

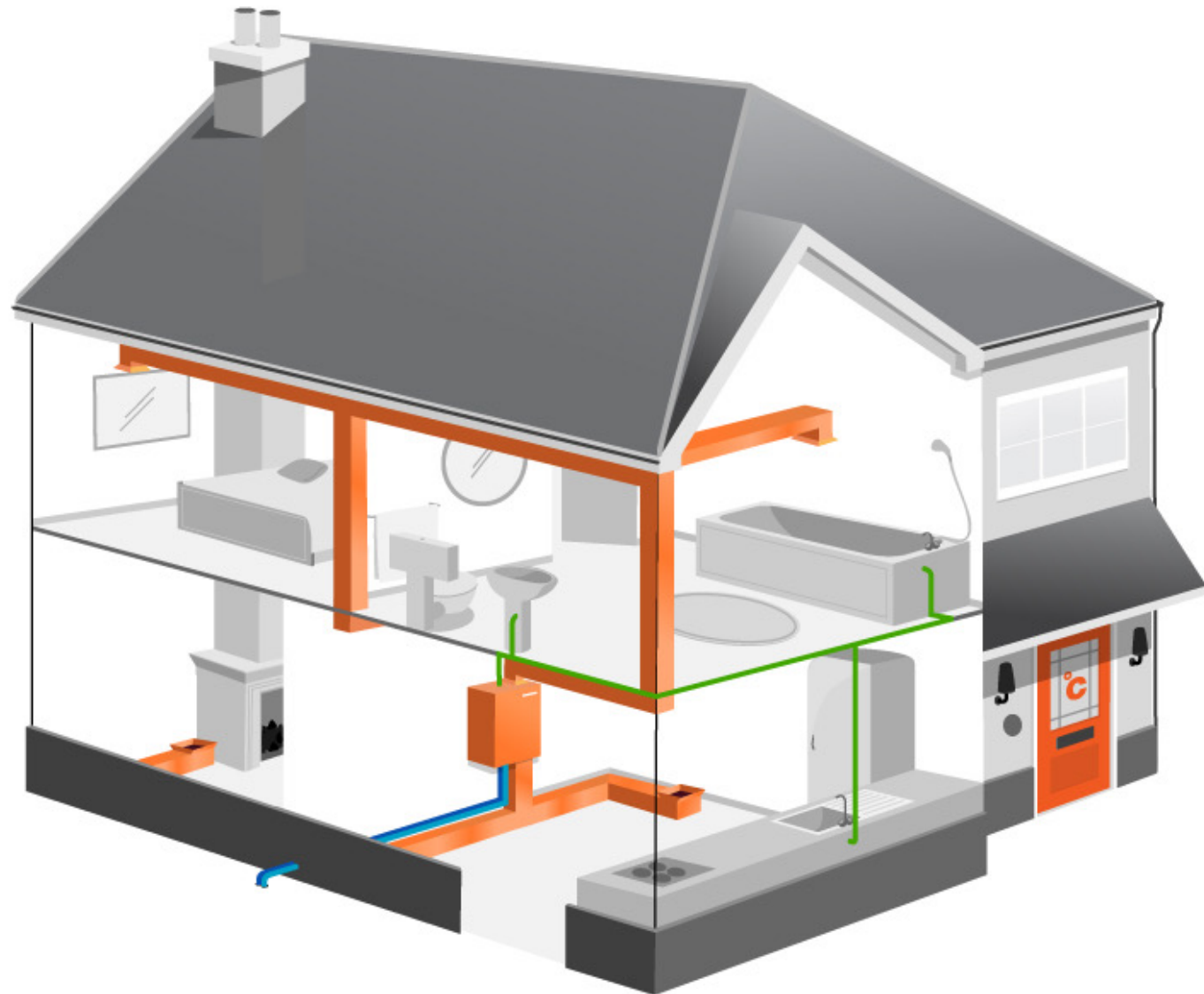
# LPEEA

La Plata Electric Association, Inc.

A Touchstone Energy<sup>®</sup> Cooperative 

## The Latest in Electric Heating Tech

# AGENDA



- Reducing Heating Load
- Indoor Air Quality
- Electric Heating Options
- Heat Pumps
- Cost Comparison
- LPEA Rebates + Tax Incentives
- How To Get Started Purchasing A New System
- Q&A Session



