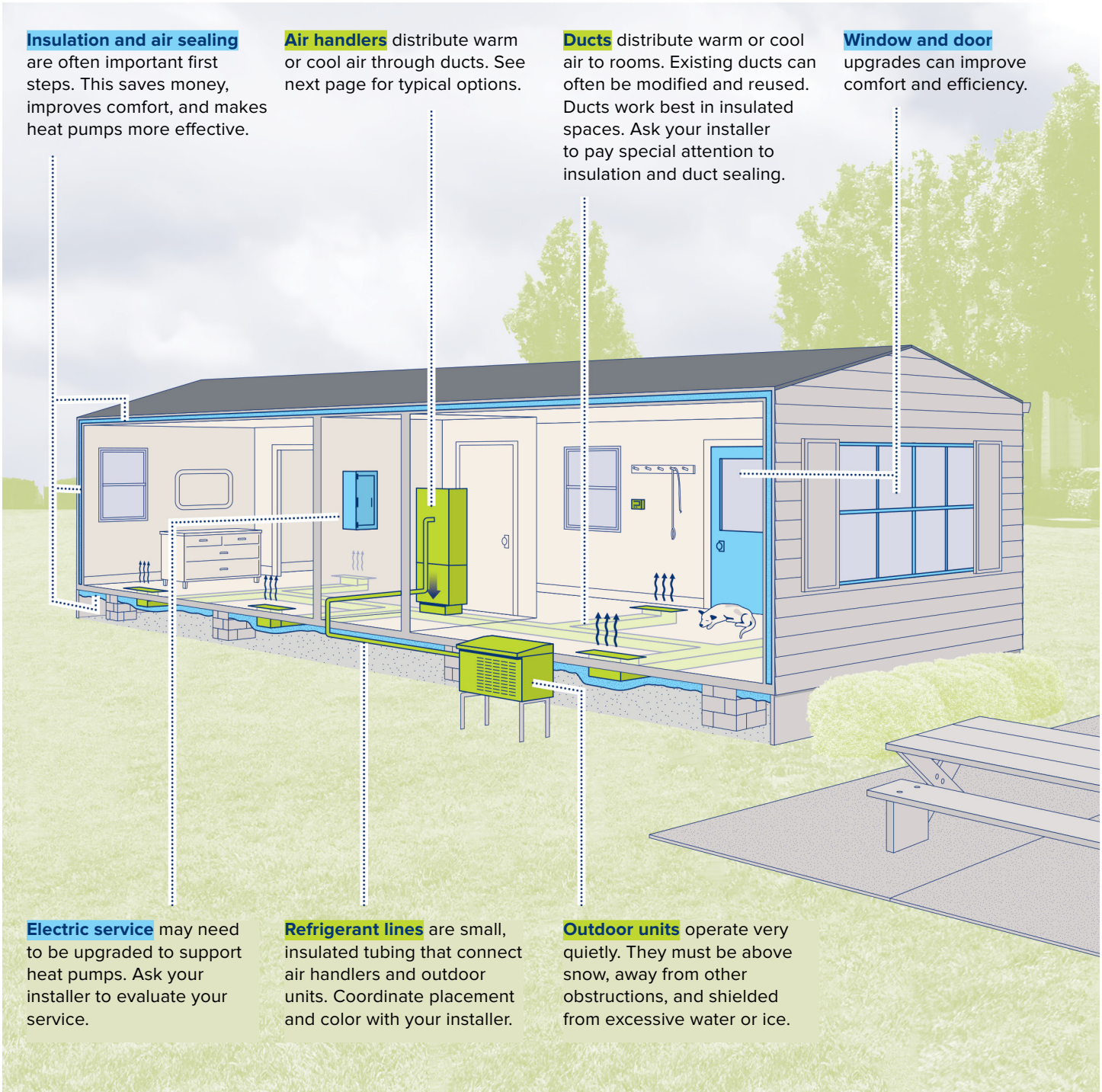
- Your overall heating costs will likely decrease if switching from oil, propane, or electric baseboard
- f you previously heated with fuel, don’t be surprised to see electric bills rise; however, gas, oil, or propane bills will drop or disappear
- Efficient homes (windows, doors, insulation, air sealing) have much lower operating costs

NEW YORK STATE OF OPPORTUNITY. | NYS Clean Heat

Ducted Heat Pump for a Manufactured or Mobile Home

Heat pumps use electricity to provide clean, efficient heating and cooling.

