

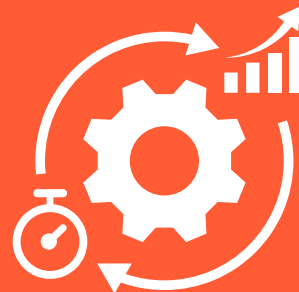


## Why Us?



### WE ARE PROBLEM SOLVERS

We provide quality solutions to drive our partners' success.



### WE INCREASE CONTRACTOR EFFICIENCY

We offer unique services to support our partners' needs.



### WE TEACH THE INDUSTRY

We lead in-person and virtual trainings to enhance technical & business expertise.

# BASE SOLUTIONS

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**Regulatory SEER-ies**  
*November 2023*



# Agenda

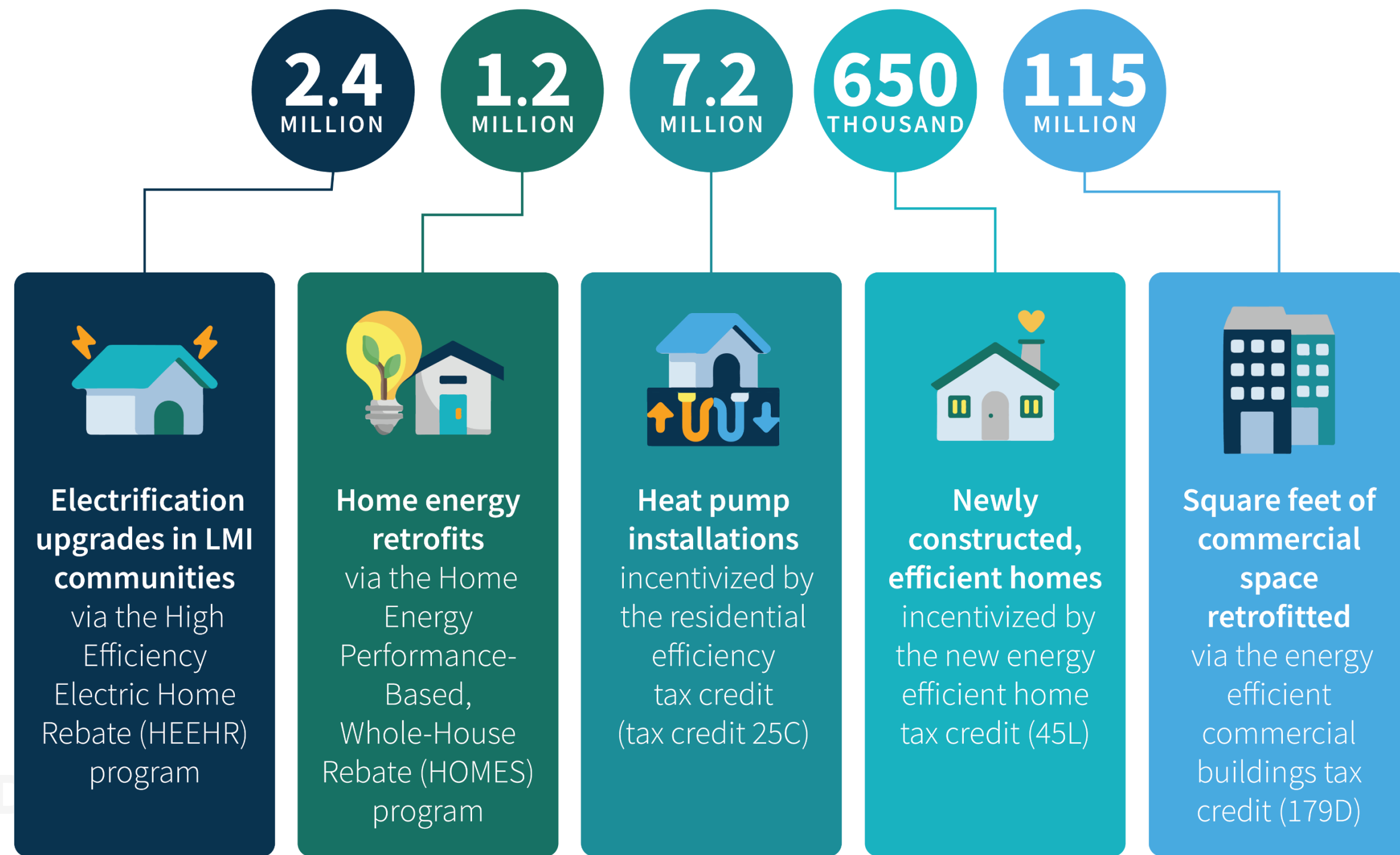
- 1 Regulatory Programs
- 2 Inflation Reduction Act updates
- 3 Developments with the AIM Act and A2L Refrigerants



