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# Air Source Heat Pumps

## High Priority Application Types

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# Agenda

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| Topics |
| --- |
| Housekeeping, Overview and Intros |
| Overview of Market Opportunities,<br>Identifying Home and Customer Needs |
| Electric Heat Opportunities |
| Propane Opportunities |
| AC Replacement Opportunities |
| Future Trainings, Contractor Input and Q&A |

# What We Hope You Take Away From Today…

1. Increased knowledge of the Ameren Illinois service territory market opportunities
2. Thought process started on identifying customer and home needs
3. Technical considerations for each major opportunity
4. Discussing building value propositions
5. Access to resources and program staff

# Ameren Illinois ASHP Support within Electrification

- Electric heat displacement
  - Electric furnaces
  - Electric baseboard
  - Space heaters
- Propane displacement
  - Rural Illinois
- AC add-on or replacement
  - ASHP economic
  - VCHP comfort and carbon emissions

# Design Decision Methods Identify Customer's Needs

- Readiness to act upon building envelope related load reduction work
- Desire to stop using fossil fuels
- Occupancy patterns (long spells away from home vs. consistently occupied)
- Do they want cooling throughout the house or just in certain rooms?
- Cost concerns
  - First cost vs. ongoing fuel and maintenance costs
- Plans for renovations or additions

# Listen to Hurts, Needs and Wants

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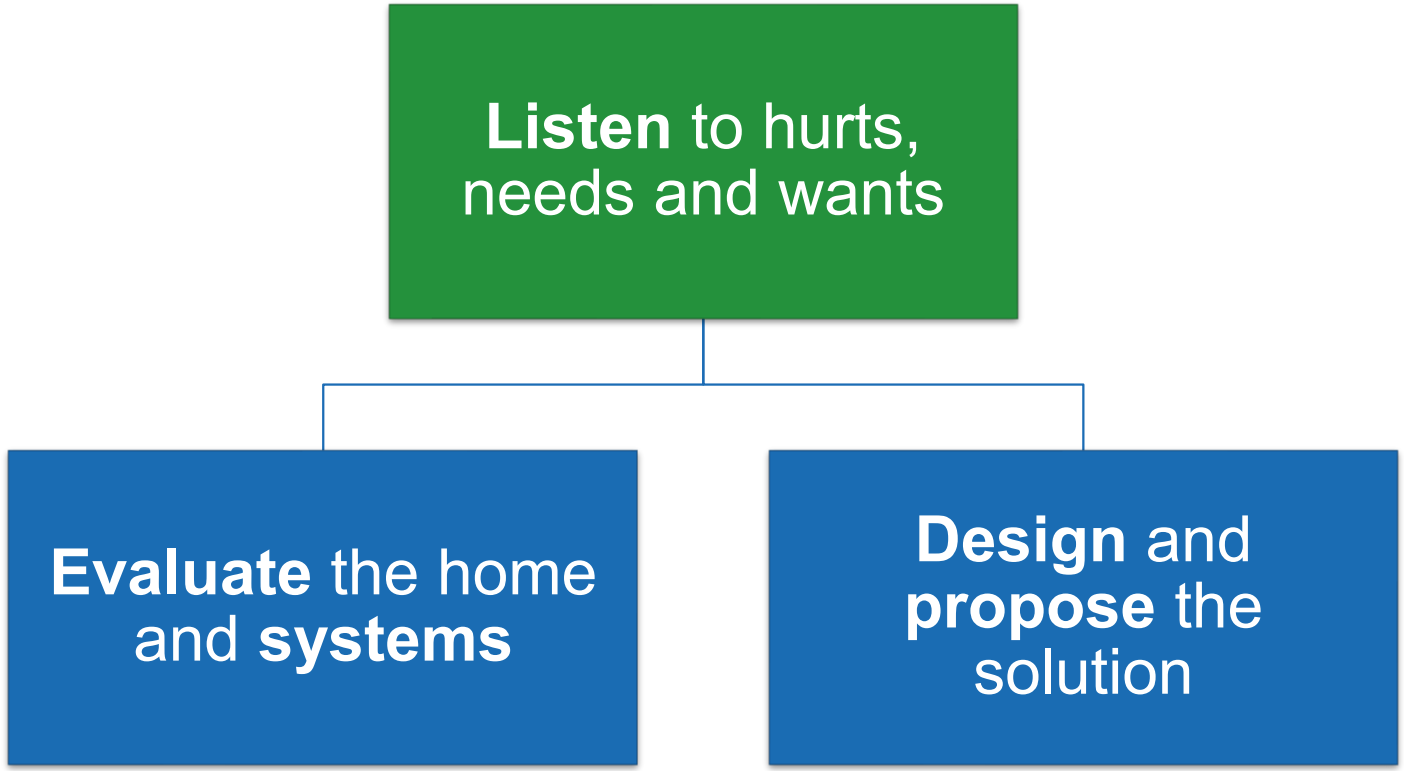
# 67%

