



Energy Efficiency

January 18, 2024

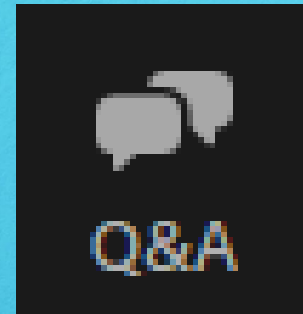
Air Source Heat Pumps

High Priority Application Types

ComEd Training Team – Dan Wildenhaus

Housekeeping

- Recordings of this webinar will be available within the ComEd Training Workspace
- All attendees should be admitted with microphone **muted**
- Ask questions in the Q&A
 - Questions can be submitted anonymously
 - When a question is answered, all attendees will be able to see the question, who asked it (if provided), and the answer
 - Depending on time, some questions might not be answered. In that case we will do our best to follow up with everyone after the webinar ends



Agenda

Team

- **Dan Wildenhaus**, industry liaison, technical expert for training development and delivery

Topics
Housekeeping, overview, intros
Overview of ComEd market opportunities Identifying home needs and customer needs
Electric heat opportunities
Propane opportunities
AC replacement opportunities
Future trainings, contractor input, Q&A

Dan Wildenhaus

- Technical Consultant and Industry Liaison
- ComEd training team
- Working with EESPs and distributors
- Former contractor
- 28 years' experience



What We Hope You Take Away From Today...

1. Increased knowledge of the ComEd 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

Overview of ComEd Market Opportunities

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



Design Decision Methods Identify Customer's Needs



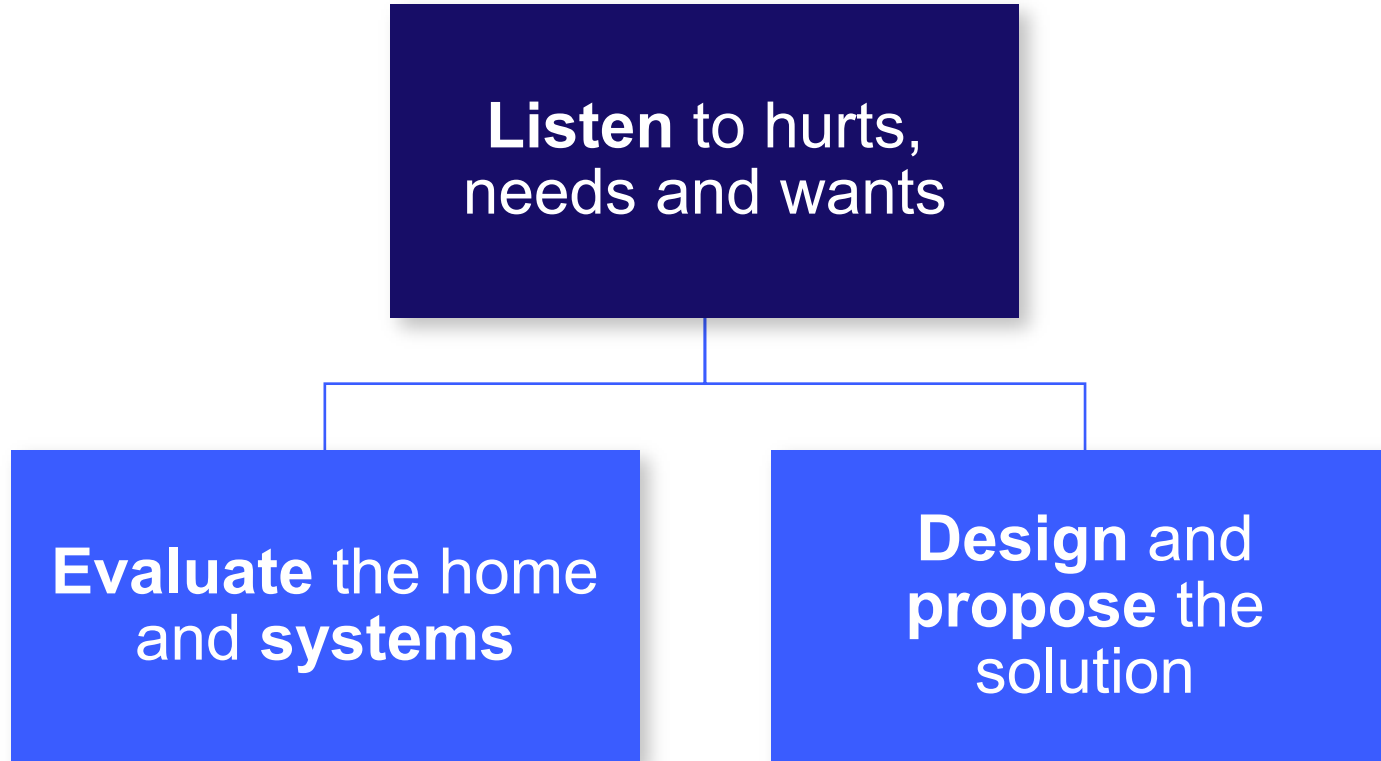
- Interest/willingness for doing load reduction measures first
- Desire to stop using fossil fuels
- Occupancy patterns (long spells away from home vs. consistently occupied)
- Do they want cooling throughout the house or just in certain rooms?
- Cost concerns
 - First cost vs. ongoing fuel and maintenance costs
- Plans for renovations or additions