# 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



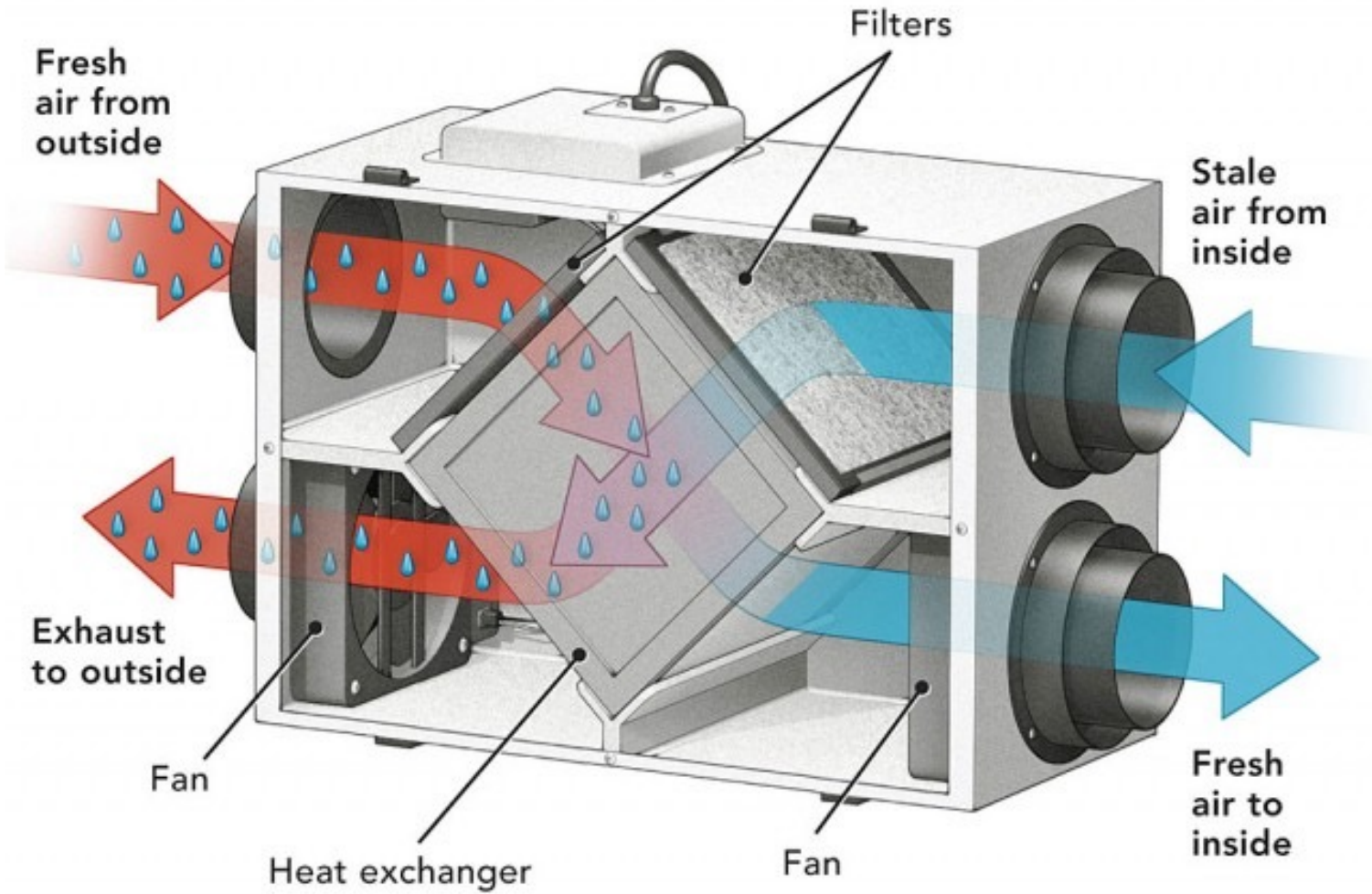
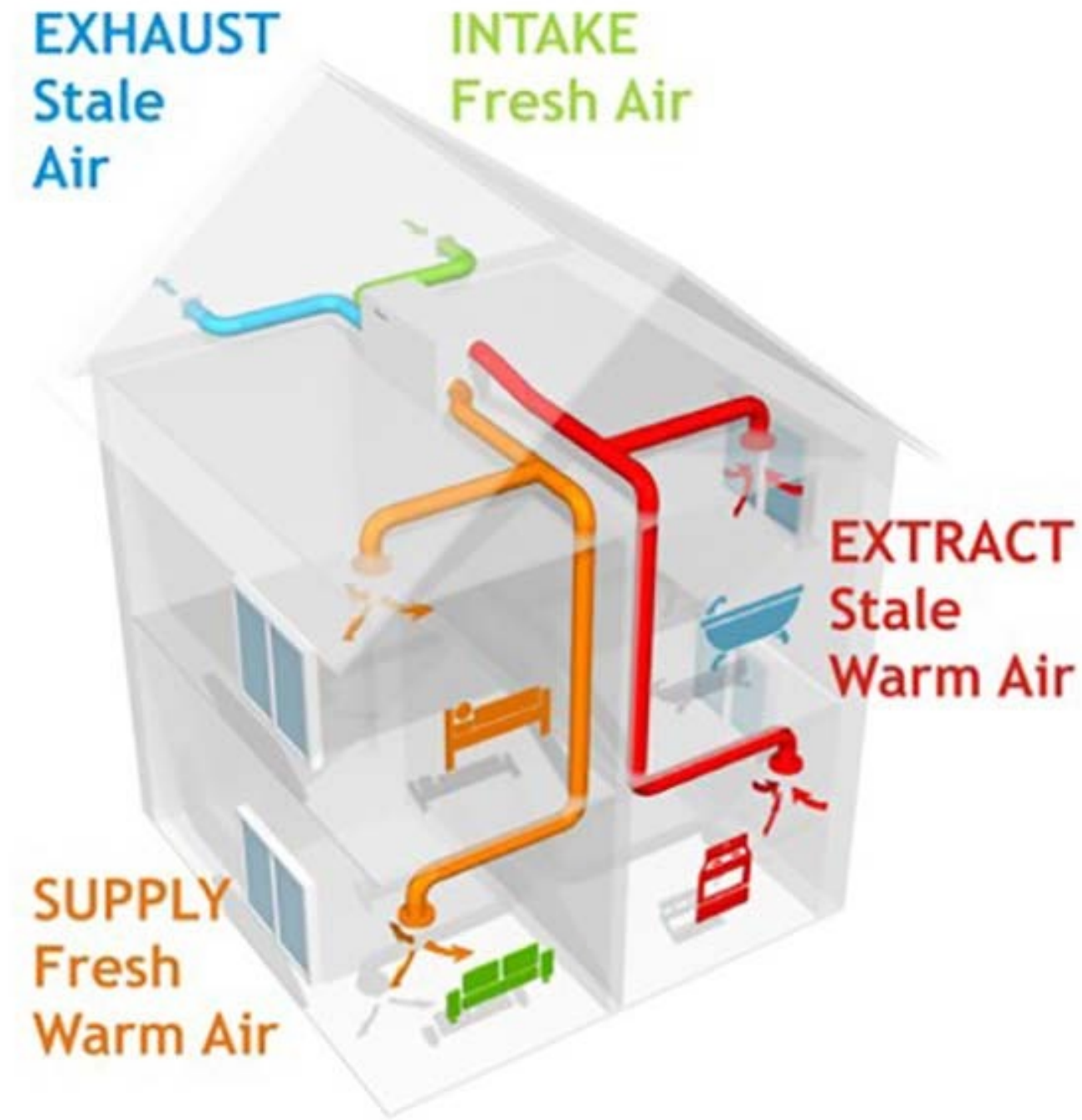
# Building Science