Are unsatisfied or somewhat unsatisfied with their *current* heating system

# A Deeper Look at Hurts, Needs and Wants



# Primary Hurts, Needs and Wants

Comfort

Cost

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*“People purchase based on emotion but want to justify the purchase based on facts.”*

*Suzanne Shelton, The Shelton Group*

# Now What?

1. Identify the benefits that resonate.
2. Recognize the emotional ties.
3. Support with features and facts.

# Electric Heat Opportunities

**Mostly confined to urban areas, but can be found in rural areas**

- Electric furnaces with AC
- Electric baseboard
- Multifamily
  - Electric baseboard
  - PTAC

**Solutions**

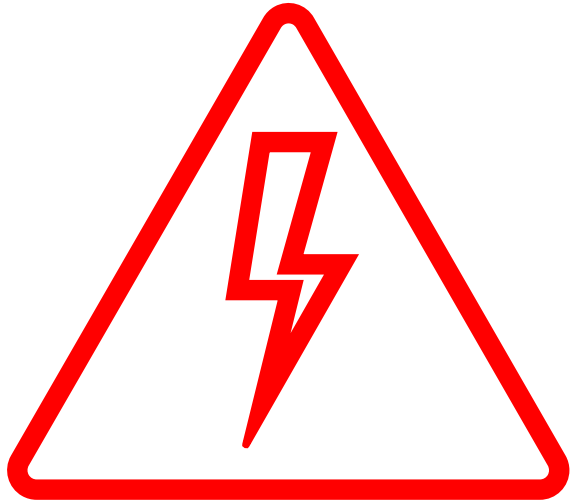
- Central Air Source Heat Pump
- Variable Capacity Centrally Ducted Heat Pumps
- Mini Split Ductless Heat Pumps
- PTHP

# Electric Heat Opportunities

## Technical Considerations

**Code Requirements**

- OD unit - 6” above average single snow fall
- A2L – special precautions with brazed joint locations
- Concealed lines need nail protection



**Location Consideration**

- Wind + Snow = Ice buildup on fan, got Wind Baffles?
  - Improves low ambient operation
- Stand or Mounting
  - Wall mounting may be noisy
- Theft protection?

**Power Quality**

- Surge protector for outdoor and indoor units if they have an inverter

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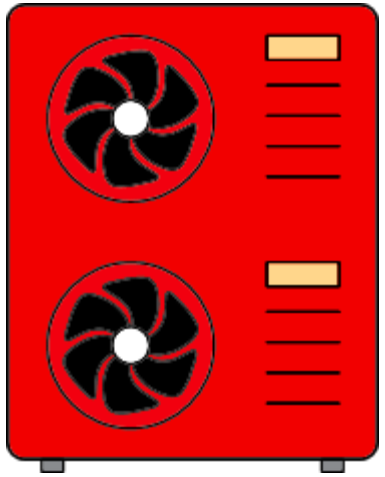
# Make the Value Proposition Clear



A successful **value proposition** should **convince a consumer** that one product or service **will add more value** than other similar offerings.

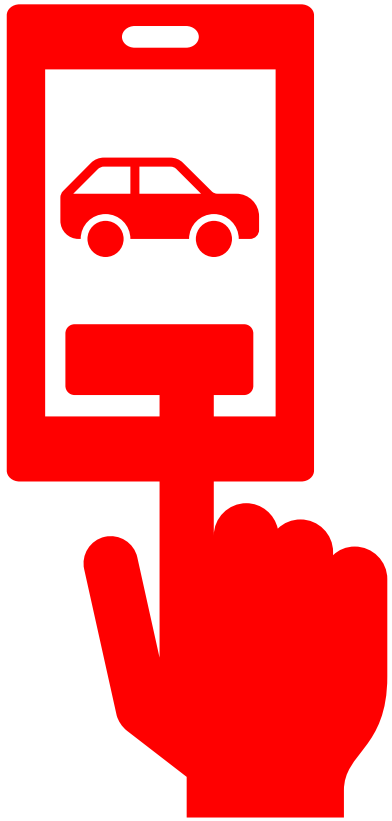
# Winning Value Proposition

**“Uber convenience in getting a ride”**

**Supporting sales pitch:**

Tap the app, get a ride!

