

LPEEA

La Plata Electric Association, Inc.

A Touchstone Energy[®] Cooperative 

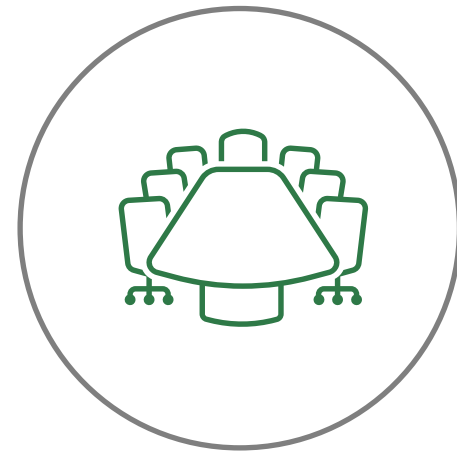
Winter Is Coming: The Latest In Electric Heating Tech

About LPEA



Cooperative

A rural electric co-op founded in 1939. We deliver power at cost to our members – who are also our owners.



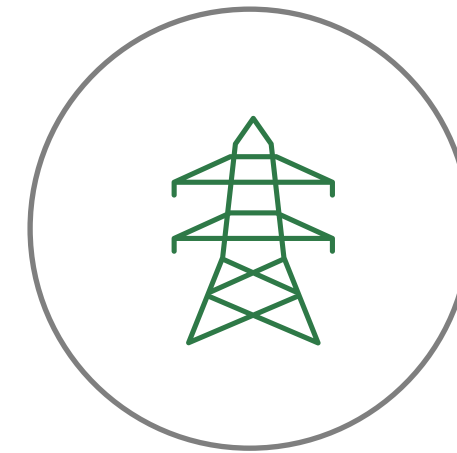
Board of Directors

Governed by a locally elected 12-person board of directors.



Top Five

Fifth largest of 22 cooperatives in Colorado.



Power Supply

We sell close to a billion kWh's a year - 95% from Tri-State and 5% sourced locally.

Strategic Goal

LPEA will strive to reduce its carbon footprint by 50% from 2018 levels by year 2030 while keeping members' cost of electricity lower than 70% of its Colorado cooperative peers.



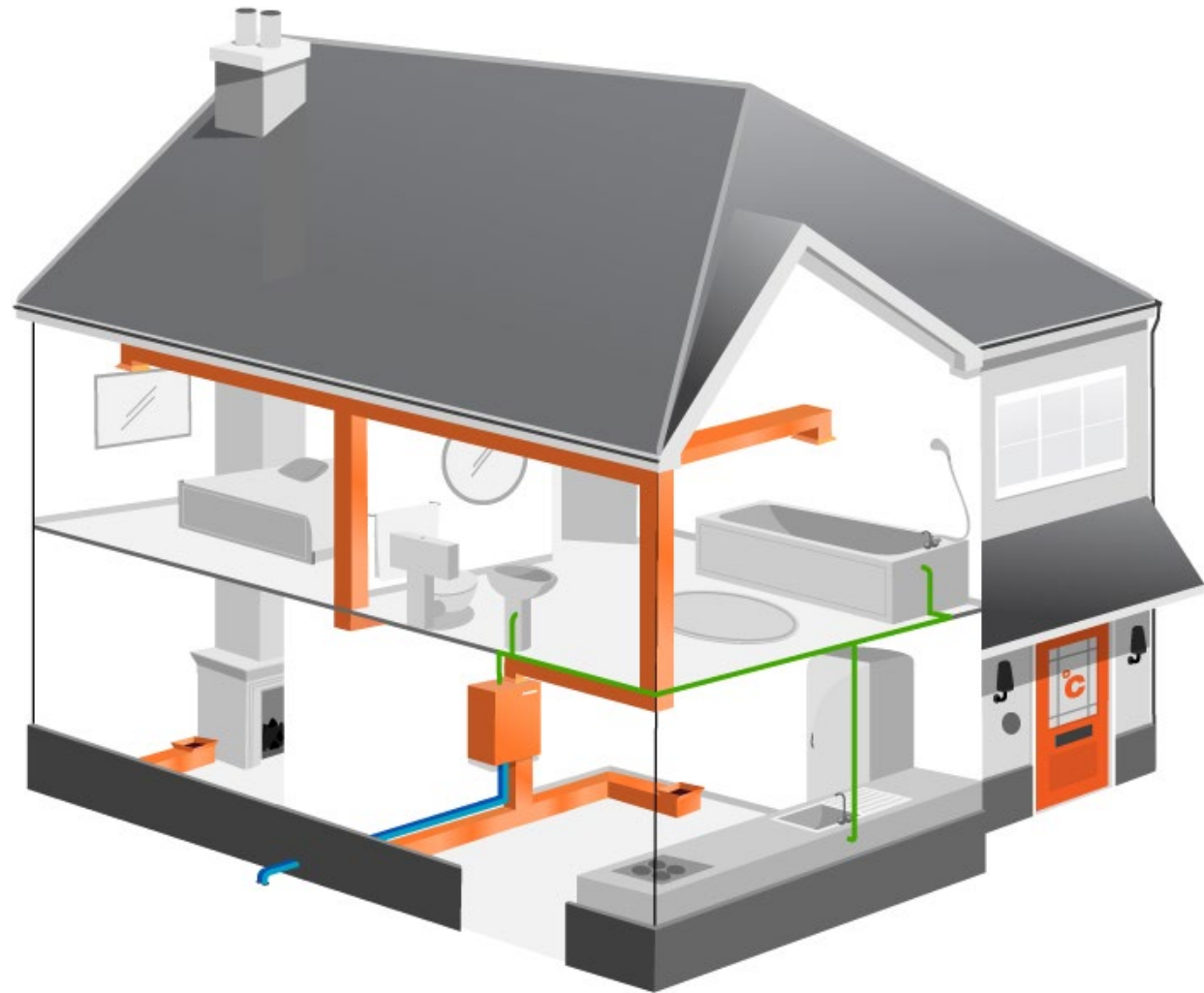


Beneficial Electrification (BE)

Beneficial Electrification means using electricity as a power source (over propane or gas) when doing so satisfies at least one of the following conditions, without adversely affecting the others:

- Saves members money.
- Benefits the environment and reduces GHG emissions.
- Fosters a more robust and resilient power grid.