## How to Get Started ENERGY EFFICIENCY FIRST

1. Get an energy audit
2. Address building envelope with air sealing and insulation
3. Pursue all low cost/no cost measures, “low hanging fruit”
4. Limit heat generating plug loads
5. Use passive solar to heat and blinds or curtains to keep things cool

# Mechanical Ventilation + Indoor Air Quality





# Types of Electric Heating

# Types of Electric Heating

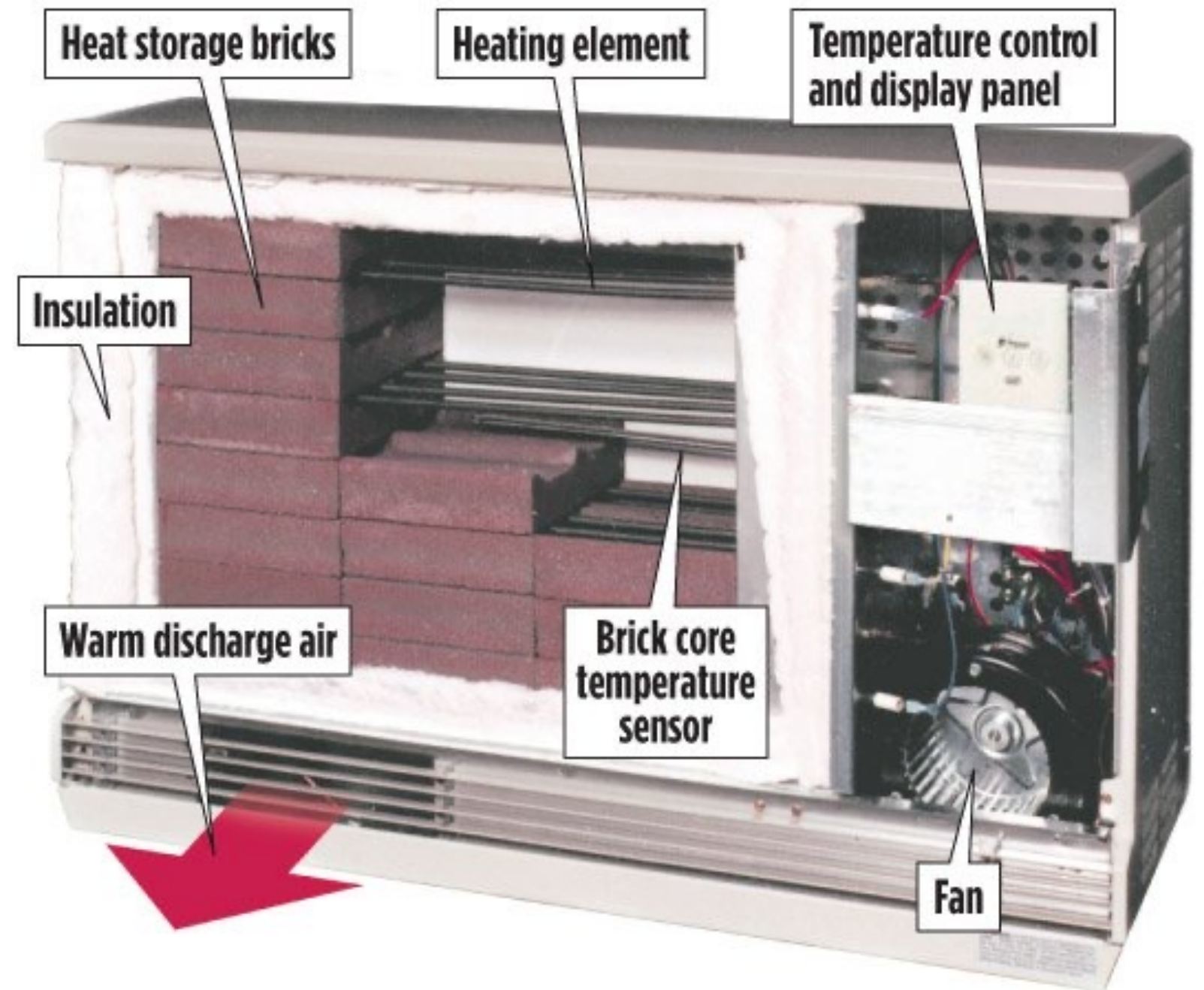
- Baseboard
- Plug in heaters
- Electric boilers + forced air furnace
- Radiant heaters
- ETS
- Heat pumps