*"Uber is the smartest way to get around. One tap and a car comes directly to you. Your driver knows exactly where to go, and payment is completely cashless.”*



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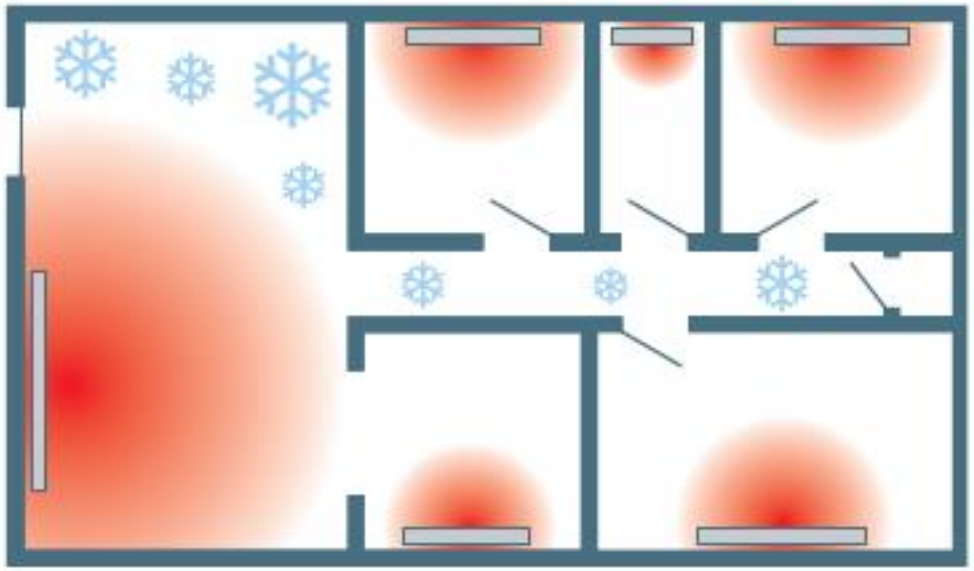
# Displacement or Replacement?

- Summer air conditioning
- Half the heating cost
- Baseboards remain
  (for back room and backup heating)