AGENDA



Types of electric heating

- Baseboard
- Boiler and radiant systems
- ETS
- Heat Pumps

Cost comparison

LPEA Rebates + tax incentives

How to get started purchasing a new system



Types of Electric Heating

Baseboard Heating

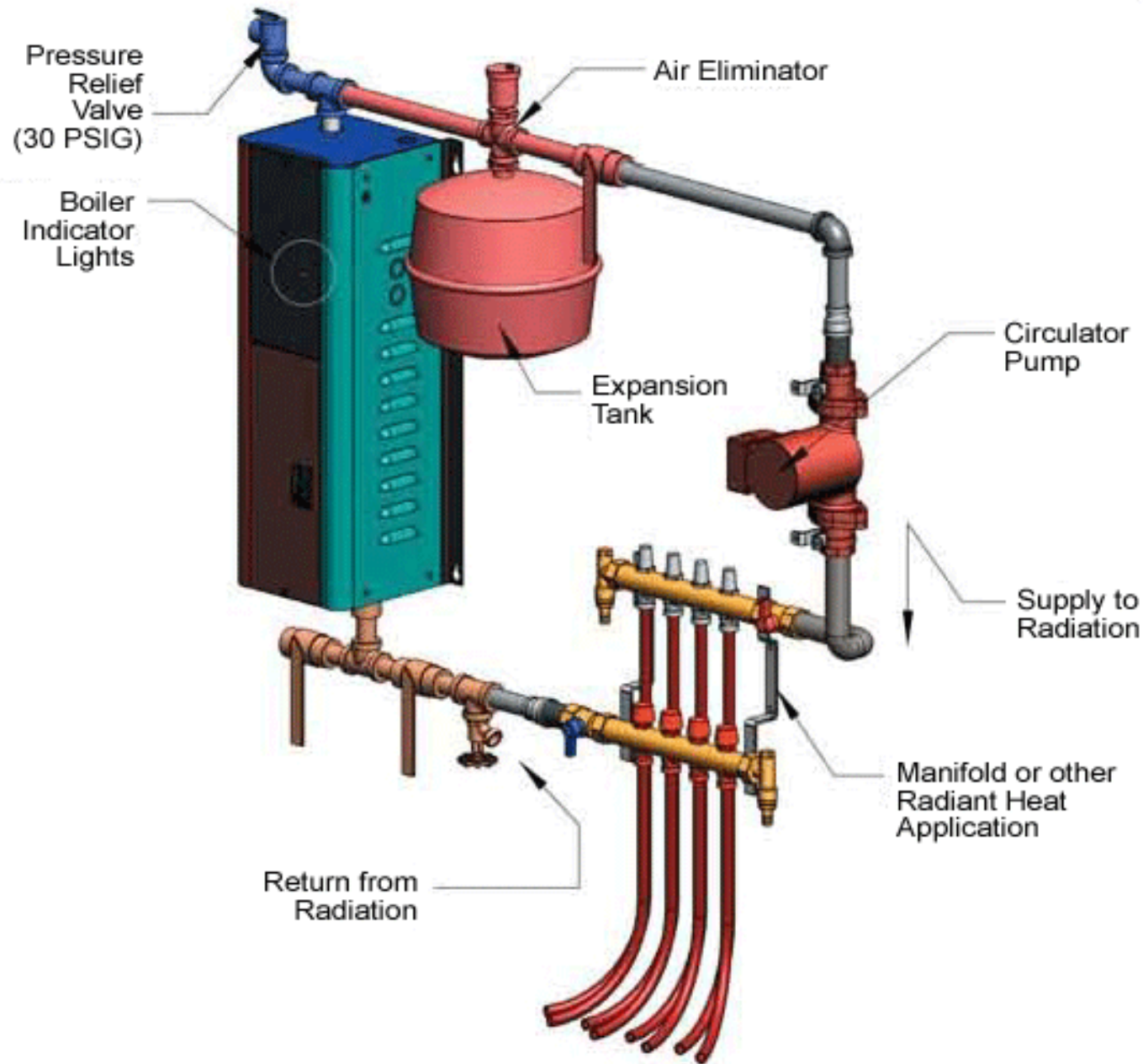
Resistive Heating – electric current passes through a conductive material