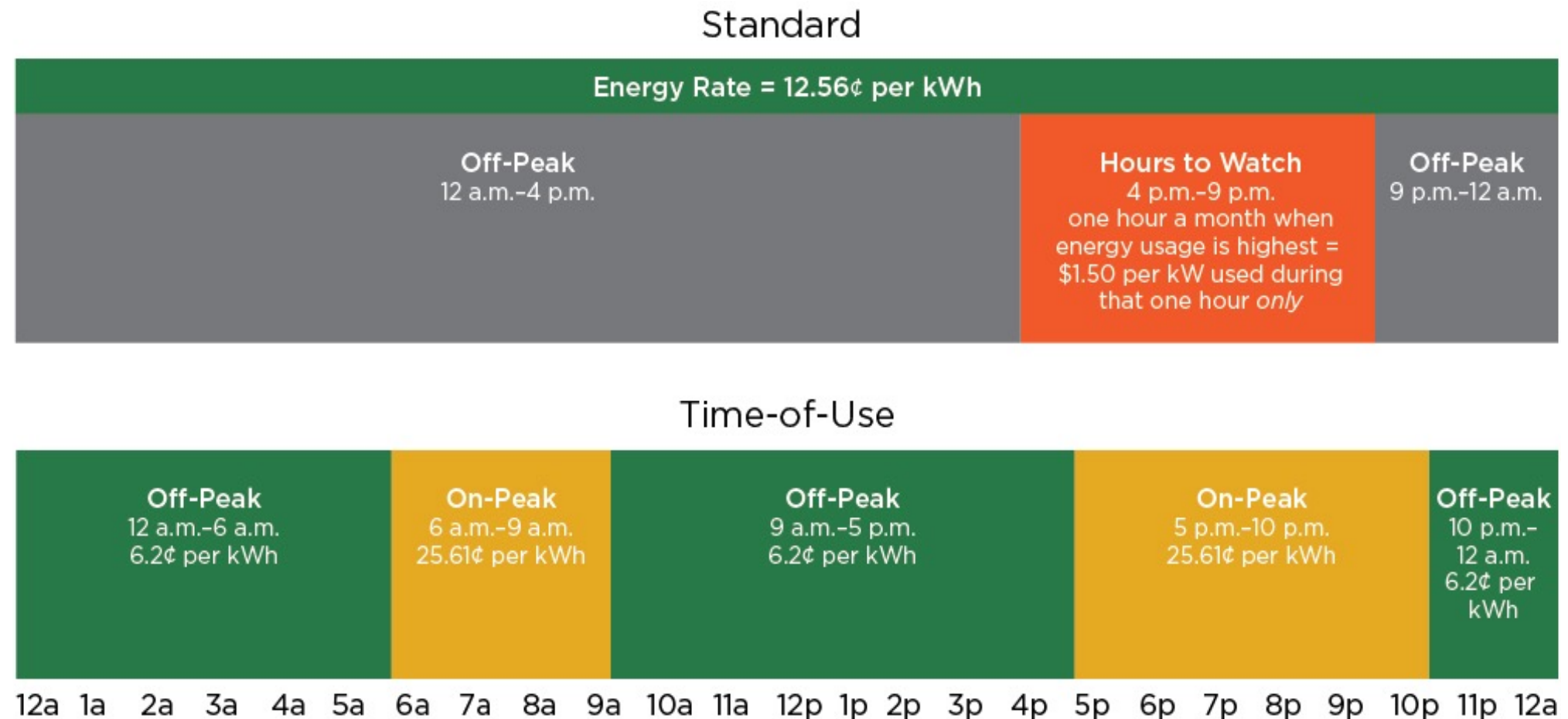
# ETS – Electrical Thermal Storage

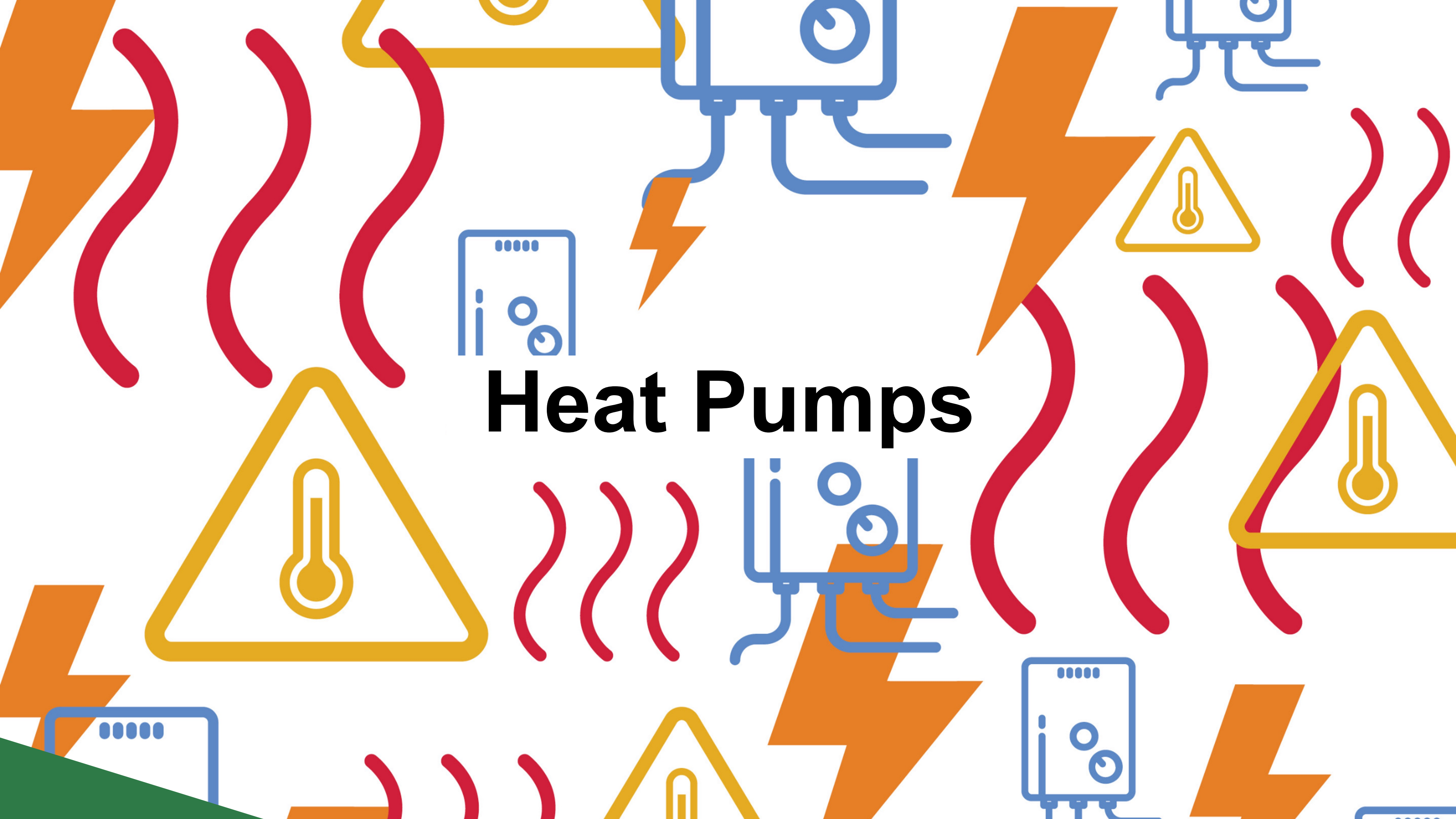
- Available in room units, central air, and hydronic in-floor
- Off-Peak power used to store heat in a thermal mass
- PLC Controller takes advantage of LPEA's Time-of-Use rate



# LPEA's Time-of-Use Rate

- Save \$ - Reduced electric bills by switching to the Time-of-Use (TOU) rate
- On and Off-Peak periods – 6am-9am & 5pm-10pm
- 4,000+ LPEA members currently on TOU