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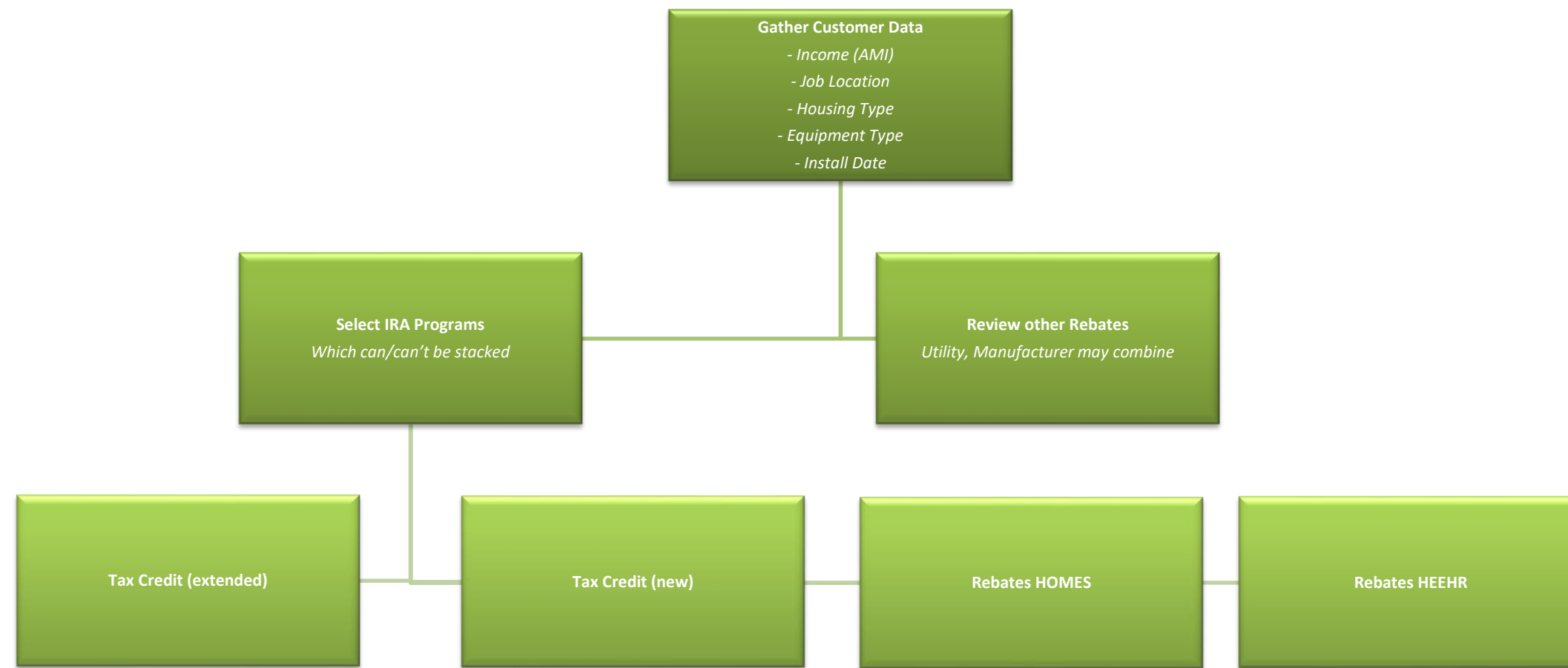
# IRA could transform the buildings sector:



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# Regulatory Update

## Know Your Programs



## Select Qualified Equipment

- Requires CEE
- Requires ENERGY STAR
- State Energy Office required
- Local utility specifications
- AC, HP, Furnace, Geo



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# Regulatory Update: IRA

## Example of Combining Programs

Outdoor	Indoor	Furnace	ComEd Rebate	25C Credit	Consumer Rebate	Spiff	Consumer Savings
HMH72B341	XAFC36DBCN1	YP9C080C16MP13	\$1,400	\$2,600	\$450	\$70	<b>\$4,450</b>

- Doesn't include the HEEHR
  - Use either that or 25C



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# Regulatory Update: IRA

## State & Territory Home Rebate Allocations

Alaska	\$75 M	Indiana	\$182 M	New Jersey	\$183 M
Alabama	\$146 M	Kansas	\$106 M	New Mexico	\$88 M
<del>Arkansas</del>	<del>\$105 M</del>	Kentucky	\$134 M	New York	\$318 M
American Samoa	\$50 M	Louisiana	\$213 M	Ohio	\$249 M
Arizona	\$153 M	Massachusetts	\$146 M	Oklahoma	\$129 M
California	\$582 M	Maryland	\$137 M	Oregon	\$114 M
Colorado	\$140 M	Maine	\$72 M	Pennsylvania	\$259 M
Connecticut	\$99 M	Michigan	\$211 M	Puerto Rico	\$85 M
District of Columbia	\$59 M	Minnesota	\$148 M	Rhode Island	\$64 M
Delaware	\$66 M	Missouri	\$151 M	South Carolina	\$137 M
<del>Florida</del>	<del>\$346 M</del>	Northern Marianas	\$50 M	<del>South Dakota</del>	<del>\$69 M</del>
Georgia	\$219 M	Mississippi	\$105 M	Tennessee	\$167 M
Guam	\$51 M	Montana	\$71 M	Texas	\$690 M
Hawaii	\$68 M	North Carolina	\$209 M	Utah	\$101 M
<del>Iowa</del>	<del>\$121 M</del>	North Dakota	\$74 M	Virginia	\$189 M
Idaho	\$81 M	Nebraska	\$91 M	U.S. Virgin Islands	\$51 M
Illinois	\$264 M	New Hampshire	\$70 M	Vermont	\$59 M