Available in many form factors

Lower up-front cost, costly in the long term



Electric Boiler and Radiant Systems



Radiant

Electric resistance wire loops in one or more zones

Hydronic

Hot water circulated through in-floor tubing or radiators in one or more zones

Can use a buffer tank or domestic hot water tank

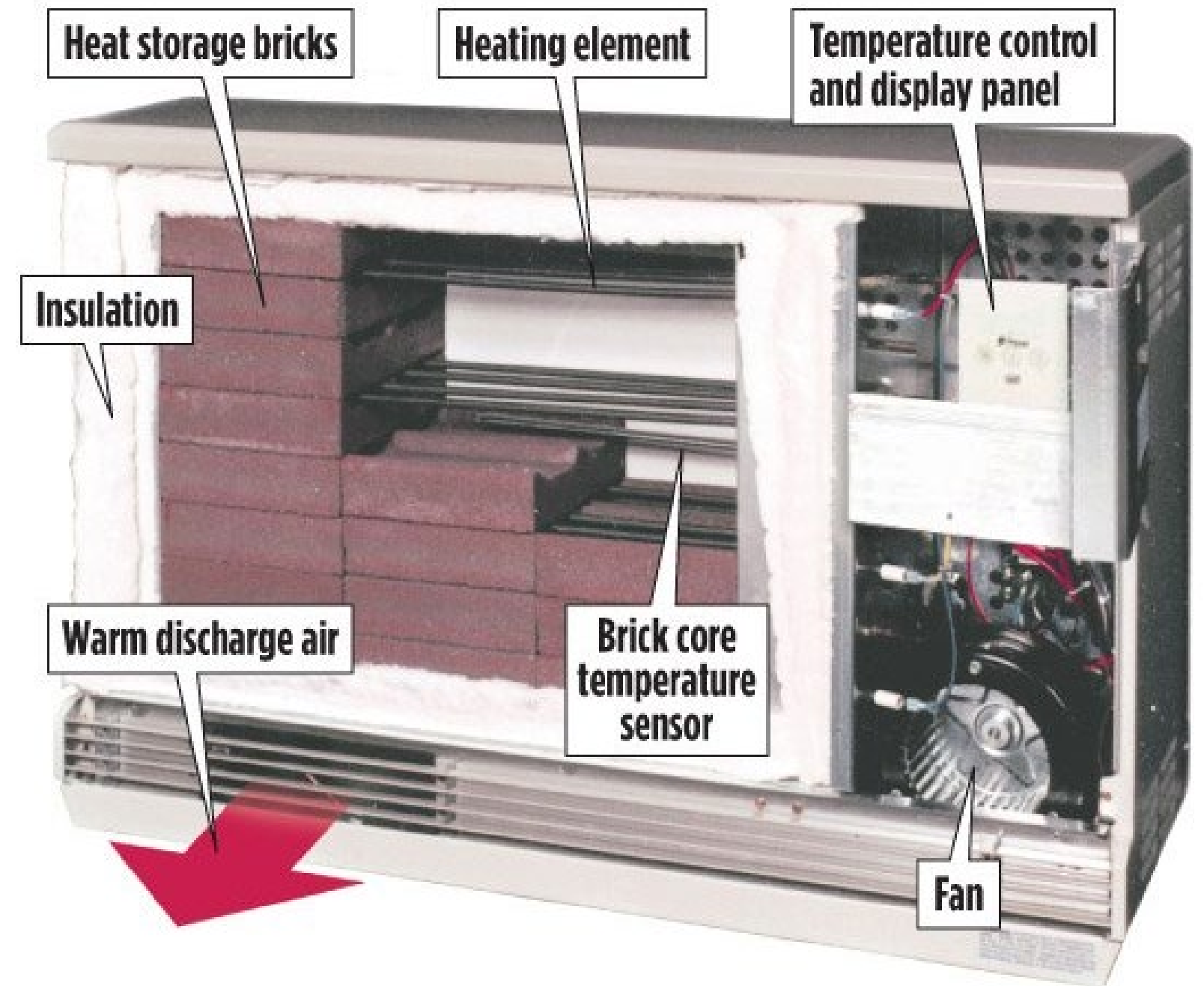
ETS and heat pump options available

ETS – Electrical Thermal Storage

Available in room units, central air, and hydronic in-floor

Off-Peak power used to store heat in a thermal mass

PLC Controller takes advantage of Time-of-Use Rate



Time-of-Use Rate Class

Residential Rate Comparison: Standard vs Time-of-Use

Standard

Energy Rate = 12.56¢ per kWh

Off-Peak
12 a.m.-4 p.m.

Hours to Watch
4 p.m.-9 p.m.
one hour a month when
energy usage is highest =
\$1.50 per kW used during
that one hour *only*

Off-Peak
9 p.m.-12 a.m.

Time-of-Use

Off-Peak
12 a.m.-6 a.m.
6.2¢ per kWh

On-Peak
6 a.m.-9 a.m.
25.61¢ per kWh

Off-Peak
9 a.m.-5 p.m.
6.2¢ per kWh

On-Peak
5 p.m.-10 p.m.
25.61¢ per kWh

Off-Peak
10 p.m.-
12 a.m.
6.2¢ per
kWh

12a 1a 2a 3a 4a 5a 6a 7a 8a 9a 10a 11a 12p 1p 2p 3p 4p 5p 6p 7p 8p 9p 10p 11p 12a