Listen to Hurts, Needs and Wants

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

“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

Market Size and Characteristics

Mostly confined to the City of Chicago

- 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



Count of Households



Electric Heat Opportunities

Technical Considerations

Code Requirements Chicago

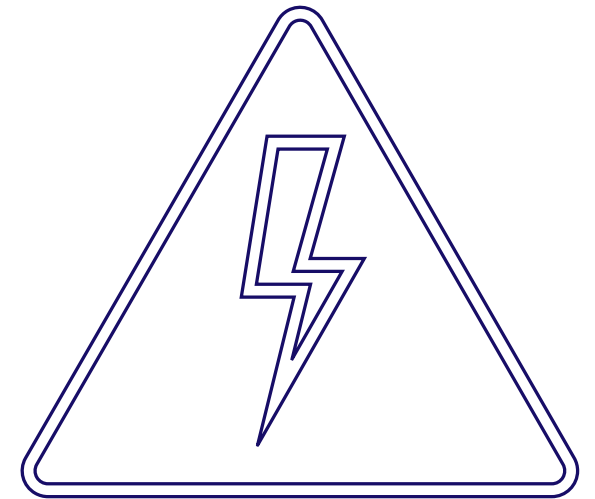
- Brazed connections only
 - No Flare or Press Fittings
 - Include adequate time to evacuate and recharge after brazing
- Disconnects at every indoor unit
- High voltage wiring in conduit