- **Proven technology** heats and cools homes year-round across New York State
- **One system** provides comfort in both summer and winter
- **Healthy and safe** with no fuels, carbon monoxide, or window air conditioners
- **Affordable** with rebates, financing options, and low operating costs
- **Clean and green** with reduced greenhouse gas emissions
- **Versatile** solution for new or existing homes



Ducted Heat Pumps

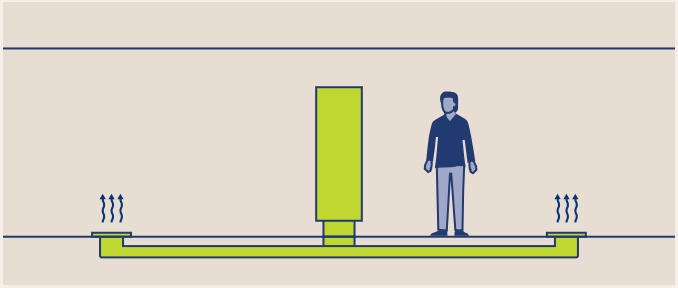
key considerations

Features

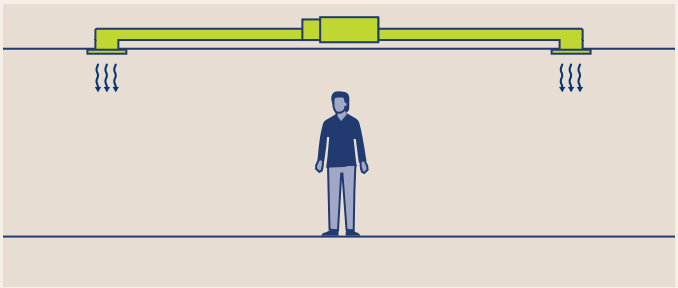
- Heating and cooling distributed throughout the home with new or existing ducts
- No wall-mounted indoor units
- Quiet and efficient operation
- Eliminate window air conditioners

Air Handler Options

Air handler equipment moves warm or cool air through ducts. Your installer can guide you to the best options based on heating and cooling needs, existing systems, and home configuration.



Conventional air handlers move air through larger ducts. They are often located in basements, attics, or utility closets. They can be installed to distribute air upwards, downwards, or sideways to fit within your home.



Compact ducted air handlers usually serve smaller areas such as one to three rooms. Their slim profile means they often fit in dropped ceilings, but leaving access for maintenance is important.

Ask Your Installer

- Will proper heating and cooling get to each space? **Ask for room-by-room heating and cooling calculations.**
- Are my ducts big enough for a heat pump? What modifications are needed?
- Can heat pumps sufficiently heat my home or is an additional system needed?
- What are my options for locating each outdoor unit?
- How long will installation take? Where and when will you need access?
- How do I operate my system for optimal comfort and efficiency?
- What maintenance is required? How often should I clean or change air filters? Is annual service needed?
- What is the expected lifespan and warranty?

Cost Considerations

Installation Cost

- Check with NYSERDA, your electric company, and installer for incentives and financing options as larger incentives may be available for eligible customers
- If your home has ducts that can be reused, installation costs will be lower
- Cost varies with region, heat pump size, manufacturer, installation complexity, and installer experience