For more information: lpea.coop/rates

Save \$ - electric bills can be reduced by switching to Time-of-Use

On and Off-Peak periods

More than 4,000 LPEA Co-Op Members currently on TOU

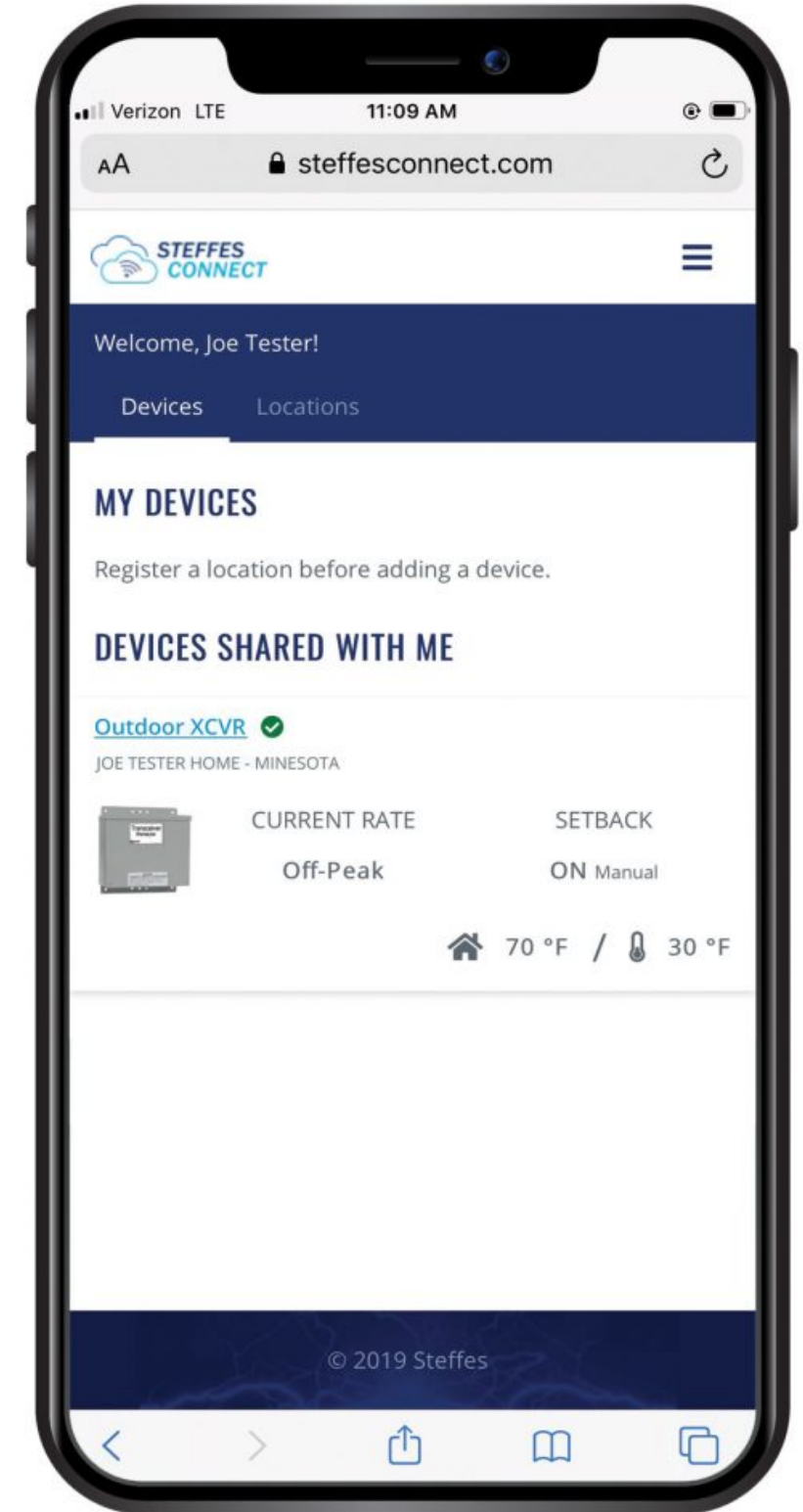
ETS Controls – Steffes Connect

Control your consumption

