

Energy Efficiency Strategies Roundtable

3/3/2026

Agenda

- What is ECW?
- Background/ICLEI grant
- Town perspective
- Barriers identified
- Technology options
- Opportunities
- Roundtable discussion

Questions/feedback welcome throughout!

Who is Energy Conservation Works (ECW)?

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- *Joint powers board* formed by the City of Jackson, Teton County, Lower Valley Energy (LVE).
- We connect people with opportunities to reduce energy usage and emissions to keep rates low and save money on bills.
- Our goal is to make energy efficiency and renewable energy accessible and affordable throughout the community
- What we offer:
  - Low interest loans in partnership w/LVE
  - SPET funded projects
  - Community Solar
  - Outreach & education
  - Technical resources



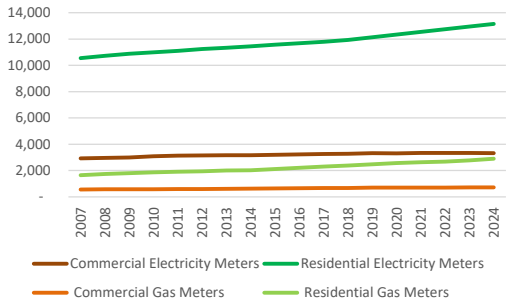


ICLEI grant effort

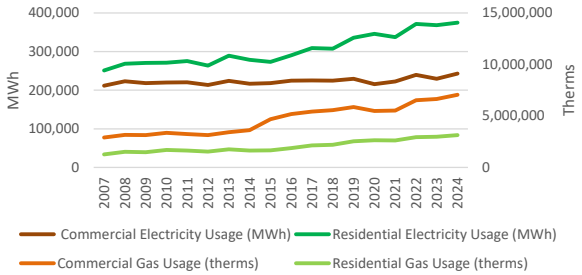
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- **ECW received EPA-funded grant (through ICLEI and Coalition for Green Capital) to scale up local community investment in clean energy**
- **Goals of grant effort:**
  - Develop a **set of actionable strategies** to scale up the market for **high efficiency** and **decarbonization technologies** in the Town and County
  - Identify **potential projects/project types** for future investment
- **Key questions**
  - What barriers are preventing energy efficiency from being implemented in the region?
  - What efficiency technology options are best suited for Jackson's cold climate?
  - What policies and strategies are available to reduce load growth?

Motivation behind grant effort



Annual Growth Rates (2007-2024)				
	Residential		Commercial	
	Electric	Gas	Electric	Gas
Meter Count	1.5%	4.5%	0.8%	1.7%
Usage	2.9%	8.7%	0.9%	8.4%



What does this mean for Teton County?

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- Need for new transmission over Teton Pass
- Local generation (Afton pipeline sized for natural gas peaker plant)
- Increased electricity prices

➢ **Avoid the need for this through strategic investment in energy efficiency!**



Jackson/Teton County Comprehensive Plan Vision



"To preserve and protect the area's ecosystem in order to ensure a healthy environment, community, and economy for current and future generations."



Barriers to energy efficiency projects

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- **Two primary barriers:**
  - *Cost*
    - Most cited, issue on projects big and small
  - *Workforce constraints*
    - Lack of available housing and the ability to hire trainable or skilled worker is key constraint
- **Additional barriers:**
  - *Code and permitting challenges*
    - Length of review process
    - Lack of training on code requirements and construction details
  - *Lack of awareness among homeowners and contractors*
    - Skepticism of HP and HPWHs in Jackson's cold climate
    - Lack of awareness about benefits of efficiency from homeowners and some contractors
  - *Low electricity rates*
    - Low rates and limited demand charges make energy efficiency investments a tough sell



Priority technologies considered for Jackson

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- **Weatherization** (air sealing, insulation, windows)
  - Big energy savings
  - Reduces peak demand
  - Costly and labor intensive
- **HVAC Systems**
  - Heat pumps!
    - Many forms and configurations discussed on following slides
    - Big opportunity for both energy and demand savings
  - Energy/heat recovery ventilation
- **Heat pump water heaters**
  - Need appropriate space in home (or outside if split system)
  - Big energy and peak demand saver