### Key Factors:

- Thirty states submitted applications
- States won't received funding all at once – in waves
- States declining to accept IRA rebate funds – Florida formally vetoed
- Each state energy office to administer
  - State does income validation



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# Regulatory Update: IRA

## Residential Programs (HEEHR) & HOMES



### High Efficiency Electric Home Rebate (HEEHR)

- HVAC Energy Star 5/6.1
  - Both SEER & SEER2
- Electric HPs up to \$8,000
  - AMI Income Limits
    - 100% < 80% AMI
    - 50% for 80-150% AMI
    - 0% > 150% AMI
- Max limit = \$14,000/unit
- Point-of-Sale Rebates



### Home Owners Managing Energy Savings (HOMES)

- HVAC Energy Star 5/6.1
- A certificate of savings and retrofits must be provided by an approved entity (maybe Pearl, Energy Star)
- Savings = 20-35% is \$2,000/50% of project cost
- Savings > 35% is \$4,000/50% of project cost
  - If AMI < 80%, open to all
- Includes windows, doors, HVAC, insulation, etc.
- Multi-family work in scope

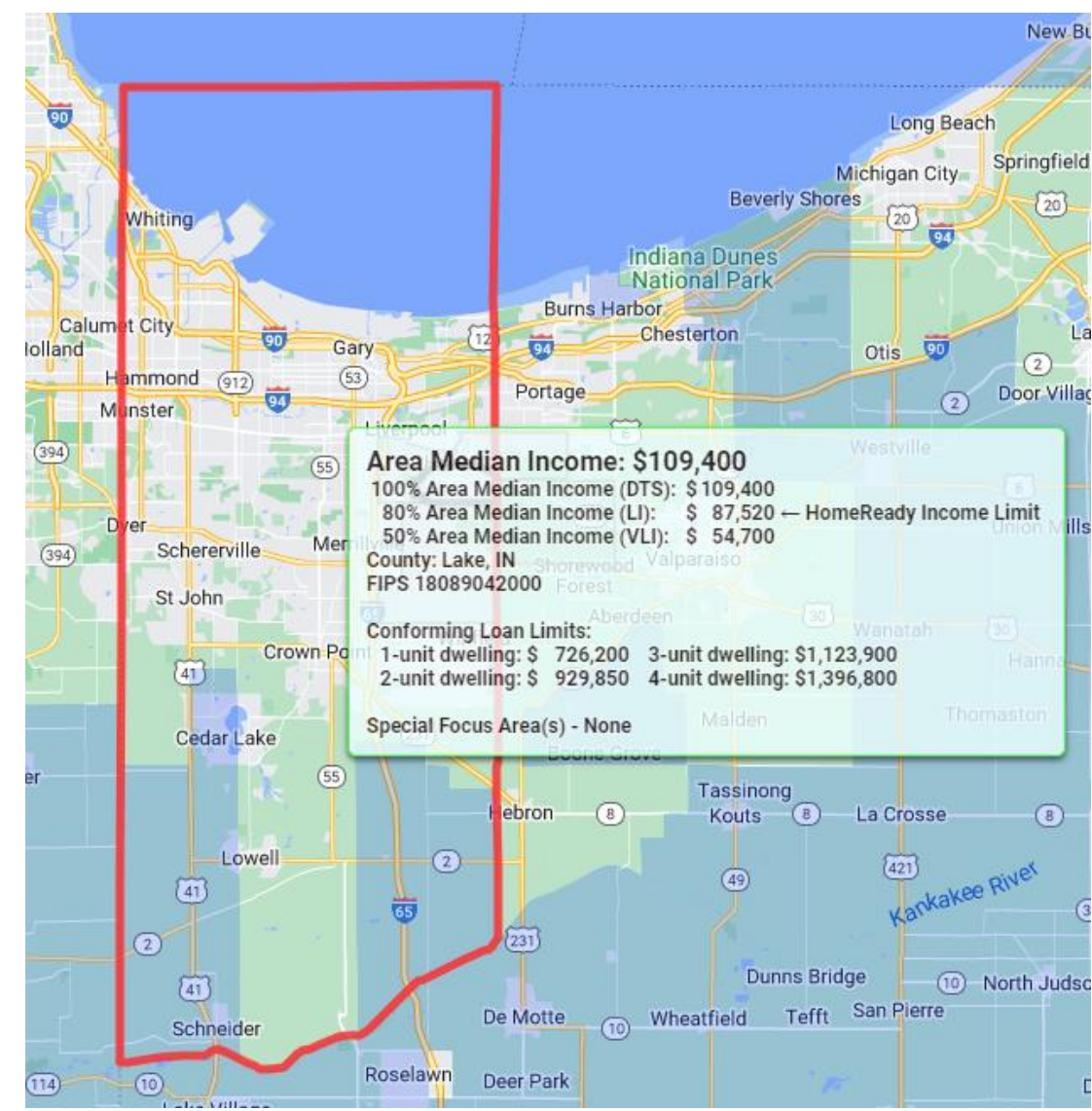
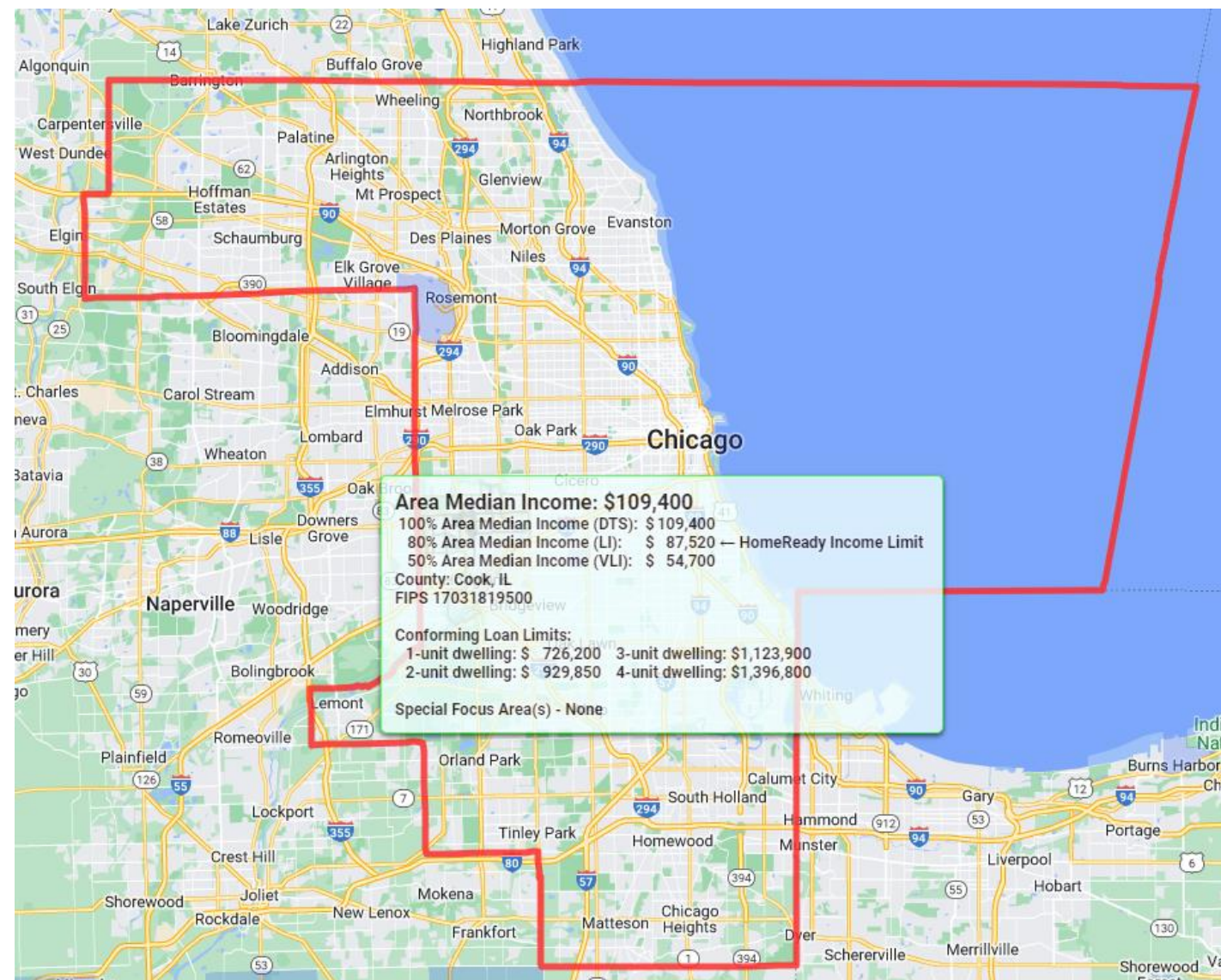