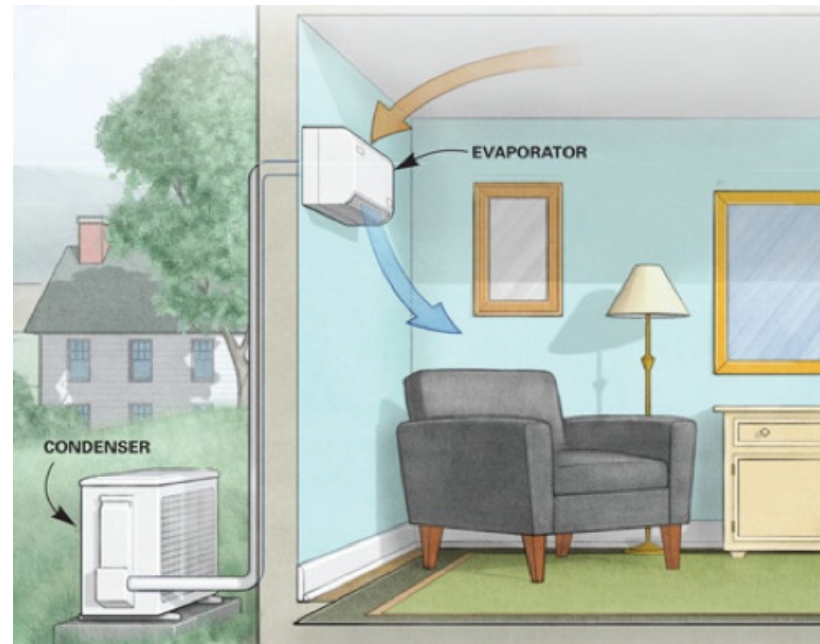
Visibility and remote control

Weather forecasting

Monitor indoor and outdoor temperature



How Heat Pumps Work

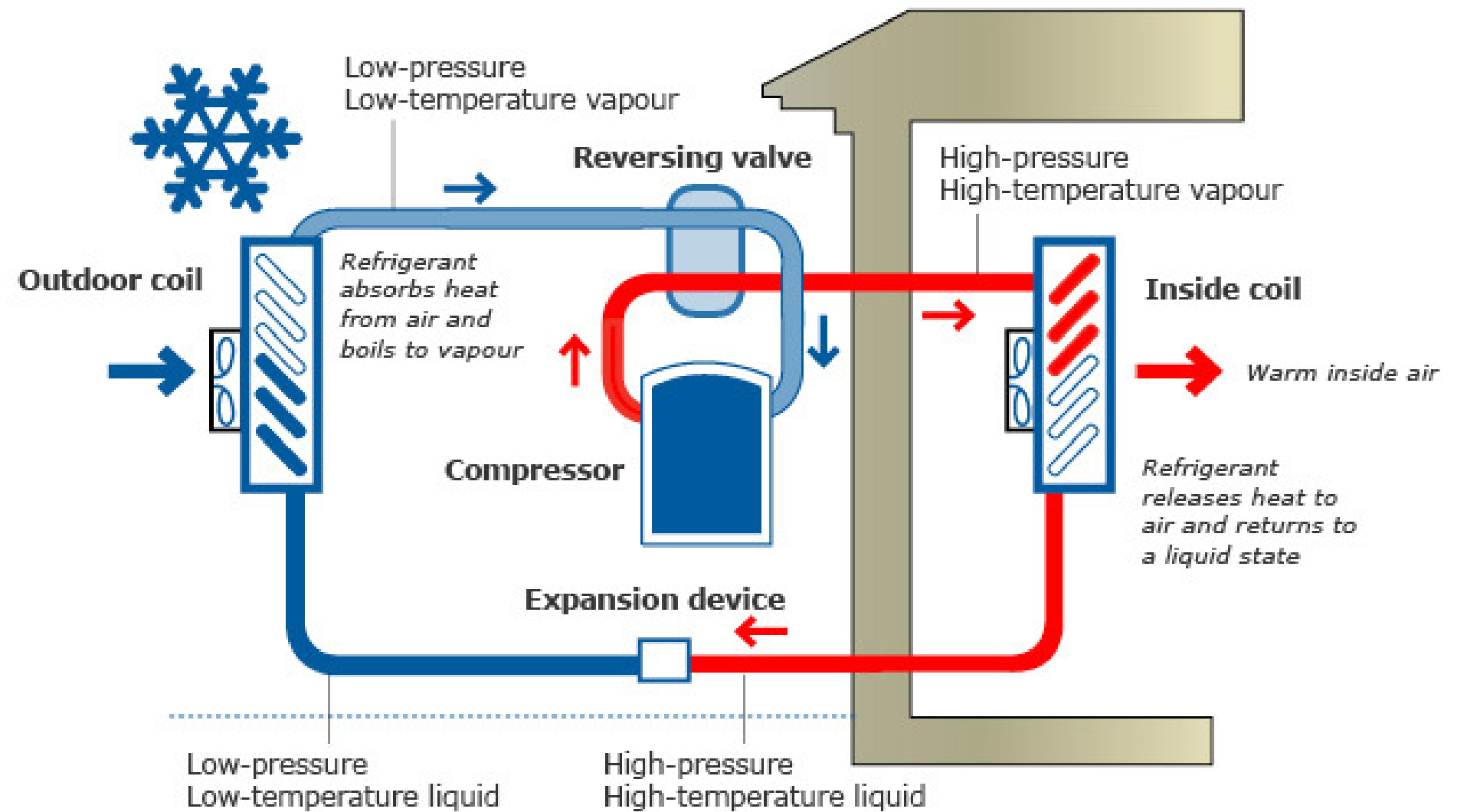


Heating Mode:

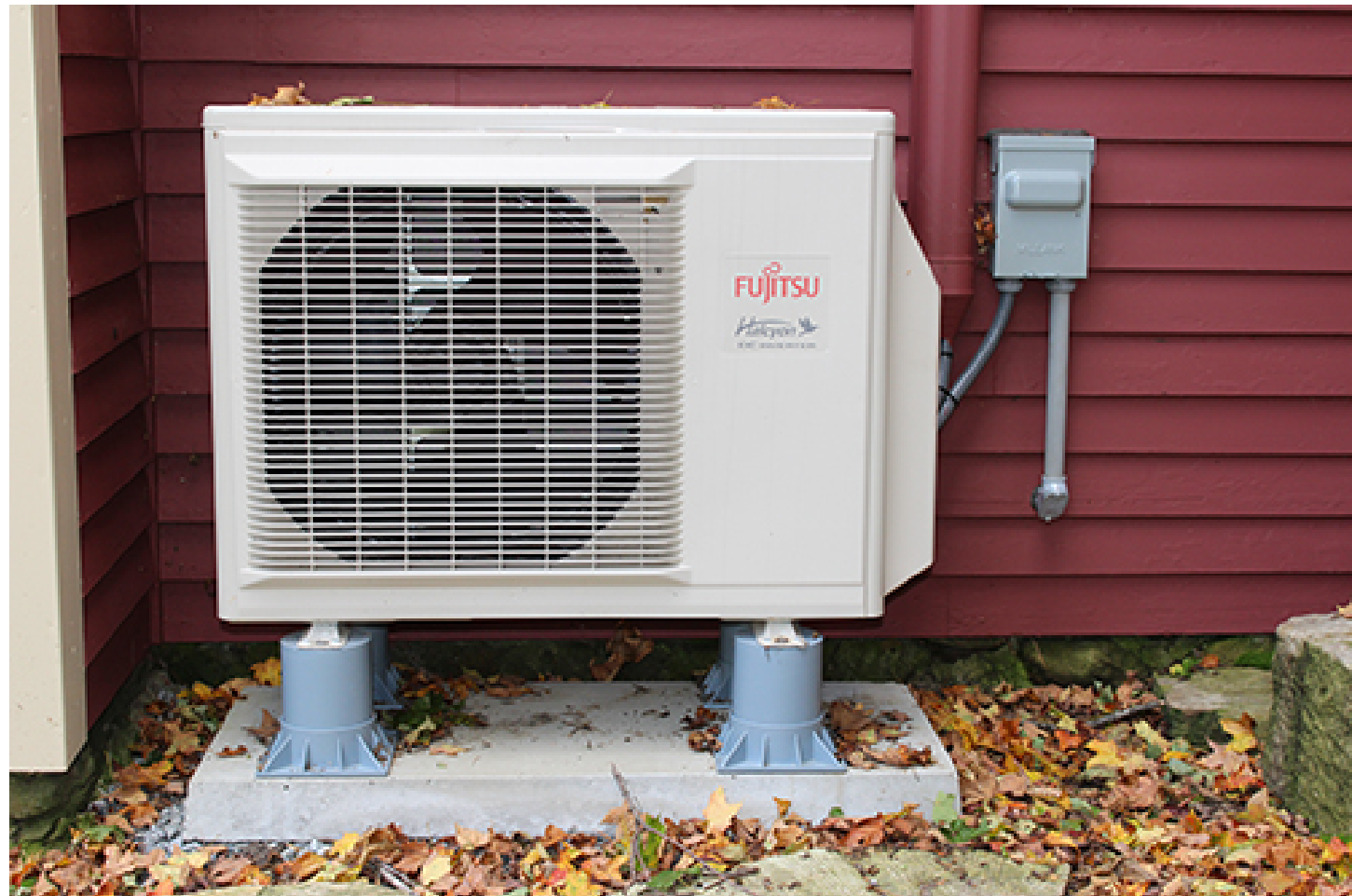
Outdoor Unit > Compressor > Indoor Unit > Expansion > Outdoor Unit