# Heat Pumps

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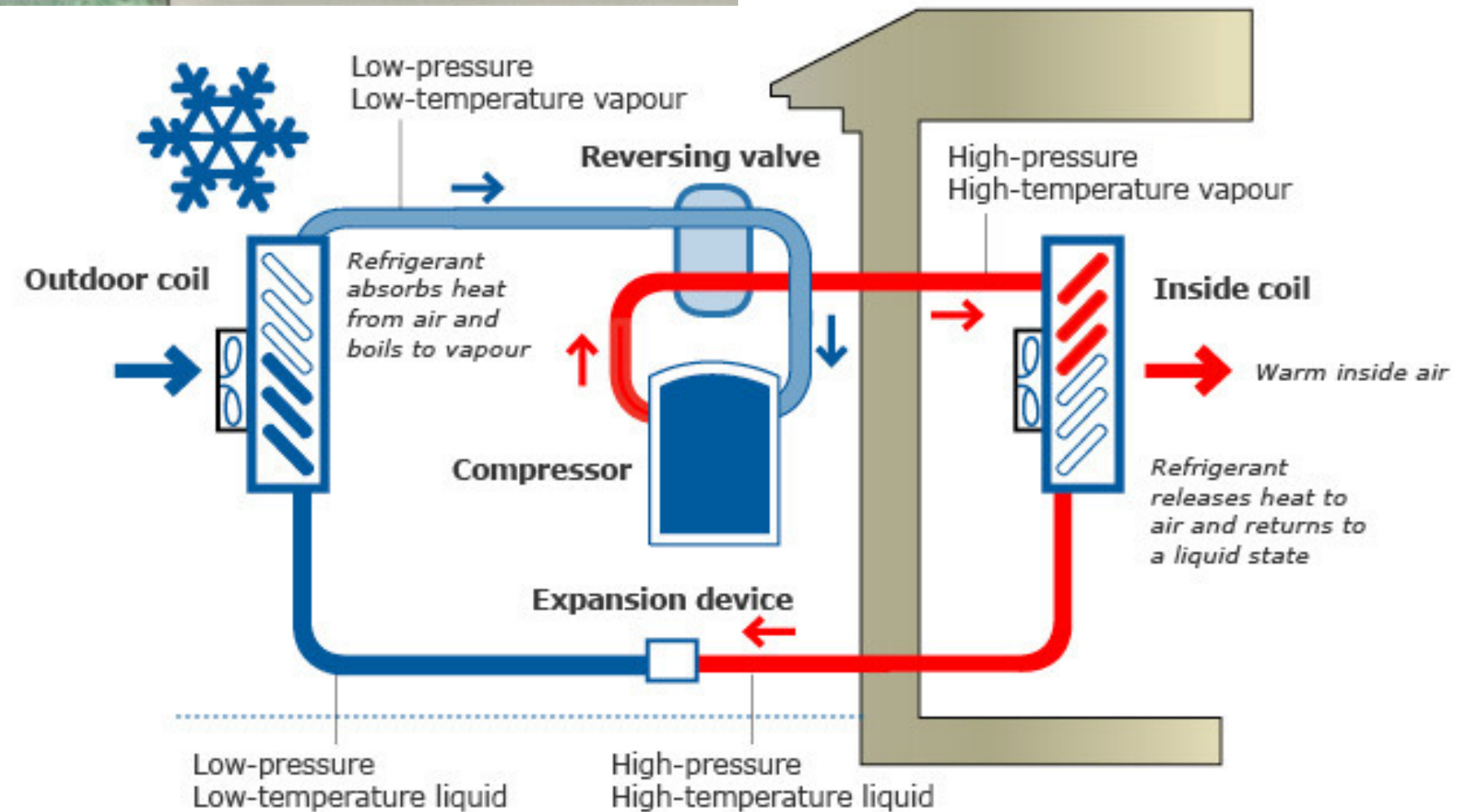
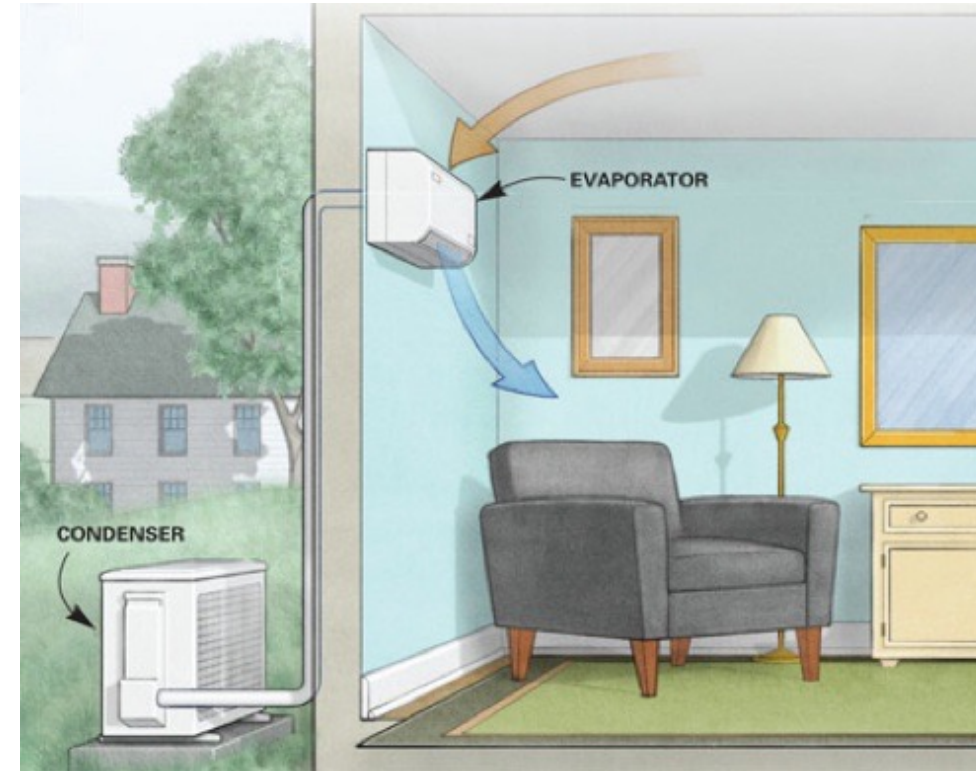
# How Heat Pumps Work