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 prone to voltage spikes



Make the Value Proposition Clear

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



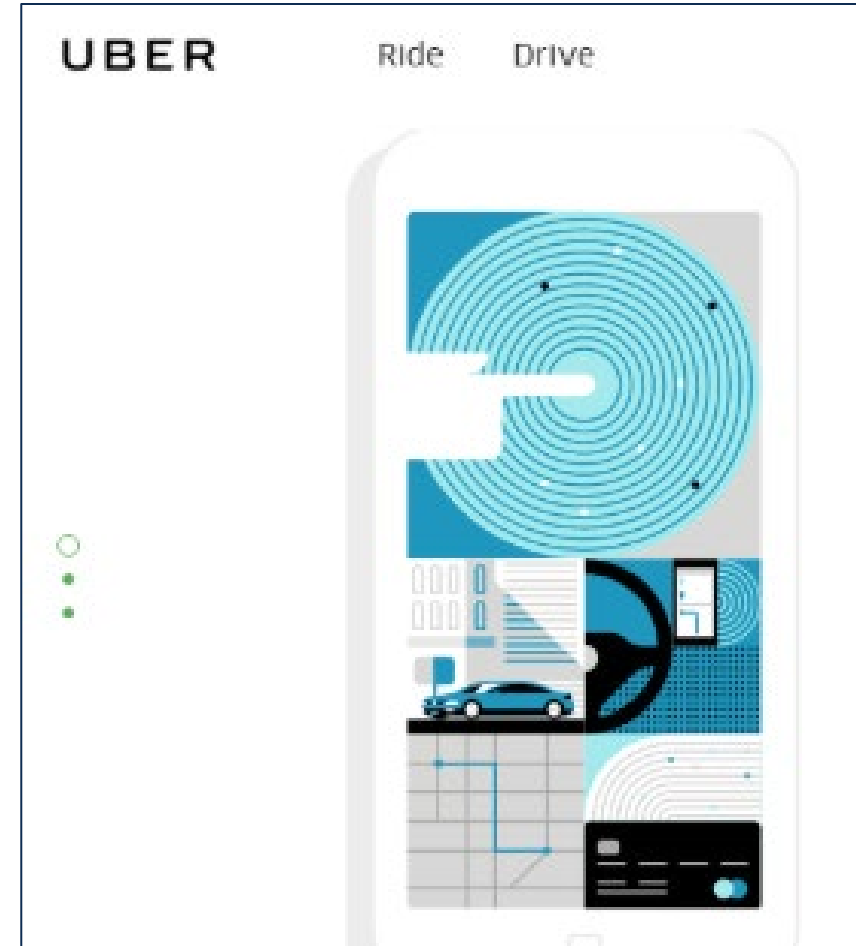
Winning Value Proposition

“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.”

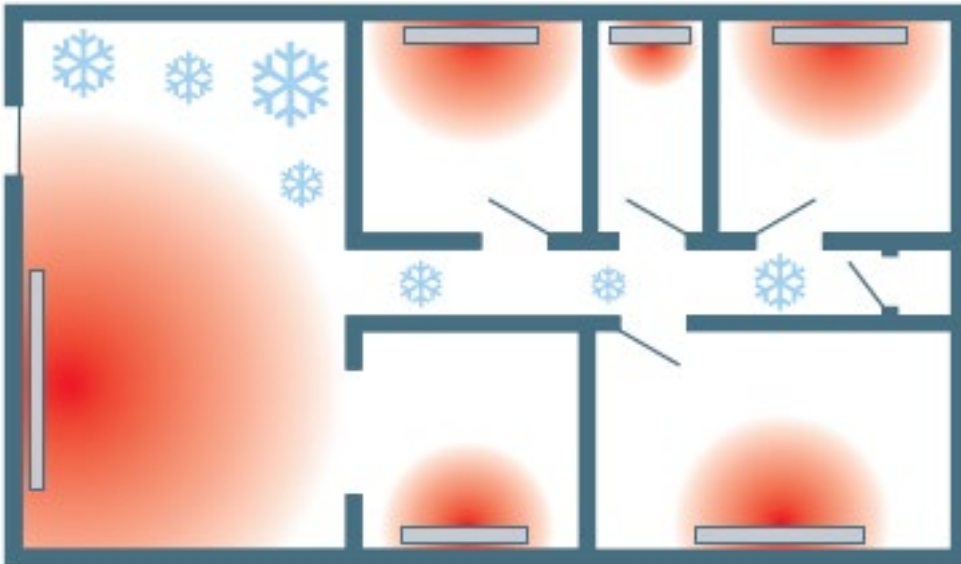


Displacement or Replacement?