Operating Cost

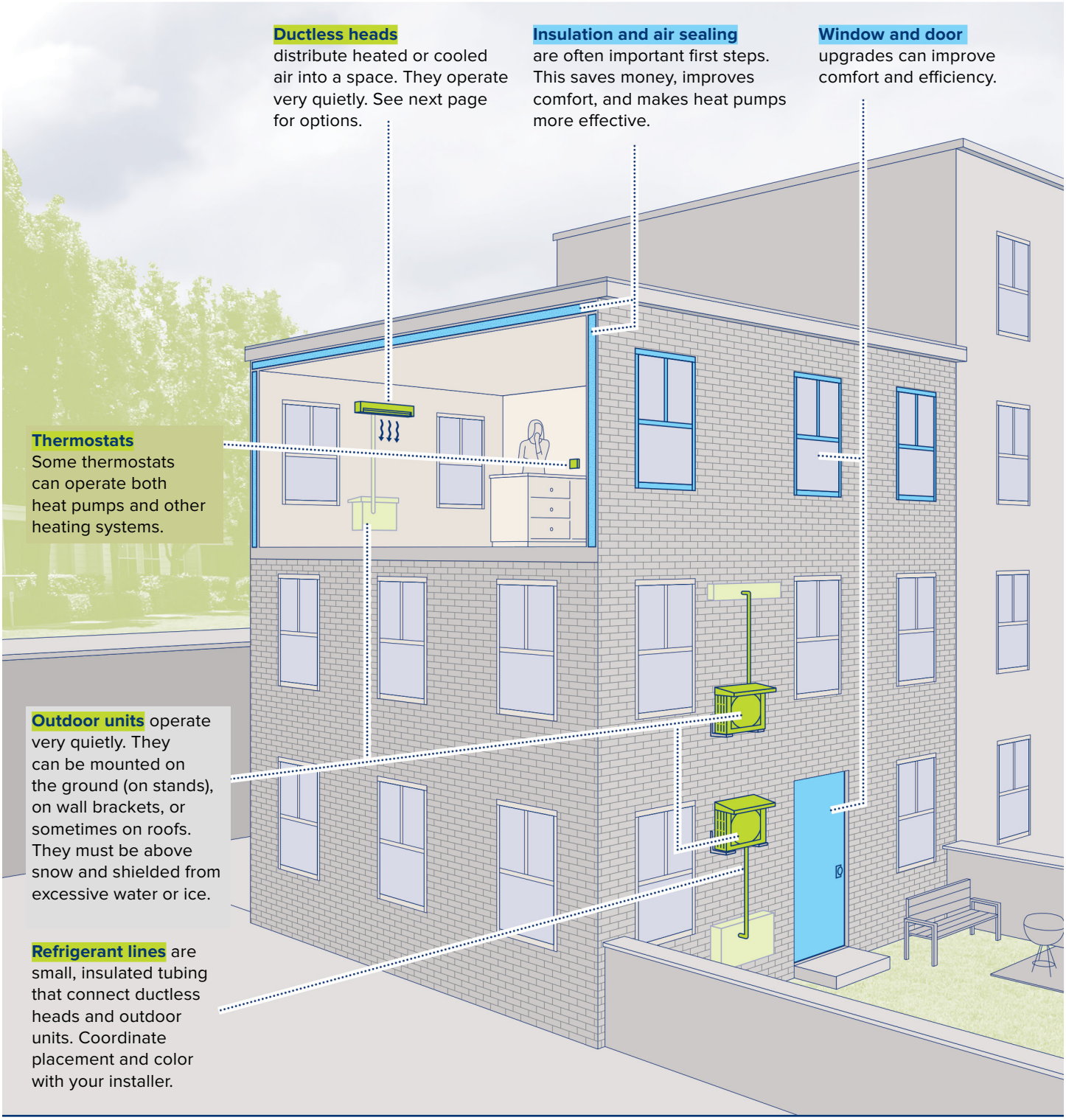
- Your overall heating costs will likely decrease if switching from oil, propane or electric baseboard
- If you previously heated with fuel, don't be surprised to see electric bills rise; however, gas, oil, or propane bills will drop or disappear
- Efficient homes (windows, doors, insulation, air sealing) have much lower operating costs

NEW YORK STATE OF OPPORTUNITY. | NYS Clean Heat

Ductless Heat Pump for an Apartment

Heat pumps use electricity to provide clean, efficient heating and cooling.

- **Proven technology** heats and cools homes year-round across New York State
- **One system** provides comfort in both summer and winter
- **Healthy and safe** with no fuels, carbon monoxide, or window air conditioners
- **Affordable** with rebates, financing options, and low operating costs
- **Clean and green** with reduced greenhouse gas emissions
- **Versatile** solution for new or existing homes



Ductless Heat Pumps

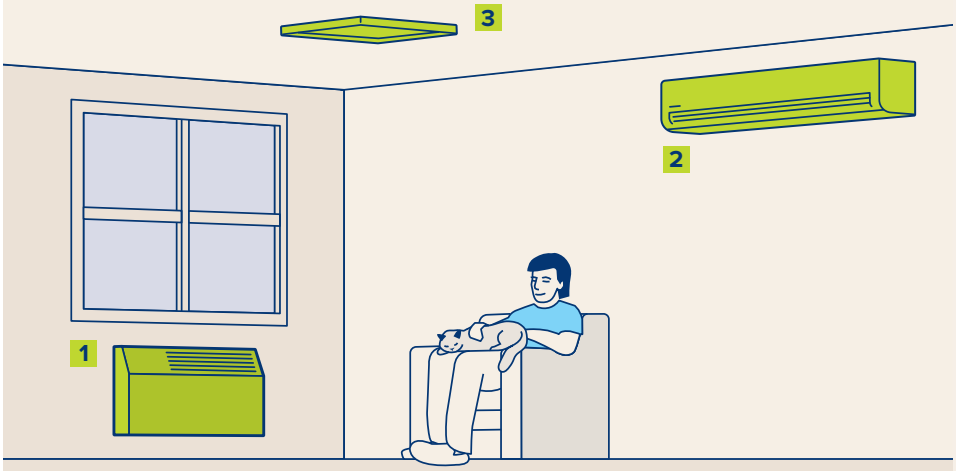
key considerations

Features

- Among simplest and least expensive heat pump system to install
- Control temperature in different areas of the home
- Quiet and efficient operation
- Eliminate window air conditioners