Cooling Mode:

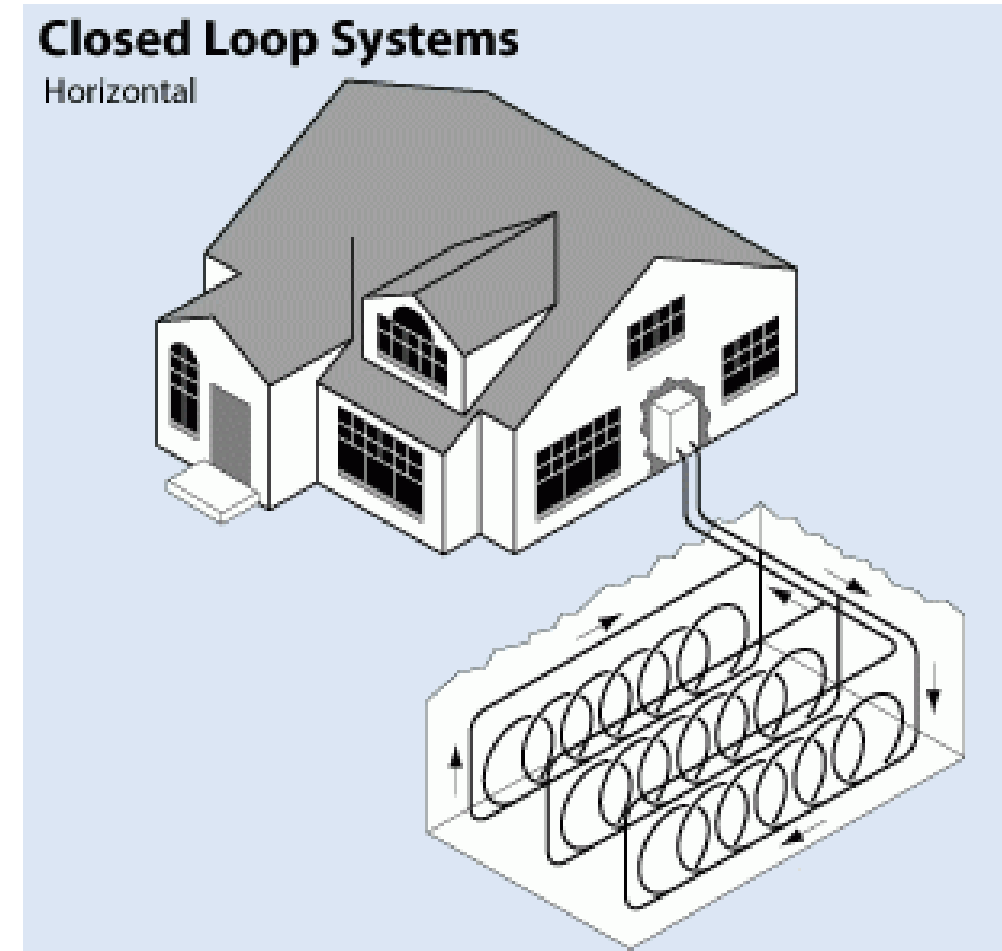
Indoor Unit > Compressor > Outdoor Unit > Expansion Valve > Indoor Unit