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

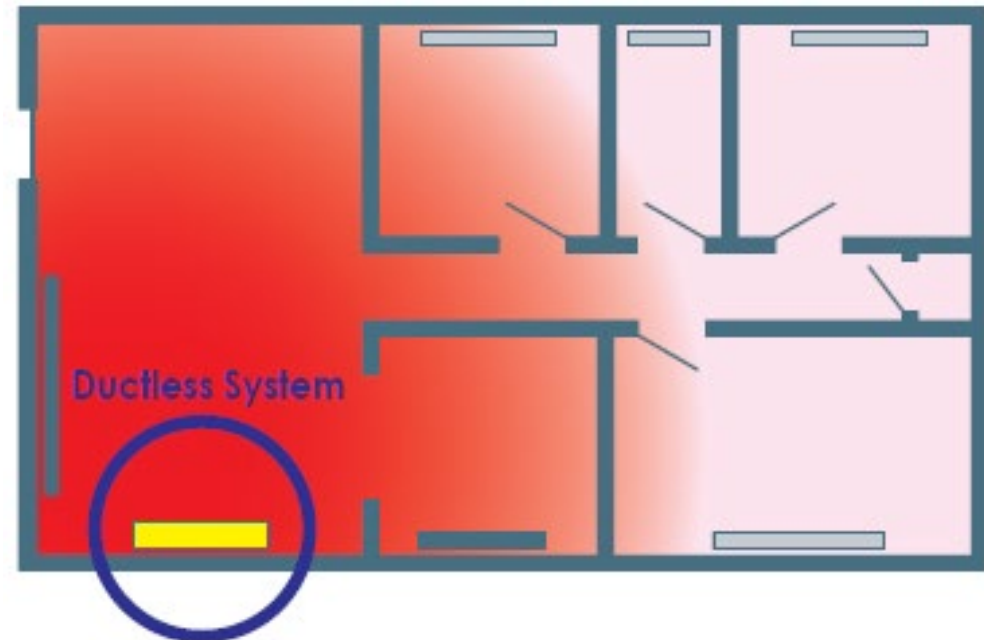
Pre-Existing System

Baseboard heating system



Displacement Heating

Single-head DHP in the main living area



Key Benefits

Cold Climate Ductless Heat Pump vs Baseboard



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
- Highest efficiency
 - Heating Seasonal Performance Factor (HSPF)
 - Seasonal Energy Efficiency Ratio (SEER)
- Capacity varies with heating and cooling needs
 - Variable speed drives
 - Modulating controls

Most Resonant Value Propositions – Displacement



More comfort

- Added cooling!
- Heats down to -13° F
- Cozy, comfortable heat¹ where you spend your time



Less money

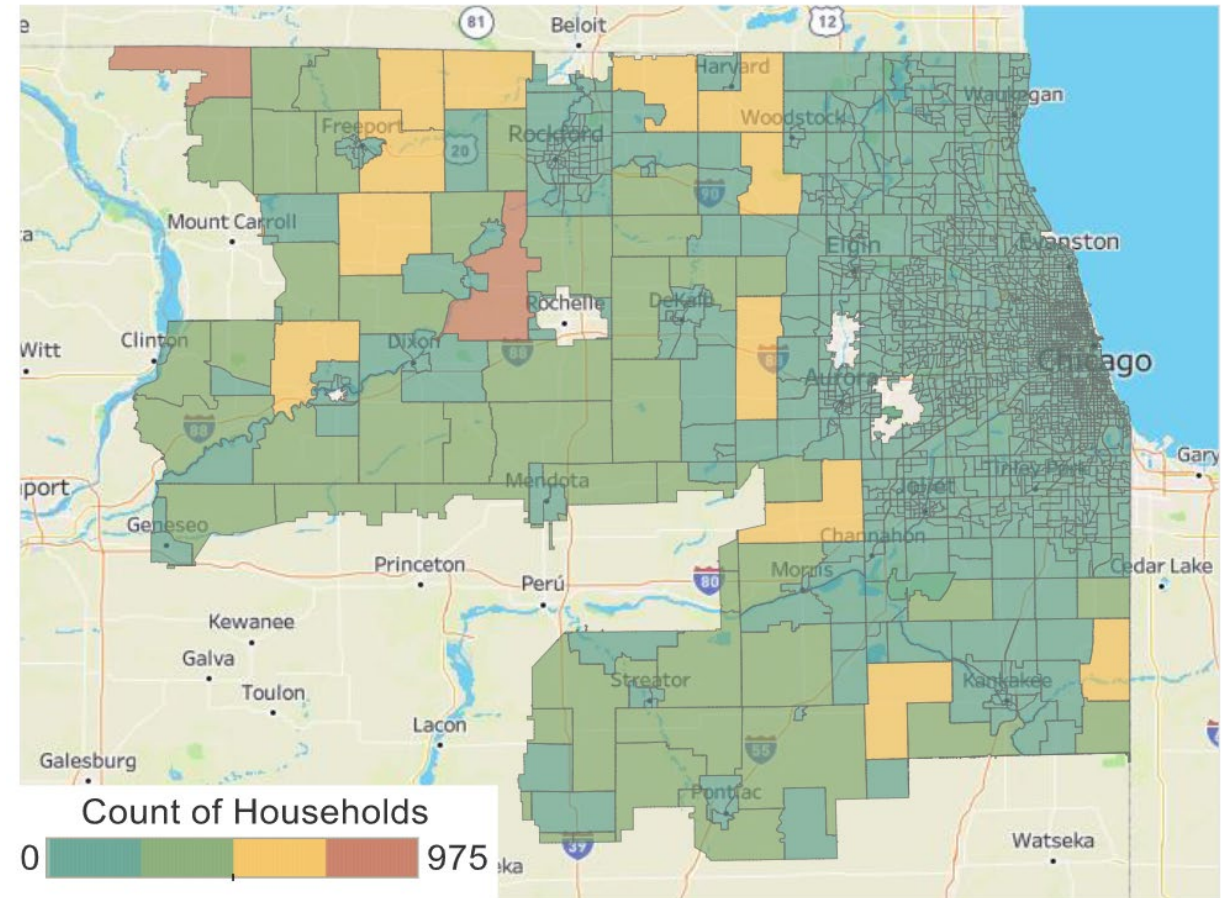
- Introductory cost for a heat pump²
- Lower energy bills
- Utility incentives