## Heating Mode:

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

## Cooling Mode:

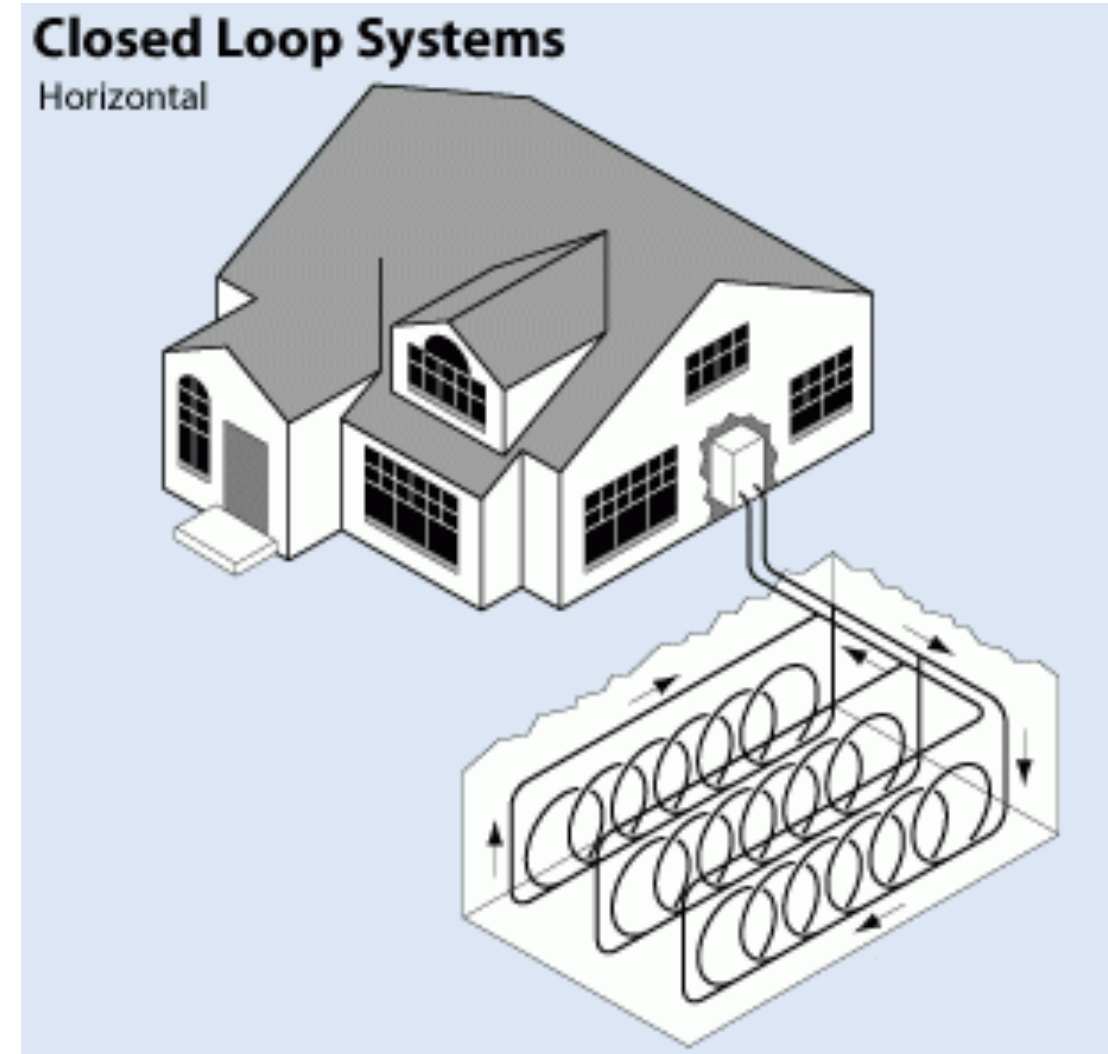
Indoor Unit > Compressor > Outdoor Unit > Expansion Valve > Indoor Unit