Heat Pump Types – Outdoor Unit



Air Source Heat Pump



Ground Source Heat Pump

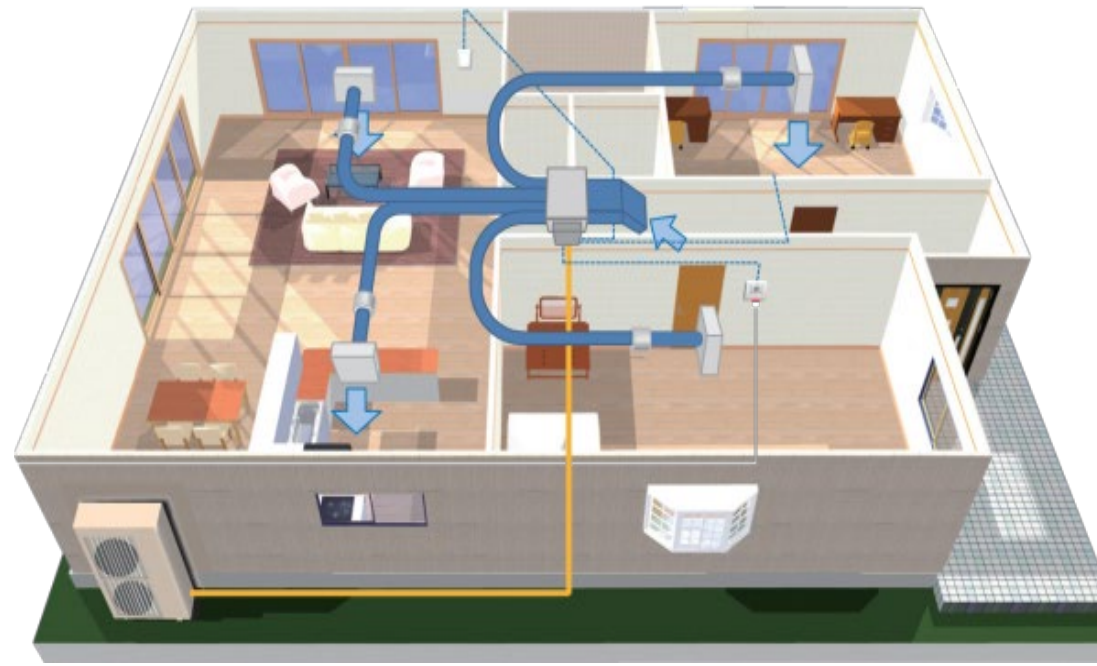
Heat Pump Types – Indoor Unit



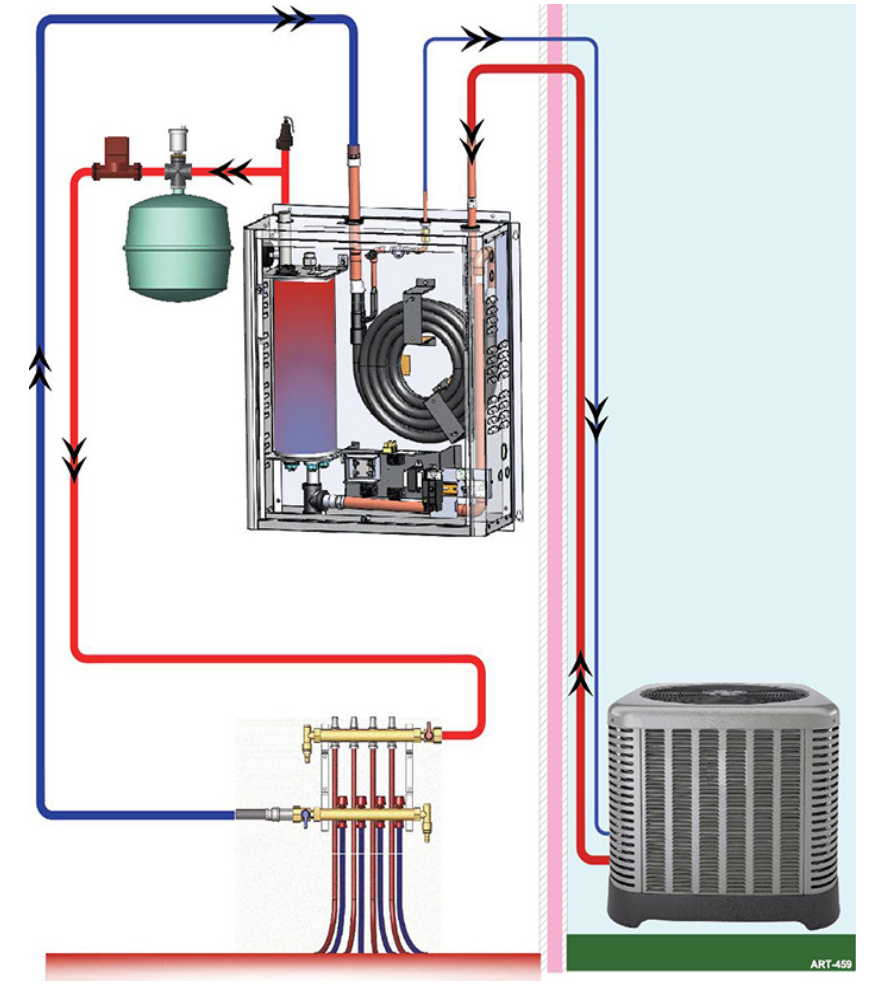
Central Air Handler



Mini-Split / Ductless



Compact Ductless / Distributed



Hydronic / Boiler

Heat Pump Replacement Options



Complete Replacement – replace existing system with a new heat pump

Supplement Existing System – new heat pump works alongside the existing system

Zonal Supplement – heat pump added to heat/cool specific zones

Heat Pump Benefits + Myths

Benefits

- Improved Air Quality & Safety
- Cooling

Myths

- Heat pumps are not efficient in cold temperatures
- Heat pumps need a backup
- Heat pumps don't work at our altitude
- Heat pumps only work in newer homes
- Heat pumps need to be turned down at night to save energy
- Heat pumps require a lot of maintenance