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# Regulatory Update: IRA

## AMI for BASE territory area

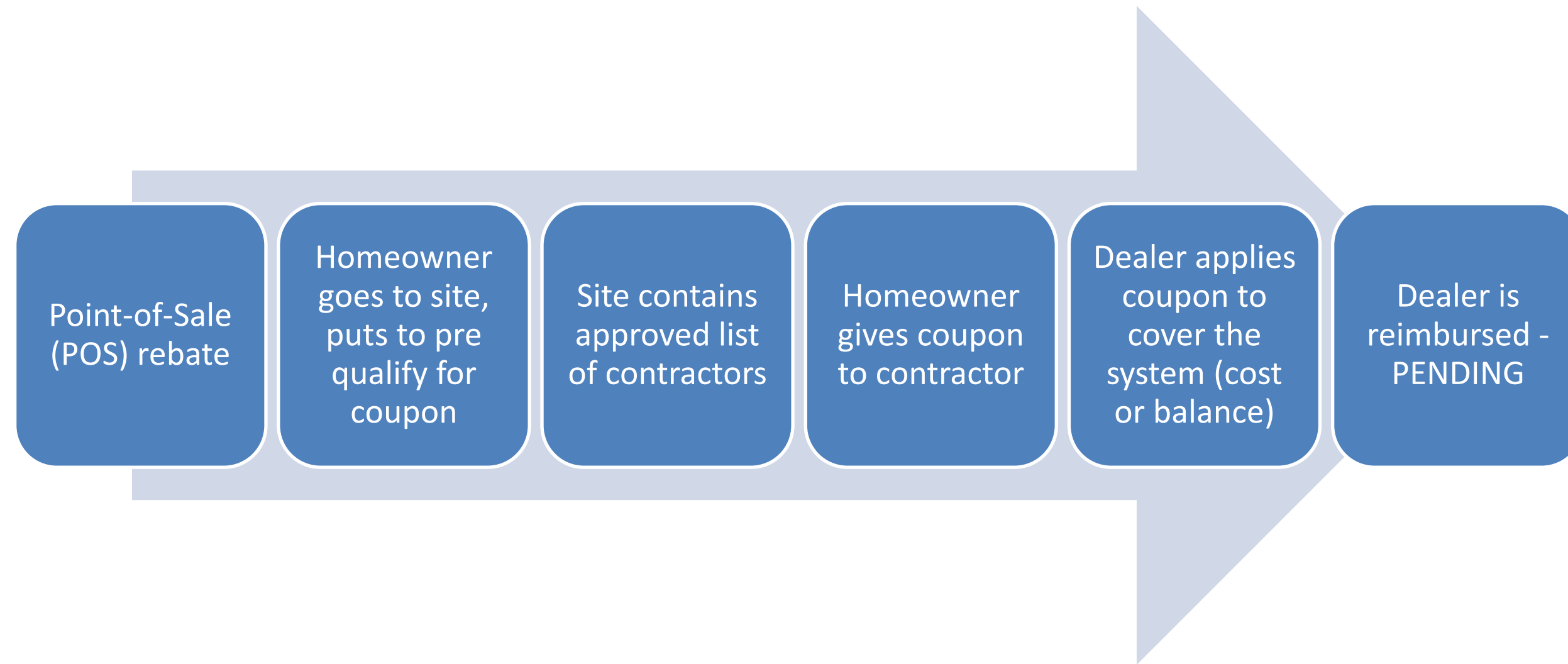


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# Regulatory Update: IRA

## Executing IRA \$\$\$s - HEEHR



### Notes:

- Rebates are ENERGY STAR
- OEMs scrambling for ENERGY STAR certification again



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# Regulatory Update: IRA

## Use Best Practices to Prepare

- Offer 25C eligible systems
  - 15.2 SEER2 heat pumps
  - 16 SEER2 AC units
  - 97% efficient furnaces
- Explain to homeowner:
  - These systems will reduce your taxes (if you pay taxes)
  - “Only you or your tax professional will be able to know for sure what your tax credit could be, but given the system that was quoted, it could be up to \$2,000 or \$2,600”
- Have a card for a local tax professional in your area for customers
- Be sure your 25C AFUE/SEER2/HSPF2 ratings & AHRI numbers are on your invoices to make claiming easy