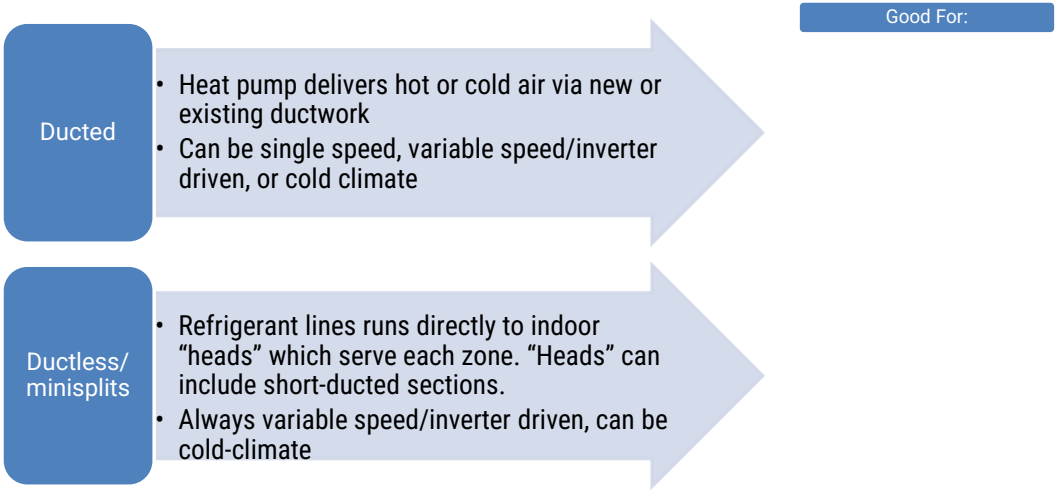


Growing presences of natural gas

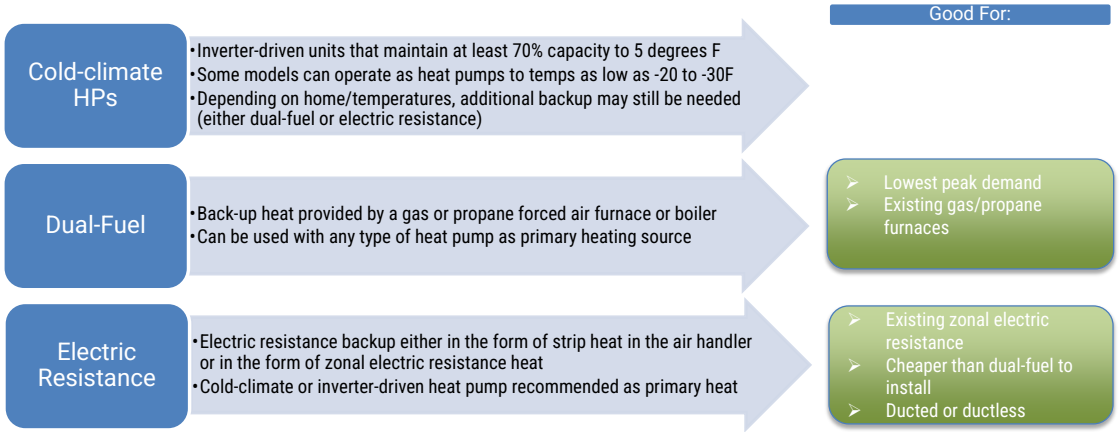


~24,000 jobs and 23,000 year-round residents, with 57% of workforce living locally

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Good For:
Ducted
Heat pump delivers hot or cold air via new or existing ductwork
Can be single speed, variable speed/inverter driven, or cold climate
Ductless/ minisplits
Refrigerant lines runs directly to indoor “heads” which serve each zone. “Heads” can include short-ducted sections.
Always variable speed/inverter driven, can be cold-climate

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Good For:
Cold-climate HPs
•Inverter-driven units that maintain at least 70% capacity to 5 degrees F
•Some models can operate as heat pumps to temps as low as -20 to -30F
•Depending on home/temperatures, additional backup may still be needed (either dual-fuel or electric resistance)
Dual-Fuel
•Back-up heat provided by a gas or propane forced air furnace or boiler
•Can be used with any type of heat pump as primary heating source
➢ Lowest peak demand
➢ Existing gas/propane furnaces
Electric Resistance
•Electric resistance backup either in the form of strip heat in the air handler or in the form of zonal electric resistance heat
•Cold-climate or inverter-driven heat pump recommended as primary heat
➢ Existing zonal electric resistance
➢ Cheaper than dual-fuel to install
➢ Ducted or ductless

All-electric heat pumps or dual-fuel?