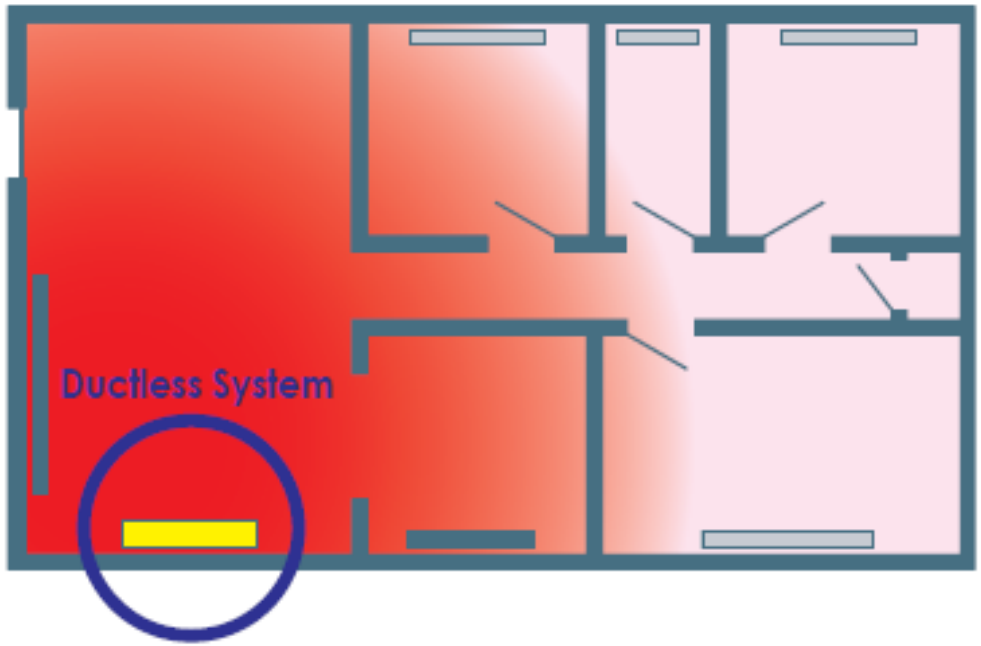
**Pre-Existing System**

Baseboard heating system



**Displacement Heating**

Single-head DHP in the main living area



# Key Benefits

## Cold Climate Ductless Heat Pump vs Baseboard

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- Cozy heat and cooling in one
- Simple and easy
  - Less disruptive install
  - No duct work
  - Easy controls
- Costs less to run
- Whisper quiet

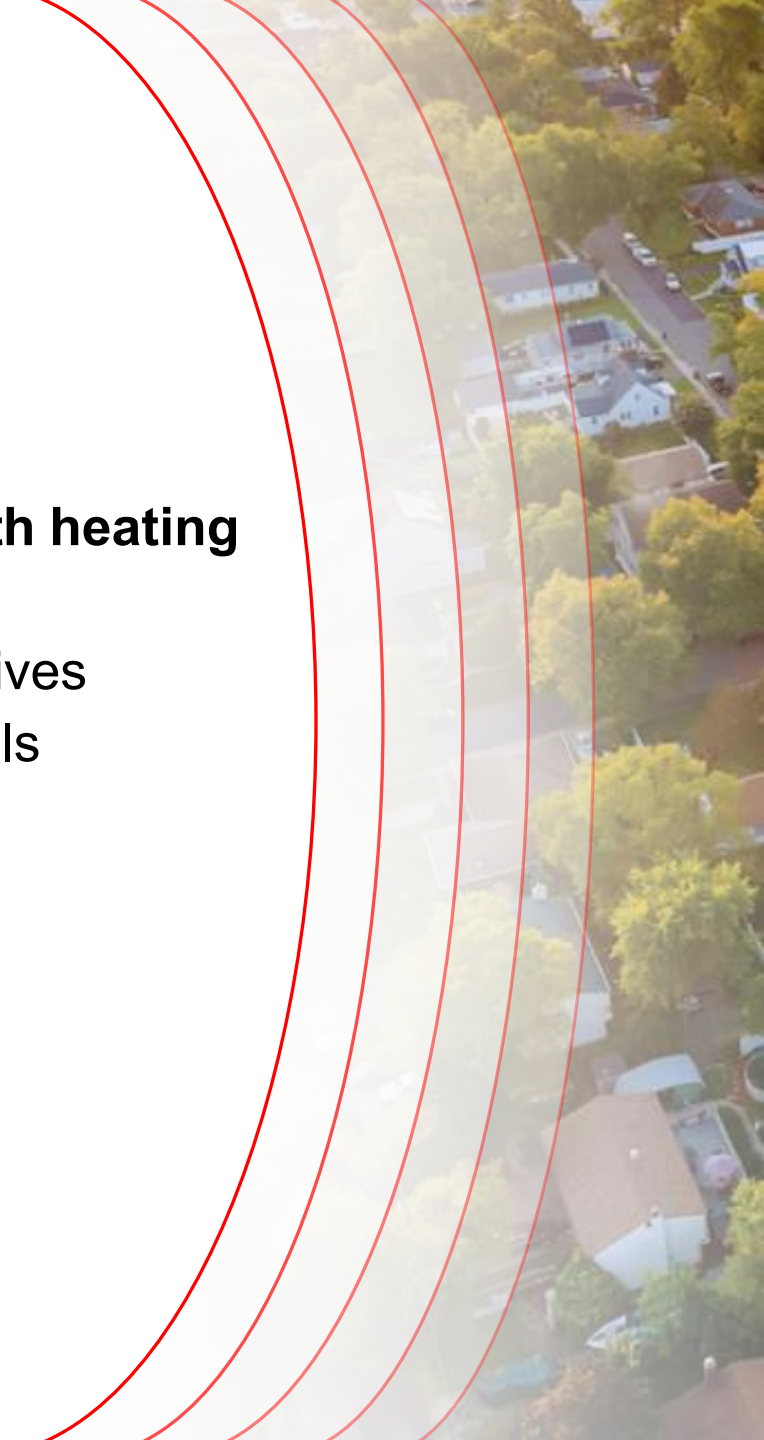
# Features to Help Rationalize

- **Provides both heating and air conditioning**

- **Advanced heat pump technology**
  - Inverter driven compressor
  - Low ambient noise
  - Works well when it is cold outside