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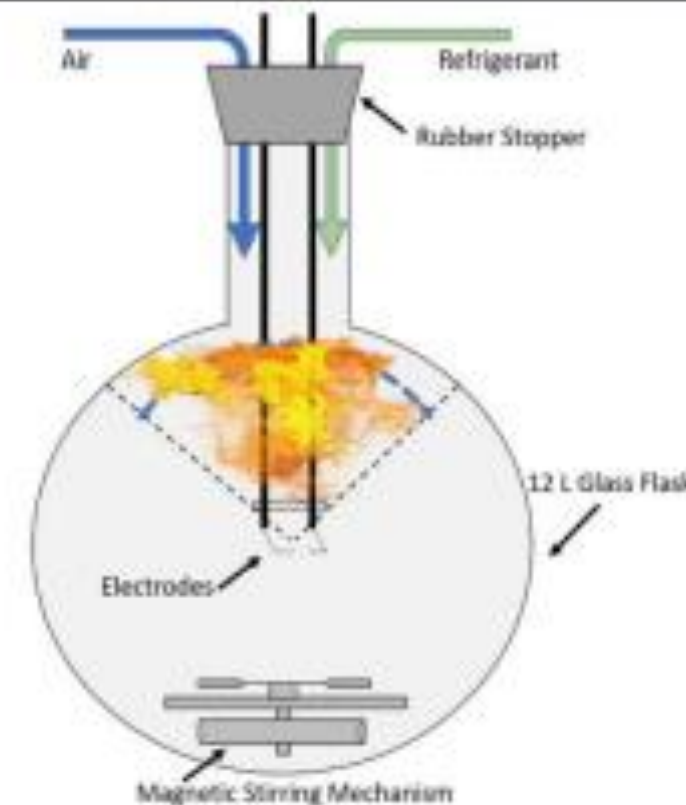
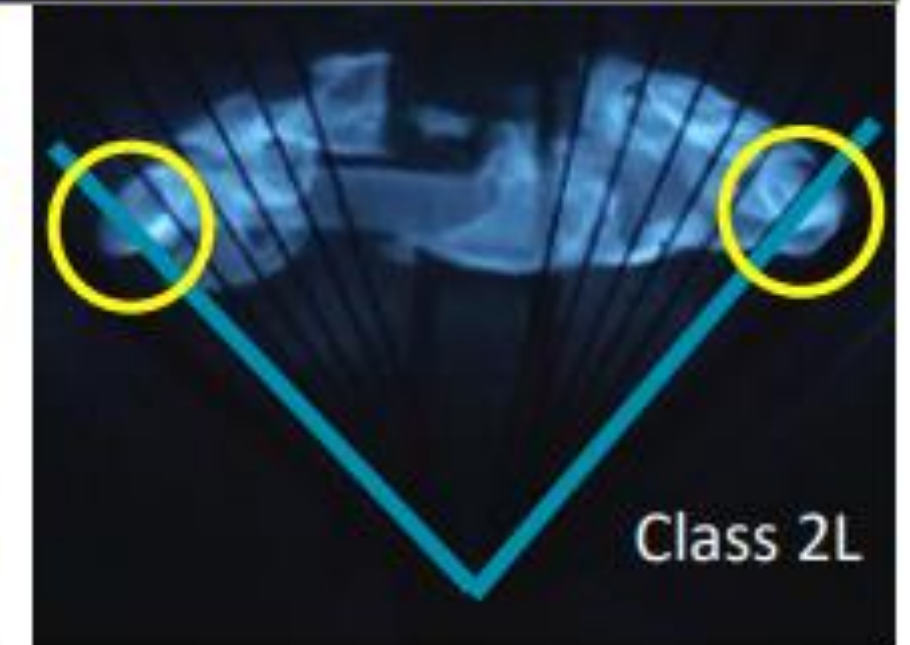
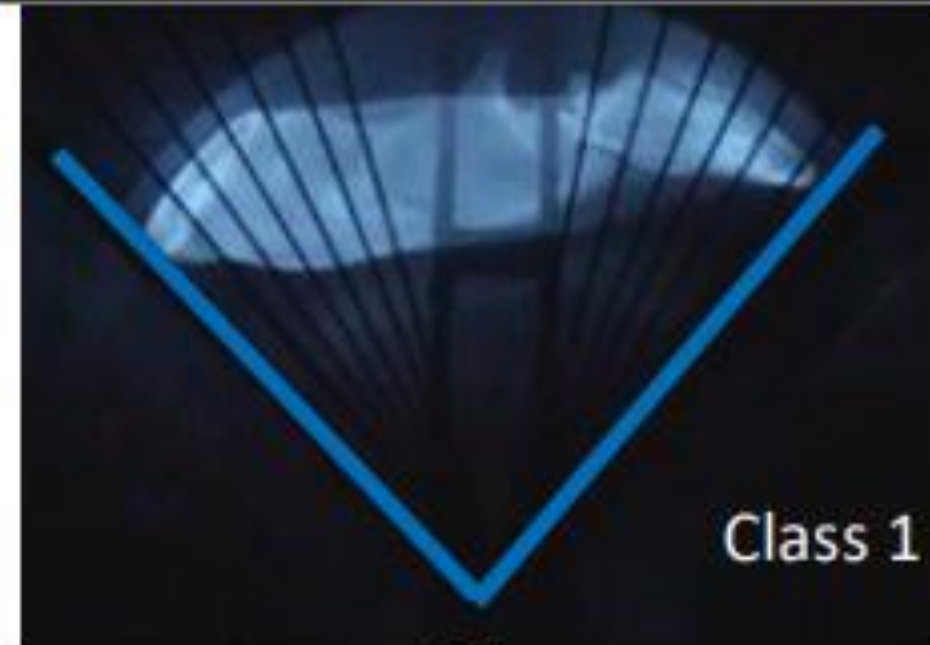
# A2L Refrigerants

How flammable is mildly flammable?

- Flame spread  $>90^\circ$  indicates flammability
- The spread beyond  $90^\circ$ , as well as the **speed at which the flame spreads** defines the degrees of flammability
  - 2L – lower flammability
  - 2 – flammable
  - 3 – higher flammability

**NOTE:** Refrigerant propane is ~1.55 times heavier than air and has no stench.

Cigarettes, toasters, static electricity not able to ignite A2Ls



# A2L Refrigerants

## American Innovation & Manufacturing (AIM) Act Multiple Parts

### Bulk Phase Down thru 2036

- Bulk phase-down & allocation for “virgin” HFCs
- Not just R-410A

### Technology Transitions

- Equipment bans for production of new equipment
- Proposed sell through
- Not final