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All-electric

- **Key benefits for customers:** Lower heating bills, improved comfort with summer cooling capability. Saves ~$1,200 on energy bills.
- **Key benefits for utility:** Saves ~$1,500/year in wholesale energy costs. Net benefit of ~$300/year to utility.
- **Key benefits for society:** Reduce greenhouse gas emissions – 3.9 MT/year.

Dual-fuel heat pumps

- **Key benefits for customers:** Low heating bills, improved comfort with summer cooling capability. Saves ~$1,200 on energy bills.
- **Key benefits for utility:** Saves ~$2,400/year in wholesale energy costs. Net benefit of ~$1,400/year to utility.
- **Key benefits for society:** Reduce greenhouse gas emissions – 3.4 MT/year.

Summary: Best **Residential** Heat Pump Technologies for Jackson

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Technology	Best Features	Application	Cost
Cold climate ducted ASHP	Need very little backup or no backup heat. High energy savings, emissions reduction, and peak load reduction	New construction, existing homes with electric furnaces	$$$
DHP/Minisplits	Mature market with cold climate options, good option to upgrade from electric resistance baseboards	New construction, existing homes with ER zonal	$$
Dual fuel ducted ASHP	Cuts emissions most of the year, doesn't impact peak load if house continues to use gas furnace backup.	Existing homes with gas furnace	$$$
Ground source HP	Very high efficiency, avoids cold climate performance challenge, peak load reduction	Homeowners where money is no object, or very long term thinkers	$$$$
Window ASHP	DIY solution for homeowners or renters, cold climate products available	Existing homes with the right kind of windows	$$
Packaged Terminal Heat Pumps (PTHPs)	Drop-in replacement for PTACs in hotels and multifamily buildings	Multifamily/lodging	$



Policy Options

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- **Voluntary reach codes**
  - Create voluntary reach/stretch codes with incentivized compliance, in collaboration with another active grant program.
- **Specific code changes**
  - -30 F design temperature requirement
  - Central AC to HP: institute a requirement that any new/replacement air conditioner be a heat pump
- **Expedited permitting process**
- **Electricity rate updates**
  - Additional demand tiers and/or tiered rates
  - Time of use rates

Heating Design Day Update Recommendation

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- Standard practice in accordance with ASHRAE Handbook - Fundamentals is to select a heating design day temperature that corresponds to 99% of hours being warmer than the temperature selected.
- Alternatively, a more conservative approach is to use 99.6% of hours being warmer than the design day temperature.

Station	99% Design Day Temperature (°F)	99.6% Design Day Temperature (°F)
Jackson Hole AP	-8.9	-14.3
MOOSE 1 NNE	-11.0	-15.9

Heating Design Day Update Recommendation

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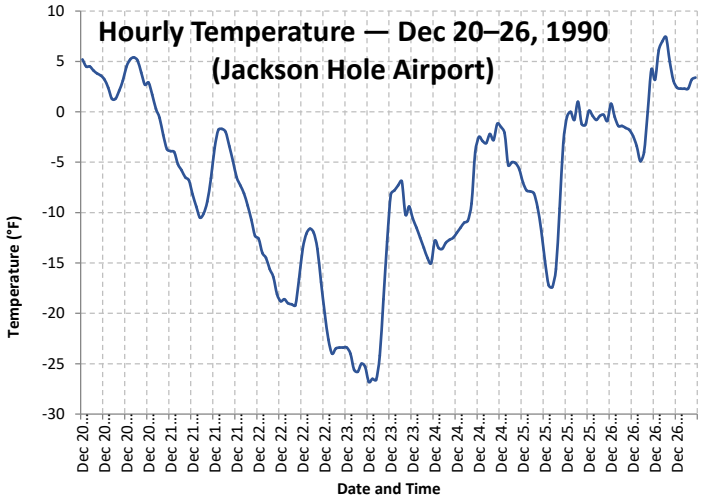
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Designing with Heat Pump-Only (No Backup)

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- Traditional design/sizing approach is concerned with comfort – buildings are designed for occasional discomfort (a few hours/year on average).
- Traditional HVAC equipment does not lose capacity at colder than design temps, but HPs do.
- **Recommended Solution:** Building Simulation with Extreme Weather Files to verify building will not freeze.



