

Beneficial electrification for Eagle County Housing



General Information

Building: Mobile Home

Location: Dotsero Mobile Home Park

Type: Residence

Size: ~1,200 sf

Year Built: 2000

Project Team:

Northwest Colorado Council of Governments (NWCCOG)
Energy Smart Colorado
Walking Mountains Science Center (WMSC)

Holy Cross Energy (HCE)
State organizations

Background

There are over 1,500 mobile homes in Eagle County and 81,000 in Colorado. Most are in Mobile Home Parks and experience the following issues:

- Decades old, hardly built to energy standards
- Poorly insulated and uncomfortable
- Powered by expensive propane
- At higher risk from gas line leaks, carbon monoxide, and other dangerous gas emissions from damaged appliances
- Poor ventilation

The Beneficial Electrification for Eagle County Housing (BEECH) project is addressing these issues in the Dotsero Mobile Home Park. For the pilot phase, three homes received energy audits that identified weatherization improvements and appliance replacements.

All three residents were eligible for income-qualified programs administered through NWCCOG: federally funded Weatherization Assistance Program (WAP) and Energy Outreach Colorado's CARE (Colorado's Affordable Residential Energy) Program. These fund energy efficiency and weatherization improvements, but they do not provide for the electric service improvements, nor do they cover health and safety improvements like stoves and exhaust fan installs or replacements. The gap in funding, estimated at \$2,500 per home after rebates and WAP and CARE funding, was provided by Eagle County.

Project Results*

*Cost data reflects one specific home, and improvements vary slightly from home to home.

Weatherization Improvements

- Crawl space encapsulation and further insulation
- Air sealing
- Window replacement
- Storm window installation.

Electrification Improvements

- Wiring upgrade
- Bosch ducted cold climate air source heat pump installation
- Rheemheat pump water heater installation
- Frigidaire induction range installation

Energy Costs

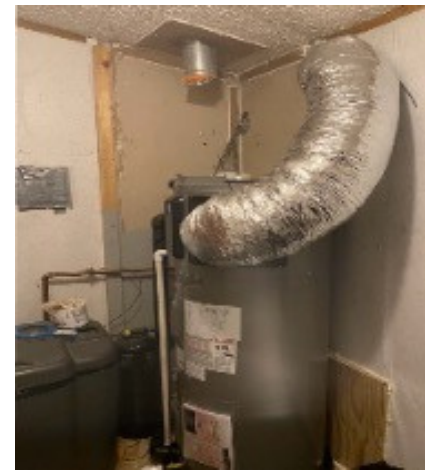
Only 9 months of comparisons can be made currently. However, those cost savings reflect **\$327.40 saved**, with an average of \$80.54 saved during winter months, and \$14.30 saved during summer months.



BEECH Project

Total Project and Rebate Costs

Equipment	Off-the-Shelf Cost	Labor Costs	Total Cost
Wiring Upgrade	\$2,995	\$0	\$2,995
Bosch ducted cold climate air source heat pump	\$10,596.80	\$2,142.80	\$12,739.64
Rheemheat pump water heater	\$2,935.50	\$425	\$3,360.50
Frigidaire Induction range	\$1,324.89	\$559	\$1,883.89
Total Electrification Equipment Costs			\$20,978.88
Total Weatherization Improvement Costs			~\$11,000
Total Costs			~\$31,978.88
HCE Electrification Rebate			(\$4,080)
WMSC Electrification Rebate			(\$6,000)
Total Cost to NWCCOG after rebates*			\$10,898.88
Cost to homeowner			\$0



*WAP and CARE programs are administered through NWCCOG. The total cost to NWCCOG may be higher due to other carpentry and modification costs.

Beyond Electrification

Improvements made in these mobile homes go beyond better energy efficiency and lower energy bills. The families experience a more comfortable home and importantly, a safer home. Eliminating the need for fossil-fuel burning equipment made strides in home safety and indoor air quality.

Lessons Learned

The pilot phase resulted from a successful collaboration of multiple organizations. The BEECH program has now completed retrofits for 5 mobile homes, with 10 more underway. Addressing funding gaps is a priority for Eagle County Government, and continued, robust collaboration between partners will help keep momentum for this project.