# Heat Pump Types – Outdoor Unit



Air Source Heat Pump



Ground Source Heat Pump

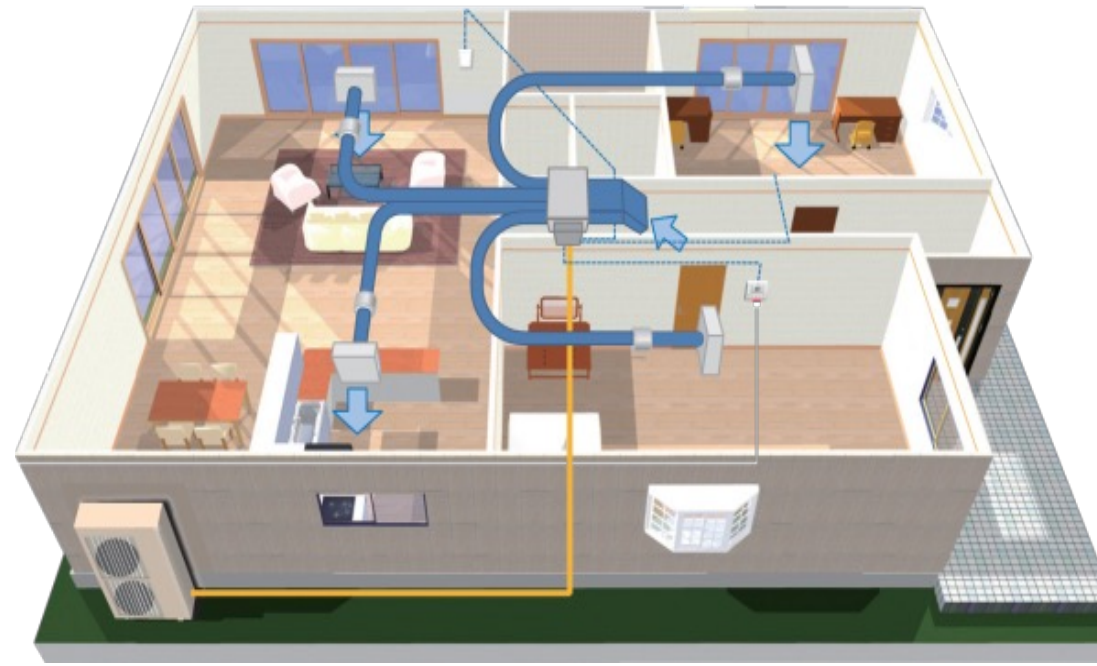
# Heat Pump Types – Indoor Unit



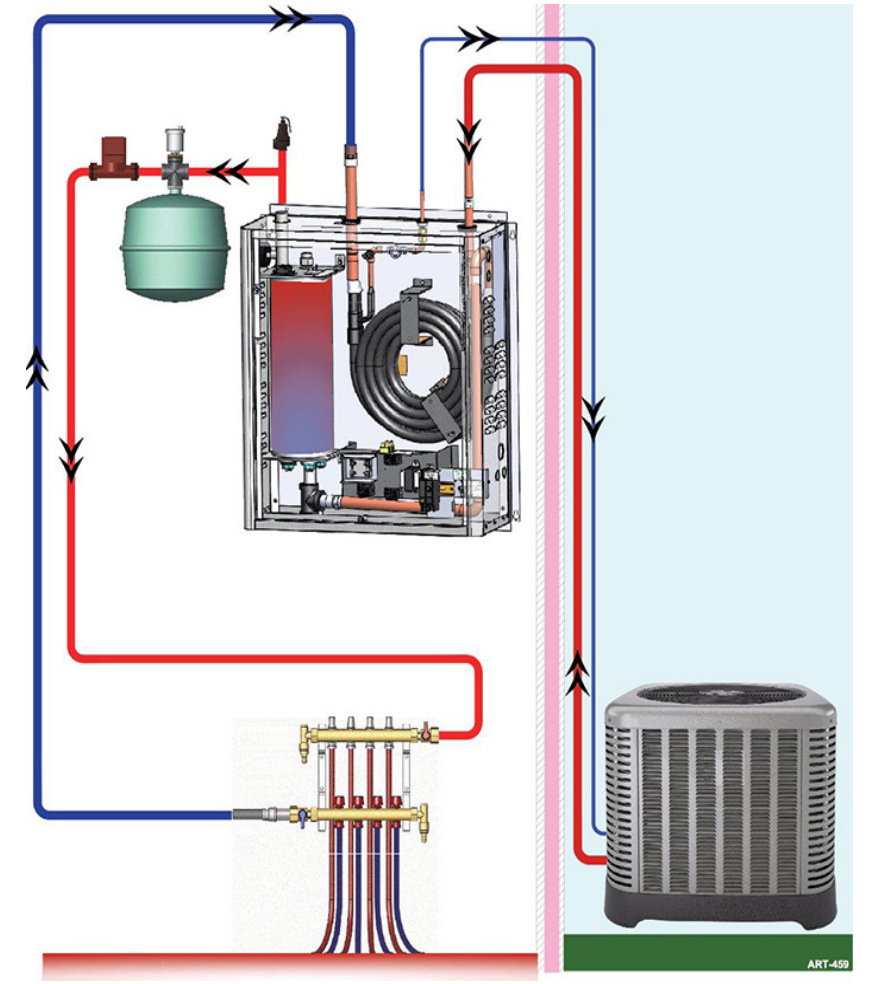
Central Air Handler



Mini-Split / Ductless



Ducted mini-split / slim duct



Hydronic / Boiler

# Mini Splits

- Also known as “ductless”
- Higher efficiencies than other heat pump applications (no duct losses)
- Most common heat pump installations
- Most versatile retrofit option





## Ducted Forced Air

- Better suited for new construction with correctly sized ductwork
- Can be retrofitted in existing homes with proper ductwork and upgrades





## Air to Water (Boilers)

- Best suited for new construction
- Can be retrofitted with in-floor radiant systems.
- Will NOT work with radiant baseboard registers.

# 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 and safety
- Zone control and comfort
- Cooling
- Smoke management

## Myths

- Not efficient in cold temperatures
- Need a backup
- Don't work at our altitude
- Only work in newer homes
- Need to be turned down at night to save energy
- Require a lot of maintenance