- **Capacity varies with heating and cooling needs**
  - Variable speed drives
  - Modulating controls

- **Highest efficiency**
  - Seasonal Energy Efficiency Ratio (SEER)
  - Heating Seasonal Performance Factor (HSPF)



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# Most Impactful Value Propositions: Displacement

## More comfort

- Added cooling!
- Heats down to -13° F
- Cozy, comfortable heat[1] where you spend your time

## Less money

- Introductory cost for a heat pump[2]
- Lower energy bills
- Utility incentives

[1] Acknowledge the hurdle here, Heat Pumps produce lower temperature heat
[2] When compared to a multi-head or central heat pump

# North American Climate Zones

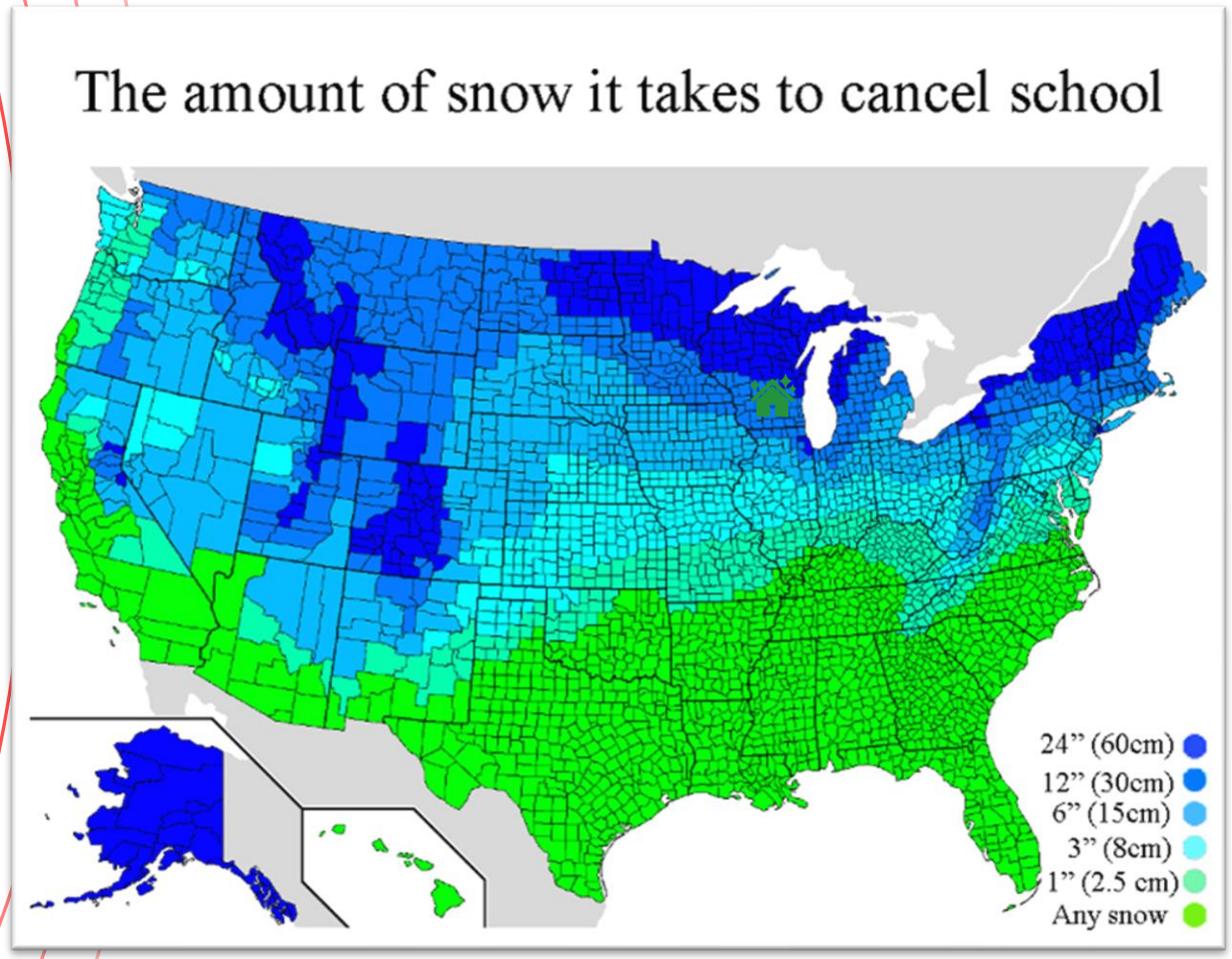


*Image courtesy Reddit*

- The home's location and climate dictate the heating and cooling loads.
- Different heat pumps are appropriate depending on the climate zone.
- Climate dictates the home's load ***and*** the heat pump's environment.
- If it takes 6 inches or more to cancel school, you are in a cold climate.

# Propane Heat Opportunities

- **Rural areas of Illinois**