### Refrigerant Management

- Recover, reclaim & licensing mandates
- Not final

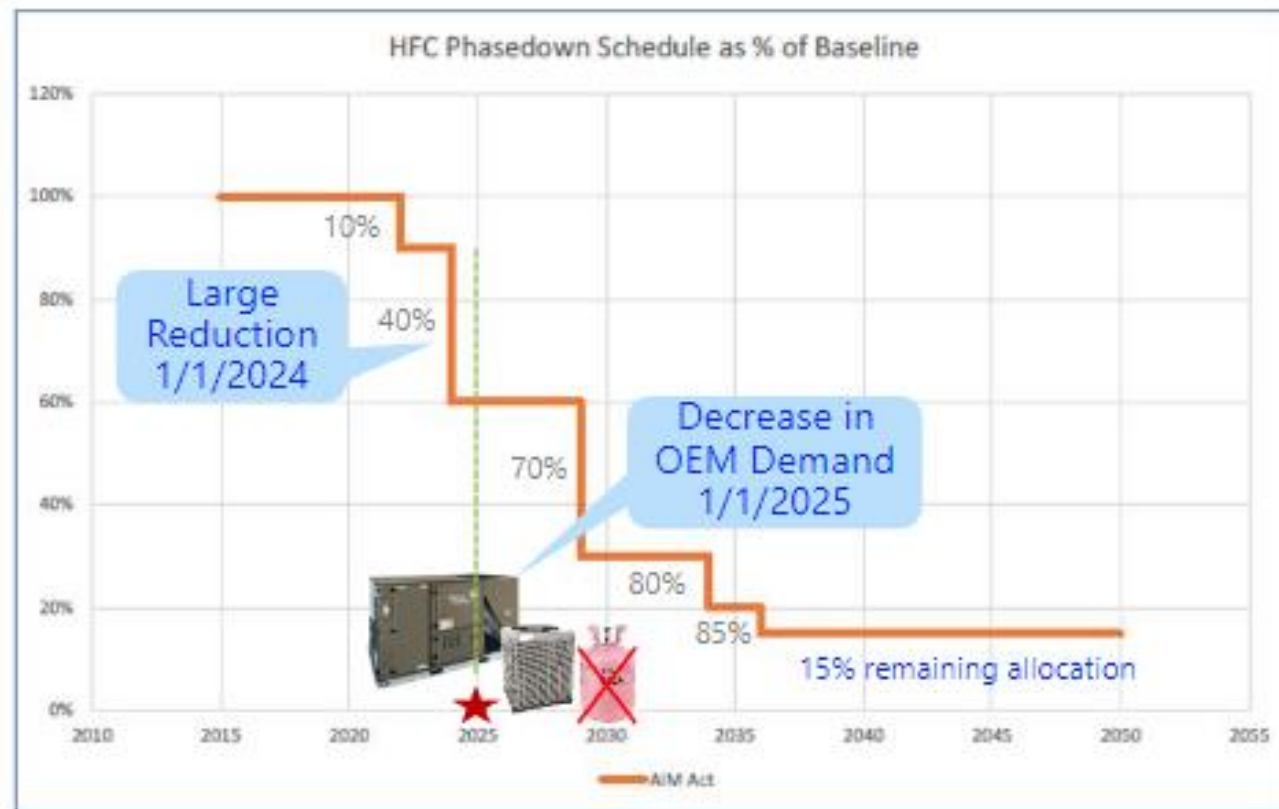


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# A2L Refrigerants

## AIM Act Phase-Down



## Main Components

- Availability of HFCs, like R-410A and R-134a will decrease and price will increase
- 2024 will be volatile as OEMs and service competing for less virgin gas
- No drop in for R-410A like there was for R-22
- Reclaim refrigerants will be needed to fill the virgin gaps

**Note: JCI will begin shipping R-454B ducted equipment in early 2024**



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# A2L Refrigerants

## AIM Act Technology Transition

### Controversy Regarding Sell-Through

- 1/1/2025 < 700 GWP, ducted/ductless
- 1/1/2026 < 700 GWP, VRF
- New production prohibition; no impact on installed base
- **Major issue preventing new split system installs > 700 GWP beginning 1/1/2025**
- HFC parts and components (compressors, valves, heat exchangers) for repair/retrofit can be manufactured and exported/sold past 1/1/2025



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# A2L Refrigerants

## AIM Act Technology Transition

**As of 1/1/2025**  
(R-410A Split Systems)



**As of 1/1/2025**  
(R-410A Self-Contained Systems)




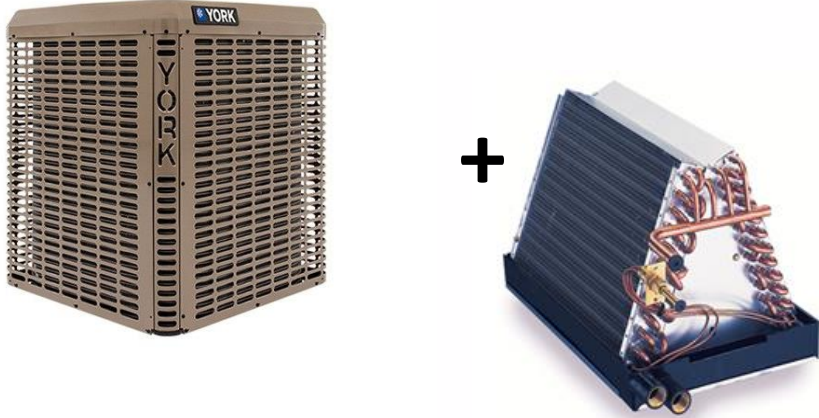
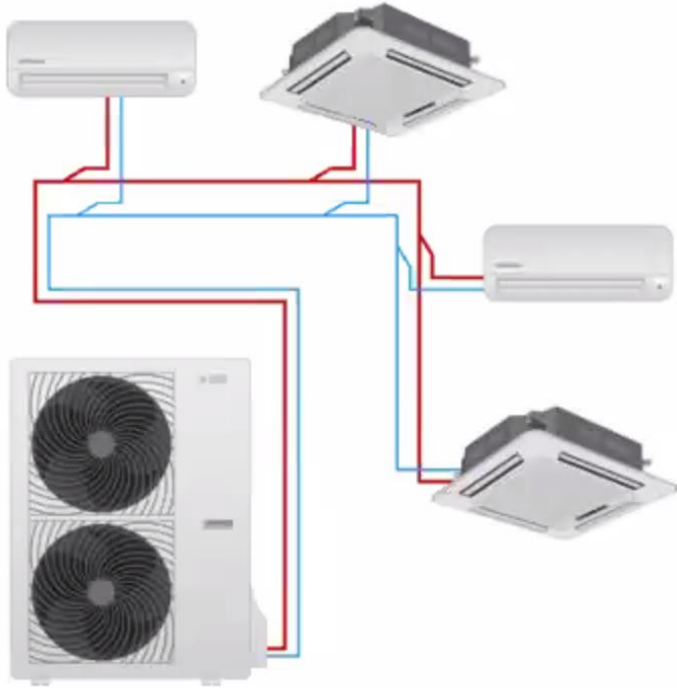