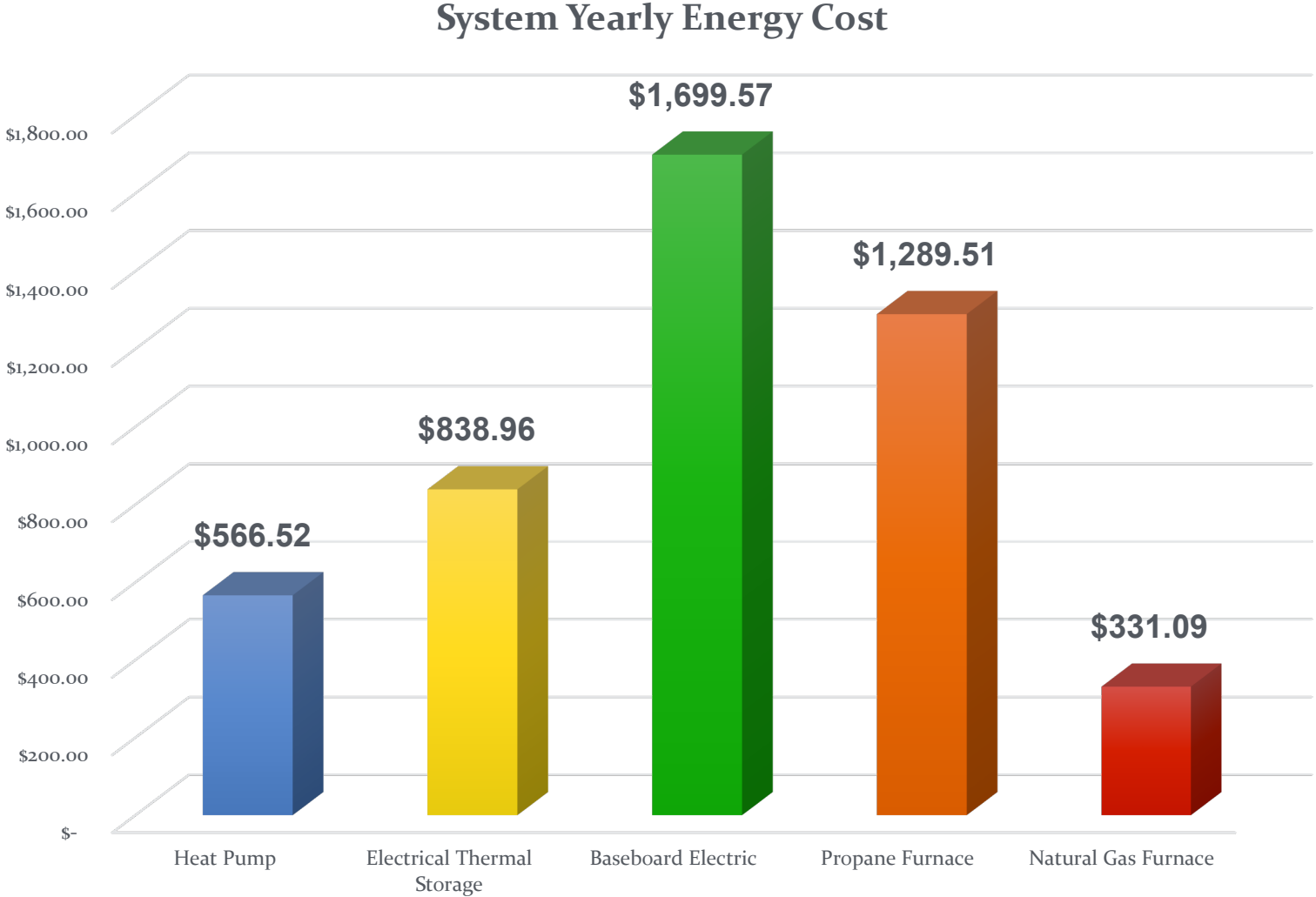




Cost Comparison & Rebates

Heating Options Cost Comparison

System	Cost	Rebates	Yearly Energy Cost
Heat Pump	\$ 12,780.00	\$ 1,420.00	\$ 566.52
Electrical Thermal Storage	\$ 7,000.00	\$ 420.00	\$ 838.96
Baseboard Electric	\$ 5,000.00		\$ 1,699.57
Propane Furnace	\$ 10,000.00		\$ 1,289.51
Natural Gas Furnace	\$ 10,000.00		\$ 331.09



Rebates + Incentives



**More info on our website at
LPEA.coop/rebates**

Heat Pump Rebates

Type	Eligibility Requirements	Rebate Amount*
Air Source 15-17 SEER	Minimum 1 ton	\$350/ton
Air Source >17 SEER	Minimum 1 ton	\$500/ton
ETS backup		\$100/unit
Through wall unit		\$135/unit
Ground Source new	Minimum ¾ ton	\$550/ton
Ground Source existing	Minimum ¾ ton	\$300/ton
Air-to-Water	Minimum EER 19 Minimum COP 4	\$450/ton

Permanent Electric Heat Rebates

\$30/kW for Electric Thermal Storage (ETS) heater controlled by a timer or master control system

\$30/kW for Thermal Slab heating controlled by a timer or master control system Timer Credit

Up to \$25 per timer installed, not to exceed 50% of material cost (smart thermostats included)



How to Get Started

How to Get Started

Energy Efficiency First

1. Address building envelope
2. Limit heat generating plug loads
3. Use passive solar to heat and blinds or curtains to keep things cool

Get an energy audit



How to Get Started Working with a Contractor

Electric Boiler + Baseboard

HVAC Contractor or Plumber and Electrician

- System Sizing, Installation, Rebate

ETS

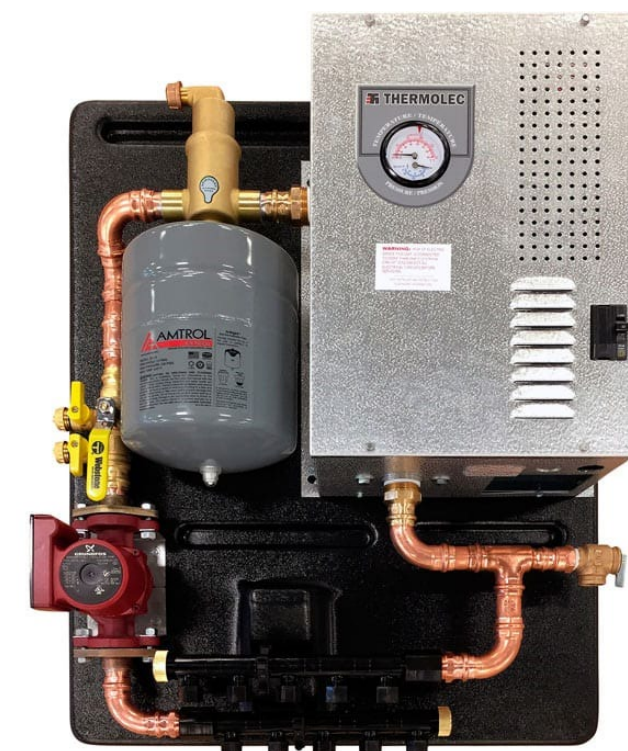
LPEA Energy Management Advisor or Durango Electric

- System Sizing, Installation, PLC Configuration, Time-of-Use, Rebates

Heat Pump

HVAC Contractor and Quality Install Program

- Manual J, System Selection, Installation, Rebate



Resources

LPEA Energy Management Team

rebates@lpea.coop or 970-247-5786

LPEA.COOP – Member Services Section

LOVEELECTRIC.ORG

NEEP.ORG





Questions?

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Thank you!

www.lpea.coop