  - Mostly LP furnaces with/out central AC
  - Ventless propane wall heaters
  - Wood/pellet stoves
- **Let's talk prices**
  - January 31, 2014 - **$4.50** per gallon
  - October 4, 2021 - $2.122 per gallon
  - 2026 - **unknown**

- **Solutions**
  - Mini Split Ductless Heat Pumps
  - Central Air Source Heat Pump
  - Variable Capacity Centrally Ducted Heat Pumps
  - Dual Fuel / Hybrid systems

# Propane Heat Opportunities
## Technical Considerations

- **Displacement vs replacement?**
  - When using mini splits discuss operation strategies
    - Setback of central heating system thermostat
    - What percentage of heating need are you trying to offset?
- **Ducted systems**
  - Will existing furnace/air handler be replaced?
    - Do we have a variable speed blower?
  - What size coil can the plenum and furnace accommodate?
    - Does horizontal, or slab limit coil size?
    - Does downflow application limit system options?
  - Switchover temperature
    - Controlled by thermostat
    - Controlled by customer based on comfort

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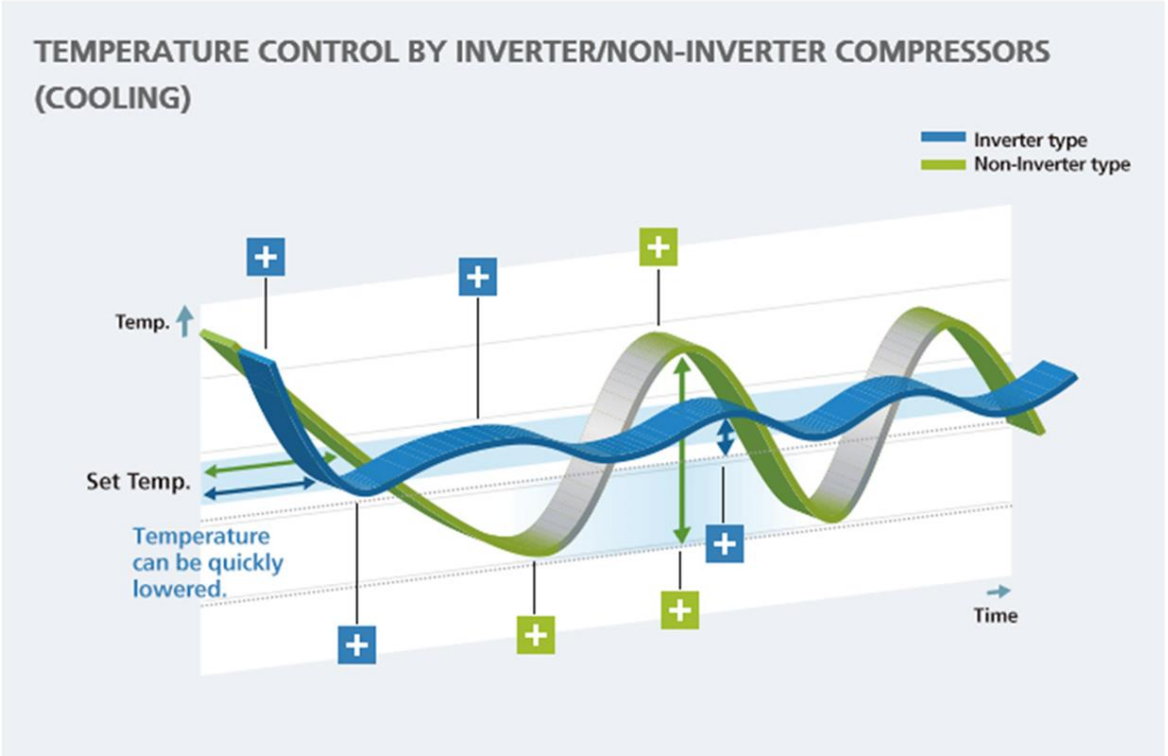
# Key Benefits