## Proposed "Date of Installation"

- Retrofits of existing systems allowed but NOT complete system installs
- 3-year sell through allowed for self-contained systems
- Indefinite R-410A loophole
- Furnaces not part of the rule



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# A2L Refrigerants

Commercial & Residential Package AC/HP	Residential & Commercial Split System AC/HP	VRF/VRV AC/HP	Components
			
Product	System	System	Component
Manufacture prohibition after January 1, 2025 Sell-through for three years until January 1, 2028	Full system install prohibition after January 1, 2025  *Chillers with no refrigerant leaving the unit are treated as a product and have a compliance deadline of January 1, 2025	Full system install prohibition after January 1, 2026	Unlimited repair/replacement of components including outdoor condensing units and evaporator units



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# A2L Refrigerants

## JCI Product Transition - Residential

- OEMs reshuffling a bit to turn over barns sooner
- Distributors trying to stock the “right” amount of R-410A products while transitioning in new
- Coils come out first
  - Not all 3 ton or below microchannel coils require RDS < 4 lbs. of refrigerant
  - RDS kits will be available
- Summer 2024 AC products – targeting 25C eligible ones first – YC6 to replace YC2F for A2L



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# A2L Refrigerants

## AIM Act Refrigeration Management

### What's Included for ACs & HPs

- No EPA Section 608 licensing changing
- 1/1/2028 require residential and light commercial ACs & HPs using HFCs to be initially charged with certified reclaim
- Charge threshold for inspection and leak repair lowered to 15 lbs. of HFCs, 1 year after final rule
- EPA proposing all disposable refrigerant cylinders be sent to an EPA-certified reclaimer to remove the remaining heel



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# A2L Refrigerants

## Use Best Practices to Prepare

ACTION	A1s	A2Ls
Safely remove refrigerant following local & national regs	Required	Required
Purge circuit with inert gas (e.g., oxygen-free nitrogen)	Best Practice	Required
Evacuate circuit	Best Practice	Required
Open circuit by cutting or brazing	Required	Required
Make repairs, purging with nitrogen while brazing	Required	Required
Leak and Pressure Test	Best Practice	Required
Evacuate the system	Required	Required
Charge the system	Required	Required

## Installation, Service & Repairs

- Purging, Evacuation and Leak and Pressure Testing become mandatory
- Everything else remains the same
- Opportunity to improve your practices and equipment



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# A2L Refrigerants

## Use Best Practices to Prepare

Service Item (versus R-410A)	A2L
Refrigerant Recovery Cylinder	Flammable (GHS label, left-handed threads)
Vacuum Pump	Check with manufacturer (switch located away from work zone)
Recovery Machines	Move to 2L compatible
Gas Detector	Move to 2L compatible
Electronic Leak Detector	Move to 2L compatible
Scales	No changes
Ventilation Fan	Similar (may be differences in machine rooms)
Electrical Hand Tools	Non-sparking preferred (AHRI – 8017)
Dry Chemical/CO <sub>2</sub> Fire Extinguisher	Chemical compatible



## Installation & Service Tools:

- Many are similar; confirm they are approved
- Need correct gauges for the right refrigerant
- Make sure technicians look through ALL pieces of equipment to ensure compatibility



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# A2L Refrigerants

## Use Best Practices to Prepare



## Tested & Ready for A2L

- Many installation & service tools being upgraded to include A2L refrigerants
- Some examples of those companies include:
  - Appion
  - Bacharach
  - Yellow Jacket
  - NAVAC
  - Inficon
  - CPS



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# A2L Refrigerants

## Use Best Practices to Prepare

### Have good sources of Reclaim

- No low GWP, non-flammable drop in for R-410A
- 1/1/28 proposed date to no longer R-410A to be used in service
- California completed law saying virgin 410A can't be used in 2030
- Get good at reclaiming or stockpile it



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# Happy Thanksgiving 2023



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