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

2 When compared to a multi-head or central heat pump

Propane Heat Opportunities Market Size and Characteristics

- **Rural areas NW and S of Chicago**
 - 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
 - January 2024 - **unknown**
- **Solutions**
 - Mini Split Ductless Heat Pumps
 - Central Air Source Heat Pump
 - Variable Capacity Centrally Ducted Heat Pumps



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



Key Benefits

Cold Climate Heat Pump vs. Propane



Cozy heat and cooling in one



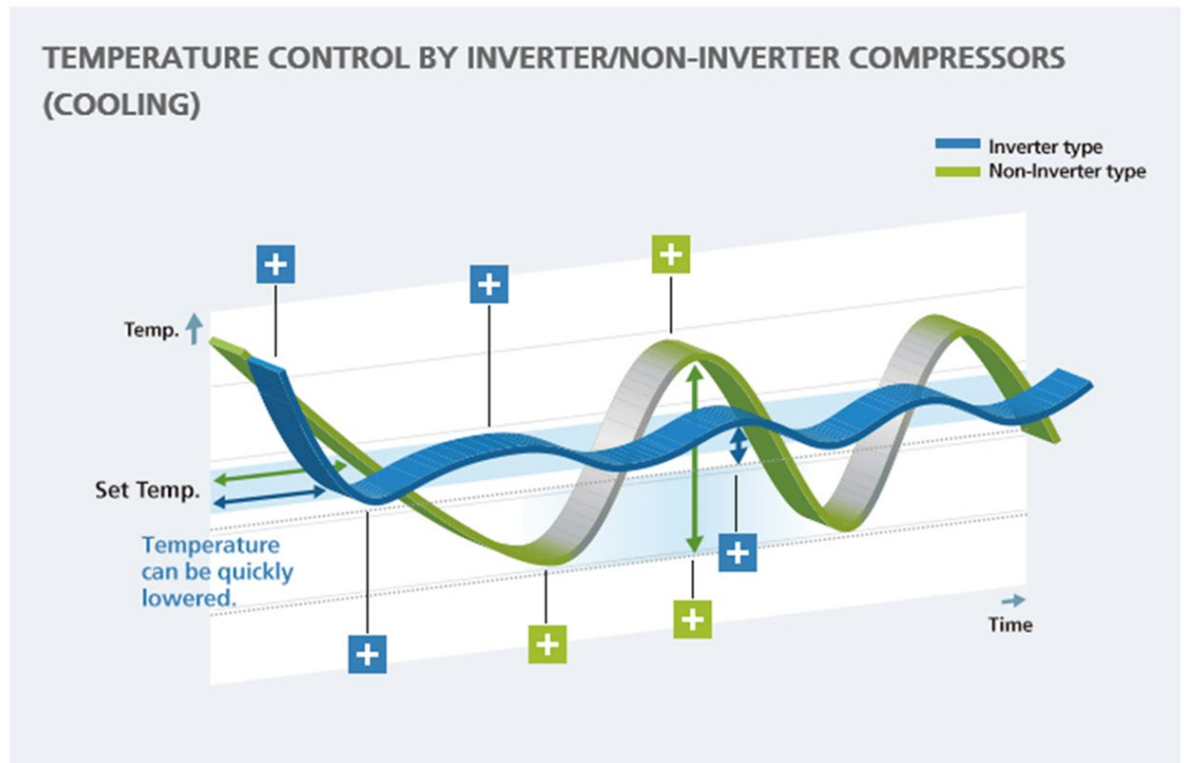
More reliable fuel source



Costs less to run



Whisper quiet



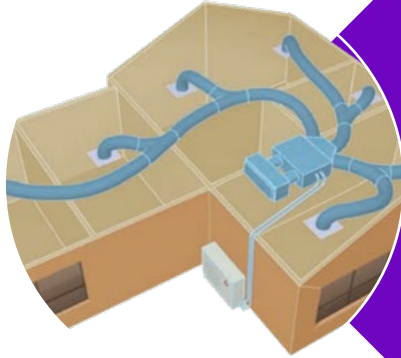