Types of Ductless Heads

Many options for indoor fan coils or "heads" are available. For optimal comfort and efficiency, each head should be sized to meet specific heating and cooling needs. Your heat pump installer can suggest the best options based on those needs plus size and configuration of the space.



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Ask Your Installer

- What size units do I need? **Ask for room-by-room heating and cooling calculations.**
- Can heat pumps sufficiently heat my home or is an additional system needed?
- What is the best location for each head? Can we avoid heads directly above where people sit or sleep?
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Cost Considerations

Installation Cost

- Check with NYSERDA, your electric company, and installer for incentives and financing options as larger incentives may be available for eligible customers
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- Cost varies with region, heat pump size, manufacturer, installation complexity, and installer experience

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- Efficient homes (windows, doors, insulation, air sealing) have much lower operating costs

NEW YORK STATE OF OPPORTUNITY. | NYS Clean Heat

Multi-Zone Heat Pump for a Townhome

Heat pumps use electricity to provide clean, efficient heating and cooling.

- **Proven technology** heats and cools homes year-round across New York State
- **One system** provides comfort in both summer and winter
- **Healthy and safe** with no fuels, carbon monoxide, or window air conditioners
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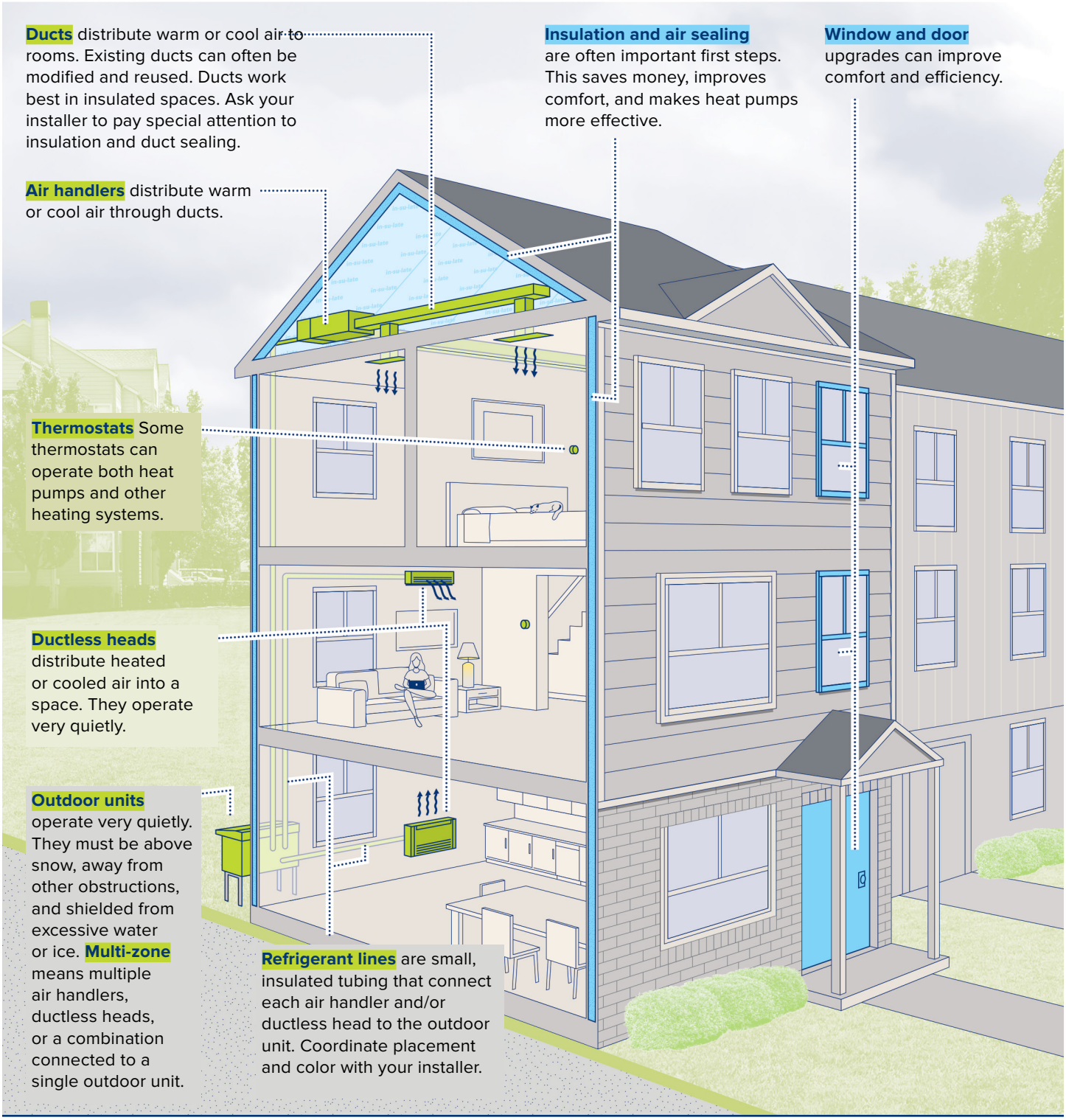
- **Versatile** solution for new or existing homes