Additional Opportunities

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- Use SPET funds to facilitate efficiency in affordable/workforce housing
- Expansion of ECW commercial loan program
- C-PACE financing
- Increased workforce training
- Reducing project costs through grouped-project model
- Expanded LVE programs/rebate amounts for energy efficiency
- Signage on public facing projects



Discussion Questions – Round 1

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- **Barriers:** What are the biggest barriers to implementing energy efficiency in your work? What solutions do you see to these barriers?
- **Permitting:** Does the permitting process delay or prevent efficiency projects from happening? How could this process be improved?
- **Heat pump deep dive:** Which types of heat pumps do you most frequently see installed in your work? What barriers do you see to increasing heat pump installations? Are there any performance concerns or barriers?

Discussion Questions – Round 2

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- **Financing:** Would increased rebate amounts and/or expanded financing options drive additional energy efficiency in the markets you serve?
  - What types of financial incentives would be most motivating to your clients?
- **Workforce:** What types of workforce training would be most useful? What are the gaps?
- **Rates:** How would a changed rate structure (time of use, larger demand charges) impact your work? What do you think the reaction would be to updated rates?

Discussion Questions – Round 3

- **Design Temperature:** Is the current -30F design temperature a barrier to designing without electric resistance? Would a -14F design temperature better in able all heat pump (no back up) design? What concerns/drawbacks do you see?
- **Code Transition/Reach Codes:** How has the transition to 2021 IECC been? Are there particular pain points?
  - Would there be appetite for requiring two rather than one of the additional efficiency measures?
  - Do you see an appetite for reach codes?
- **Central AC to HP:** What do you think of the proposed requirement that any installed air conditioner be a heat pump? What concerns or barriers do you see to this approach?

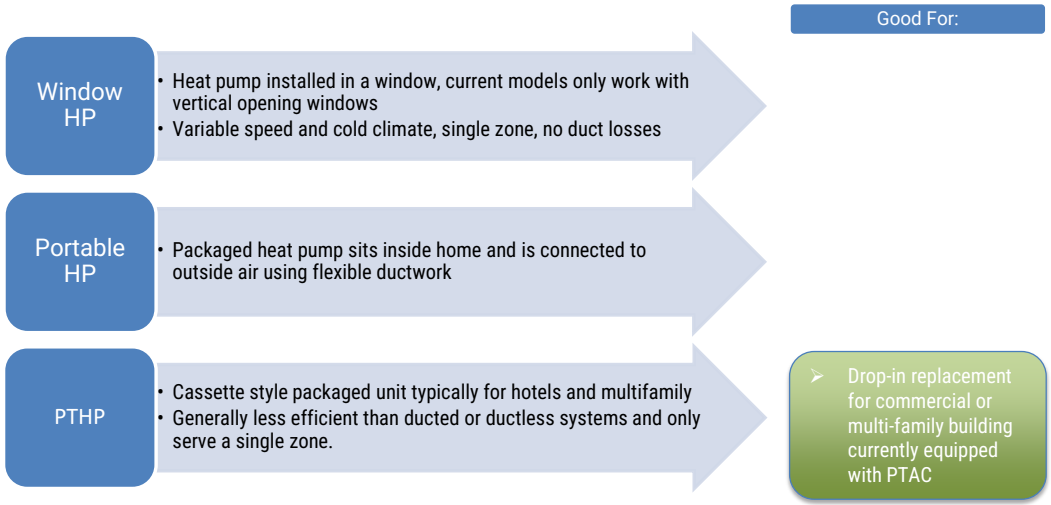
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Thank you!

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Good For:
Window HP
• Heat pump installed in a window, current models only work with vertical opening windows
• Variable speed and cold climate, single zone, no duct losses
Portable HP
• Packaged heat pump sits inside home and is connected to outside air using flexible ductwork
PTHP
• Cassette style packaged unit typically for hotels and multifamily
• Generally less efficient than ducted or ductless systems and only serve a single zone.
➢ Drop-in replacement for commercial or multi-family building currently equipped with PTAC