



Wapiti Commons Case Study | Rifle, Colorado



Project Data

Project Location	Rifle, CO
Climate Zone	6B
Placed in Service	2024
Size (sf)	~1,152 sf condos ~1,706 sf townhomes
Floors (#)	Single level condos 3-level townhomes
Units (#)	12 homes for working families, 8 homes for older adults and smaller families
Buildings (#)	7 buildings (10 townhomes, 10 condos)
Construction Type	New
Fuel-Type	All-Electric
Total Development Cost	~\$3,900,000 (2024)

Overview

Wapiti Commons is an affordable housing community consisting of 20 homes designed for working families and older adults located in Rifle, CO. The project is designed to address the enterprise zone’s urgent affordable housing needs while lowering tenant utility costs through ambitious energy targets and a net zero design. With an all-electric design, the development employs energy-efficient measures and onsite solar designed to fully offset the site energy consumption. Clean Energy Economy for the Region (CLEER) played a large role advising the housing department on its sustainability and efficiency features and with support from funding partners including Colorado Division of Housing, Colorado Department of Local Affairs, and the Housing and Urban Development, the project highlights how affordable housing can achieve both high energy performance and lower tenant utility costs.



Electrification Strategies and Features

The project is located in an enterprise zone which is an area of the state experiencing economic distress, characterized by high unemployment, low per capita income, or limited population growth. Enterprise zone developments are required to prioritize energy efficiency to reduce utility costs for tenants. A key project goal was to ensure affordability over the long term, making energy-efficient design and beneficial electrification top priorities.

Roof	R-30 cavity insulation (U-0.032)
Exterior Walls	R-20 batt in 2 x 6 wood studs + R-6 insulated panel (U-0.042)
Windows	Double pane, low-e glazing U-0.32
Interior Lighting	0.29 W/sf
Exterior Lighting	0.3 kW
HVAC	Split DX Heat Pumps with ERV (23 SEER, 11 HSPF with 0 deg F operation temperature)
DHW	Hybrid heat pump water heater with electric resistance back up (3.75 UEF)
Water Fixtures	2.5 gpm showers, 1.2 gpm lavatories, and 1.5 gpm sinks
PV	6.5 kW PV system per townhome

The key design features of the project are highlighted in the table to the left. A high-performance envelope forms the first and one of the most crucial steps of the design as every subsequent system depends on it. The project uses individual cold climate split system heat pumps for space heating and cooling and ventilation is provided through in-unit energy recovery ventilators.

The design also incorporates heat pump water heaters (HPWH), which are highly efficient and operate at nearly three times the efficiency of conventional electric resistance water heaters. In addition, each townhome includes a 6.5-kilowatt (kW) photovoltaic (PV) solar array designed to fully offset its annual energy consumption.





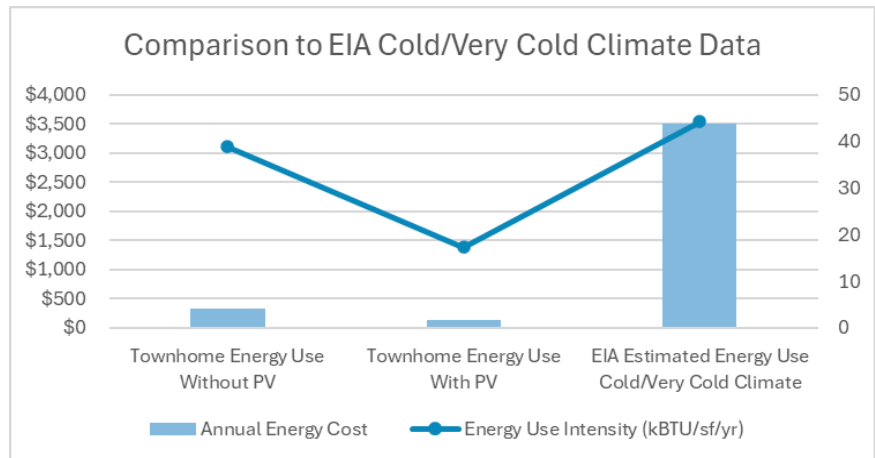
Successes

Wapiti Commons demonstrates that net-zero affordable housing can be cost-effective both upfront and over the long term. With monthly utility bills averaging between \$14 and \$22 for each unit, projects like Wapiti Commons are inspiring developers to prioritize affordability for tenants. As home prices steadily increase across the country, the project creates an essential opportunity for residents traditionally excluded from the market to purchase affordable homes.

Wapiti Commons demonstrates how developments can meaningfully lower annual energy costs, consumption, and greenhouse gas emissions, as shown in the adjacent table. The figures are compared to the median U.S. single-family household in a cold or very cold climate¹. The Social Cost of Carbon is the estimated future dollar cost of the economic and social damages caused by an additional ton of carbon dioxide emissions.

Typical Unit	Without PV	With PV
Total Annual Energy Use (kBTU)	55,892	24,846
Total GHG Emissions (lbs CO ₂)	15,038	6,684
Total GHG Intensity (lbsCO ₂ /sf/yr)	10.5	4.7
Social Cost of Carbon (2025)	\$566	\$252
Social Cost of Carbon (2050)	\$791	\$352

Amid escalating home prices, the project effectively responds to the region’s housing deficit. Wapiti Commons serves as a strong model for achieving net-zero performance without compromising affordability over time.



¹ <https://multifamily.fanniemae.com/financing-options/green-financing/2023-multifamily-energy-water-survey>