Emotional Ties

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



***And it saves money!
(easy to rationalize)***

Most Resonant Value Propositions - Propane



More comfort

- Even temps throughout the home
- Heats down to -13° F
- Cozy, comfortable heat¹



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**

AC Replacement Opportunities

Market Size and Characteristics

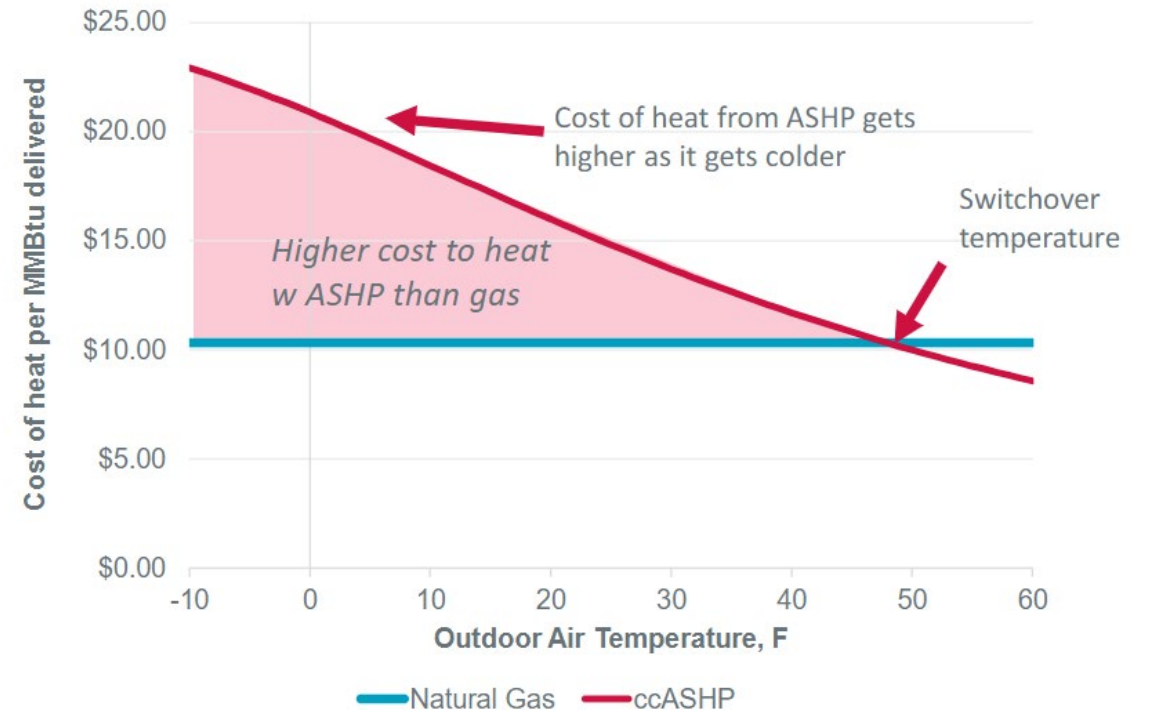
- 1.5 million potential customers
- Incremental cost for entry level ASHP \$500
 - Better comfort in spring and fall
- Incremental cost for VCHP \$2,500
 - More flexibility and fuel choice if prices rise
 - Load matching in all seasons
 - Less costly if improvements are financed