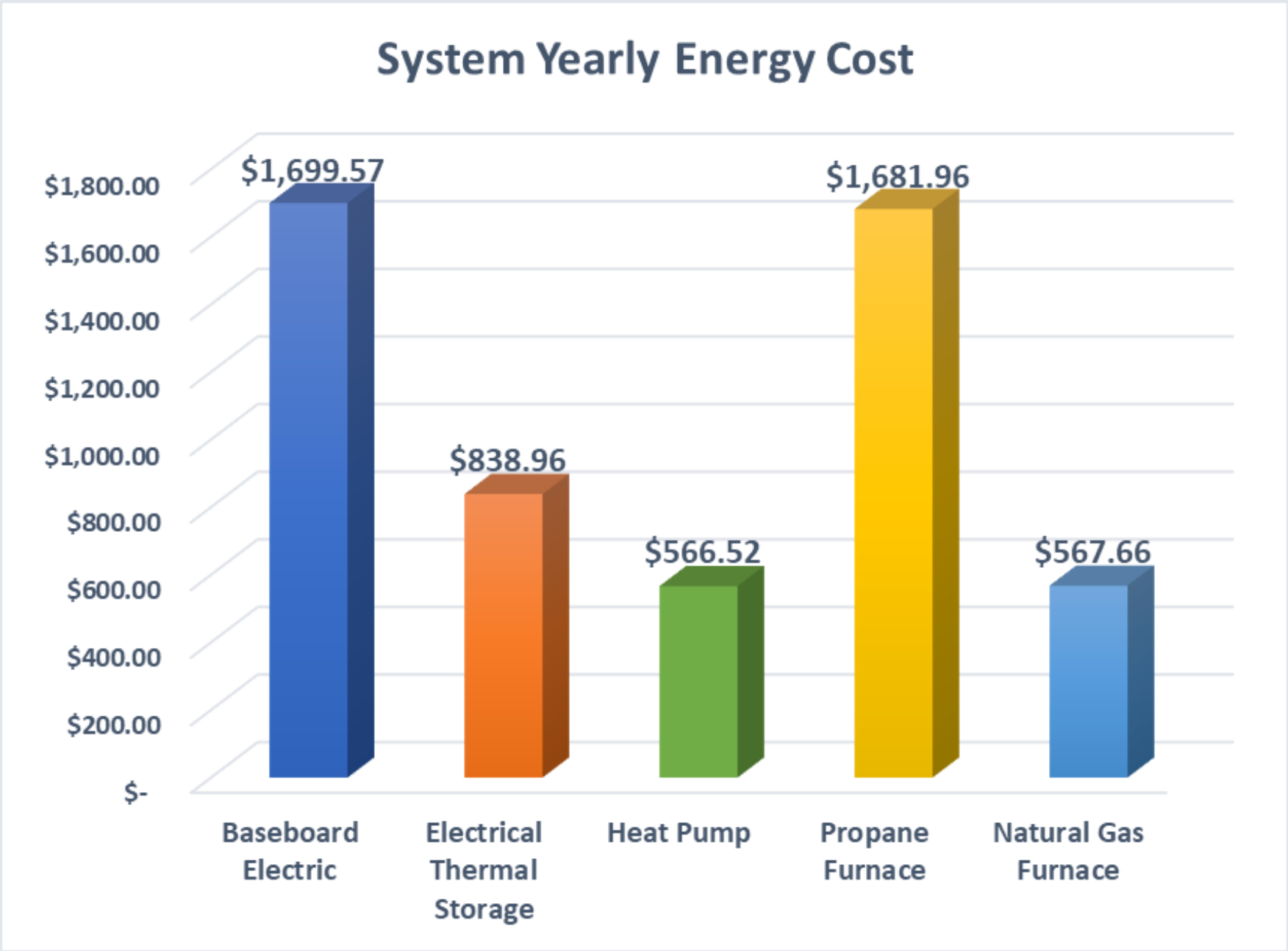




# Cost Comparison + Rebates

# Heating Options Cost Comparison

System	Cost	Rebates	Yearly Op Expense
Baseboard Electric	\$ 5,000.00		\$ 1,699.57
Electrical Thermal Storage	\$ 9,000.00	\$ 700.00	\$ 838.96
Heat Pump	\$ 13,500.00	\$ 3,500.00	\$ 566.52
Propane Furnace	\$ 11,000.00		\$ 1,681.96
Natural Gas Furnace	\$ 11,000.00		\$ 567.66



# Rebates + Incentives

## Heat Pump Rebates

TYPE	ELIGIBILITY REQUIREMENTS	REBATE AMOUNT*
Air Source HSPF ≥ 9.0 <b>OR</b> HSPF2 ≥ 7.6 SEER ≥ 15      SEER2 ≥ 14.3	Minimum ½ ton	\$1000 – 0.5-2 tons \$2500 – 2+ tons
Cold Climate Air Source* HSPF ≥ 10.0 <b>OR</b> HSPF2 ≥ 8.5 SEER ≥ 16      SEER2 ≥ 15.2	Minimum ½ ton	\$1500 – 0.5-2 tons \$3500 – 2+ tons
ETS backup		\$100/unit
New Ground Source	Minimum ¾ ton	\$550/ton
Replacement Ground Source	Minimum ¾ ton	\$300/ton
Air-to-Water	Minimum EER 19 Minimum COP 4	\$500/ton

\*Cold Climate Certified. Variable speed compressor or minimum of 3 stages of settings for fan speed. AHRI certified equipment must be used.

# Rebates + Incentives

## Permanent Electric Heat Rebates

- \$50/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 and \$75 per smart thermostat controlling electric load. Not to exceed 50% of material cost (smart thermostats included)
- \$500 rebate to residential members building new all-electric homes
- **More info on our website at [LPEA.coop/rebates](https://LPEA.coop/rebates)**

## Federal Incentives – Inflation Reduction Act

- Tax Incentives – active now
- HOMES and HEEHRA – 2024 est.
- 179D Tax Credit for businesses

Type of HP system	SEER/SEER2	HSPF/HSPF2
Ducted	16.0/15.2	9.5/8.1
Ductless	16.8/16.0	10.6/9.5

## State Tax Incentives

- 10% Tax Incentive & waives state sales/use tax
- Heat pumps, heat pump water heaters, battery storage systems

### Electrification Rebates <sup>③</sup>

ITEM	AMOUNT	TIMELINE
Heat Pump Air Conditioner/Heater	\$8,000	2024
Efficiency Rebates	\$8,000	2024
Electric Panel	\$4,000	2024
Electric Wiring	\$2,500	2024
Heat Pump Water Heater	\$1,750	2024
Weatherization	\$1,600	2024
Electric/Induction Stove	\$840	2024
Heat Pump Clothes Dryer	\$840	2024

### Tax Credits <sup>③</sup>

ITEM	AMOUNT	TIMELINE
Battery Storage Installation	30%	Available Now!
Geothermal Heating Installation	30%	Available Now!
New Electric Vehicle	\$7,500	Available Now!
Rooftop Solar Installation	30%	Available Now!
Used Electric Vehicle	\$4,000	Available Now!
Heat Pump Air Conditioner/Heater	\$2,000	Available Now!
Heat Pump Water Heater	\$2,000	Available Now!
Weatherization	\$1,200	Available Now!
Electric Vehicle Charger	\$1,000	Available Now!
Electric Panel	\$600	Available Now!





# How to Get Started

# 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 Team 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](mailto:rebates@lpea.coop) or (970) 247-5786

[LPEA.coop/rebates](http://LPEA.coop/rebates)

[LoveElectric.org](http://LoveElectric.org)

[Neep.org](http://Neep.org)





# Questions?



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# LPEEA

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# Thank you!

[www.lpea.coop](http://www.lpea.coop)