Multi-Zone Air Source Heat Pumps

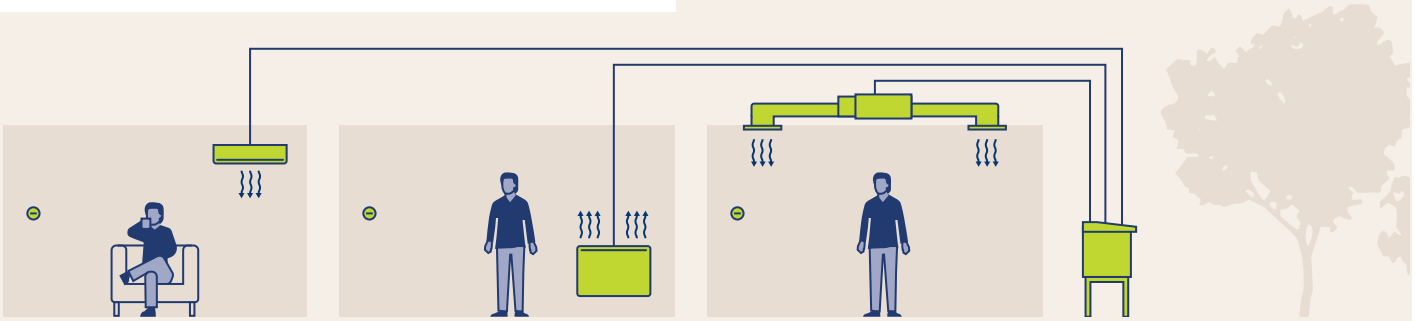
key considerations

Features

- Save space outdoors with multiple indoor units connected to one outdoor unit
- Control temperature in different areas of the home
- Options for both ducted and ductless heating and cooling
- Quiet and efficient operation
- Eliminate window air conditioners

Types of Indoor Units

Multi-zone heat pumps allow you to "mix and match" ducted air handlers and ductless "heads." Each should be sized to meet specific heating and cooling needs of the space it serves. Your installer can suggest the best options based on those needs, configuration of the home, and location of ducts (if present). Options include:



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Ducted air handlers come in a wide range of configurations. Some serve a single room; others can serve most of a home.

Each indoor unit can have its own thermostat, but all indoor units connect to a **single outdoor unit**.

Ask Your Installer

- What size units do I need? **Ask for room-by-room heating and cooling calculations.**
- Can heat pumps sufficiently heat my home or is an additional system needed?
- What is the best location for each indoor unit? Can we avoid heads directly above where people sit or sleep?
- What are my options for locating the outdoor unit(s)?
- How long will installation take? Where and when will you need access?
- How do I operate my system for optimal comfort and efficiency?
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- What is the expected lifespan and warranty?

Cost Considerations

Installation Cost

- Check with NYSERDA, your electric company, and installer for incentives and financing options as larger incentives may be available for eligible customers
- Each zone adds cost, so use fewer zones when practical
- Cost varies with region, heat pump size, manufacturer, installation complexity, and installer experience

Operating Cost

- Your overall heating costs will likely decrease if switching from oil, propane, or electric baseboard
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