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



Key assumptions:
\$0.774/therm
\$0.106/kWh
80% efficient gas furnace

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?



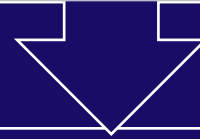
AC Replacement Opportunities

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?

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?

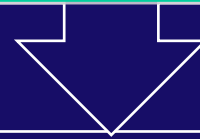


Future proof the home against future changes

Policies around carbon

Code changes

Continually improving heat pump technology



Differentiation

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



AC Replacement Opportunities with Gas

Set Homeowner Expectations



Incentives and Specifications – Ways to Save for 2024

Residential Equipment	Type / Rating	2024 Rebate
Air source heat pump (Tier 1)	≥ 15.2 SEER2, ≥ 8.1 HSPF2 , ≥ 9.4 EER2	\$1,200
Air source heat pump (Tier 2)	≥ 17 SEER2, ≥ 8.5 HSPF2, ≥ 9.4 EER2	\$1,400
Ductless mini-split heat pump	≥ 17 SEER2 and ≥ 10.0 HSPF2, ≥ 9.4 EER2	\$1,000

Available Financing Options

- On bill financing available through Illinois Energy Efficiency Loan Program
 - Unsecured loans for homeowners, payments made on their utility bills
 - Financing from \$500 to \$20,000, for the full installation cost
 - Easy and quick online application process
 - Contractors are paid in full at project completion
- Eligible improvements:
 - Air source heat pumps (16 SEER or greater)
 - Ductless mini-split (17 SEER or greater)
 - Geothermal heat pumps
 - Central air conditioning (15 SEER or greater)
- All ComEd service providers are eligible. Contact our team to get set up: 877-923-2665
- Learn more:
 - <https://ilenergyloan.com/>
 - <https://www.energyfinancesolutions.com/forhomeowners-illinois-loan-program>

Overall Q and 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

Take the Knowledge Check

- [Knowledge Check](#)
 - You can find it in the chat
 - We'll send it out via a follow up email from registration@slipstreaminc.org
- Complete it by **EOD Wednesday January 24** to check this course off your required trainings

Coming Up!

Be sure to join us at our upcoming webinars!

- **January 25 at 7:45 AM** – Designing ASHPs with Sizing and Selection in Mind
- **February 8 at 7:45 AM** – Heat Pump Control Strategies and Best Practices
- **February 15 at 7:45 AM** – Replacing Air Conditioners with ASHPs

Register online if you haven't yet: slipstreaminc.org/ComEd-ASHP



Energy Efficiency

Thank you

<https://www.comed.com/ways-to-save/for-your-home/rebates-discounts/heating-cooling-discounts>

https://azure-na-assets.contentstack.com/v3/assets/blt3ebb3fed6084be2a/bltbf1b16f07e4436dd/ComEd_Home_Heating_and_Cooling_Offering_Overview.pdf

https://goelectric.comed.com/?utm_source=vanityurl&utm_medium=website&utm_campaign=goelectric&utm_content=may23

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