## Cold Climate Heat Pump vs. Propane

- Cozy heat and cooling in one
- More reliable fuel source
- Costs less to run
- Whisper quiet



# Emotional Ties

- Cool new technology
- Ultra comfort
- Easy new home improvement
- No more propane delivery
- Look good/smart

***And it saves money!***

***(easy to rationalize)***

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# Benefits of Propane to Electric Conversion

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## More comfort

- Even temps throughout the home
- Heats down to -13° F
- Cozy, comfortable heat[1]

## Less money

- Lots of bells and whistles to choose from
- Lower energy bills
- Utility incentives

[1] Acknowledge the hurdle here, Heat Pumps produce lower temperature heat

# Facts to Back It Up

**Up to 55%** annual savings on electric bills
**Up to 30%** annual savings for propane heated homes

**Immediate savings** through incentives

Multiple **price options**

**Cooling!** High efficiency, high quality

Ductless means **simple install**

Central ducted means **reliable fuel source**

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# AC Replacement Opportunities

- Incremental cost for entry level ASHP $500
  - Better comfort in spring and fall
- Incremental cost for VCHP $2,500
  - More flexibility and fuel choice if prices rise
  - Load matching in all seasons
  - Less costly if improvements are financed


# AC Replacement Opportunities
## Technical Considerations

- Same ductwork considerations as propane
  - Decision is between ASHP and VCHP
  - Is poor comfort between rooms a problem?
- COP for ASHP declines when temperatures decline and home heating load increases.
- There is a point when ASHPs are not cost effective for customers to run. Based only on fuel cost and excluding capital costs.
- When ASHP is operated at maximum capacity the result negatively impacts the customer financially.
  - $230 per year on average in additional heating costs.
- But what if prices continue to rise?
  - Reflective of current rates


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# AC Replacement Opportunities
## Value Propositions

### Is this a gas furnace with an AC?

- Go back to the beginning of **understanding the needs of the house and homeowners**
- Is the gas furnace oversized or do they notice in swing seasons that it's **hard to keep a consistent temperature?**
- You're likely already evaluating the ductwork to ensure it's properly sized to handle cooling
- **Has this house been weatherized** or is it less than 10 years old?
    - **Will this house be weatherized** if not yet?


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# AC Replacement Opportunities
## Value Propositions

- **IF** the home is electric resistance, then we already have the value propositions
- **IF** the home is propane heated, then we already have the value propositions
- **IF** the home is gas, what are our value propositions?

# AC Replacement Opportunities with Gas

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## Let the heat pump do the heating in the fall and spring

What were our value props with Propane? Do you feel natural gas is similar?

## Future proof the home against future changes

| | | |
|---|---|---|
| Policies around carbon | Code changes | Continually improving heat pump technology |

## Differentiation

You differentiate your company when you sell what's new!

# Set Homeowner Expectations

# Overall Q&A from live sessions

- Based on your customers and service area which opportunity are you most likely to run with?
  - ↪Electric heat displacement/replacement
  - ↪Propane displacement/replacement
  - ↪ASHP with natural gas supplemental heat

# Incentives and Specifications

## Ways to Save for 2026

| Residential Equipment | Type / Rating | 2026 Rebate |
|---|---|---|
| Ducted Air Source Heat Pump | Less than 65 kBtu<br>Must be 15.2 SEER2 (16 SEER) and 8.1 HSPF2 (9.5 HSPF) or greater as confirmed by AHRI. | **$900** |
| Ductless Mini-Split Heat Pump | Must be 16 SEER2 (16 SEER) and 8.55 HSPF2 (9.5 HSPF) or greater as confirmed by AHRI. | **$630** |

# Q&A

Thank you for attending today's training!

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# Thank you!