

Ontonagon, Michigan

# ONTONAGON VILLAGE HOUSING



## CHALLENGE

Local housing commission needed an all-electric heating and cooling solution to provide year-round comfort in a climate subject to extreme cold

## SOLUTION

M-Series Systems from Mitsubishi Electric

## RESULT

Housing commission saves \$30,000 per year and offers residents energy-efficient comfort in all seasons

Nestled in a remote part of Michigan, Ontonagon is a village sitting on the edge of Lake Superior. With a population of about 1,500, Ontonagon residents are used to beautiful but humid summers on the lake and bitter cold winters. After years of enduring expensive and uncomfortable electric-resistance heat, Ontonagon Village Housing, a subsidized housing facility, decided to consider alternative HVAC options.

“The electric bills kept getting higher, and we decided to price out bringing in natural gas lines,” explained Karen Jackson, executive director, Ontonagon Village Housing. With a projected cost of nearly a million dollars, local utility provider [Upper Peninsula Power Company](#) (UPPCO) swiftly proposed a solution.

“I looked at them and said, ‘Why would you want to introduce that infrastructure? That cost?’” said Andrew McNeally, energy-efficiency program administrator, UPPCO. “My experience being from New England says cold-climate heat pumps will take care of your problem without

negatively impacting your tenants.” UPPCO’s heating and cooling selection for Ontonagon Village Housing: [M-Series mini-split heat pumps](#) from Mitsubishi Electric.

## A MODERN-DAY ALTERNATIVE TO BASEBOARD HEAT

UPPCO has been working on energy-efficiency programs since 2009, when Michigan law went into effect, incentivizing utilities to help customers move beyond fossil fuels. A 60-unit, all-electric, 15-building property, Ontonagon Village Housing had always used electric resistance for heating. Unfortunately, the electric-resistance systems struggled to keep up with the freezing temperatures. “Electric resistance can be quite expensive, especially now, and heat pumps do a phenomenal job,” noted Mike Duquaine, warehouse manager, [Stop’s Heating and Cooling](#). Additionally, heat pumps solve comfort challenges year-round. With no central air conditioning in the summers, Ontonagon residents depended on box fans and inefficient



window AC units. Heat pumps provide gas-free heating and energy-efficient air conditioning.

Working with Stop's, Mitsubishi Electric M-Series systems featuring hyper-heating capability were installed on the property in phases. "During these cold winter periods, these systems can be two to four hundred percent more efficient during the course of the heating season, noted Kevin DeMaster, senior manager, utilities and electrification. "Phase three of this project included our [Deluxe Wall-Mounted Indoor Unit](#). This new unit provides 100% heating to -5 °F.

Each residence was outfitted with one compact, wall-mounted indoor unit and one outdoor unit. Installation was efficient with Stop's completing each phase in four days total. Being a Mitsubishi Electric Elite Diamond Contractor®, Stop's technicians have completed comprehensive manufacturer-led training to ensure the heat pumps are installed and sized correctly for each project. "We pride ourselves in knowing our product and providing the best experience possible for our customers," said Duquaine. "When it comes to ductless mini splits,

Mitsubishi Electric is the only brand we trust to install."

### EXCEPTIONAL AIR QUALITY + COMFORT

Since receiving their new heating and cooling systems, residents have been vocal about their positive experiences. "Residents say the air seems to be cleaner. With our baseboard heat, it was just radiant heat — you didn't get any circulation or filtration," said Jackson. From a maintenance standpoint, Ontonagon Village Housing also avoided worry about the pilot lights and carbon monoxide associated with natural gas. "Think of the air quality benefits of not having to combust natural gas or any other deliverable fuel. They don't have that here," said McNeally. The Deluxe Wall-Mounted Indoor Units also feature Dual Barrier Coating to enhance indoor air quality. Applied to the internal parts of the indoor unit, the coating prevents dust, particles and grease build-up on the system, enhancing overall performance.

Beyond the filtration benefits, the residents were delighted when the systems stood up to Michigan's

harsh winter season. "In spring of 2021, there was a polar vortex that made national news because power plants in Texas were freezing," explained McNeally. "The units here at Ontonagon Village experienced 25° F below zero temperatures and not a single tenant had any issue or even needed to turn on their electric resistance as backup."

"We've had below zero weather up here — it handles it," said Carlene, a resident at Ontonagon Village Housing. "I've lived so much better since we've had this new unit."

### THE COST BENEFITS OF DECARBONIZATION

Ontonagon Village Housing also reaped the benefits of a more efficient heating and cooling system. "Dollar-value-wise, the savings have gone from about \$95,000 a year to \$65,000 a year, total cost for the whole facility," explained McNeally. The Housing Commission can also rest assured knowing residents have an effective heating and cooling solution for all seasons. Not to mention, the town no longer has to worry about the addition of a pipeline.

**Project Completed:** June 2021 |

“One of the benefits of this project was helping this community avoid the financial and environmental costs of bringing in expensive gas lines to the property,” said DeMaster. In climates like the upper peninsula of Michigan, carbon emissions are a real problem as many developers specify fossil-fuel-burning systems to combat cold temperatures without considering planet-friendly alternatives.

With UPPCO serving a rural service territory (just over 50,000 customers across 4,400 square miles), and 40 percent of their customer base identified as low income, helping developers understand the efficiency, cost and performance benefits of heat pump systems is a goal for the utility — along with reducing the number of power plants.

“I now have 60 tenants here in Ontonagon Village telling me and anyone else in earshot how wonderful the heat pumps are,” expressed McNeally. “This project gives us a powerful opportunity to showcase what heat pumps can do and what UPPCO can do for tenants and customers.”



## PROJECT TEAM

### Owner and Property Management:

Village Housing, Ontonagon Ontonagon, MI

### Utility:

UPPCO

- Corporate Office: Marquette, MI
- MI Service Centers: Escanaba, Houghton, Iron River, Ishpeming, Munising and Ontonagon

### Mechanical Contractor:

Stop's Heating and Cooling, Land O' Lakes, WI

## EQUIPMENT

- ▶ (36) MUZ-FH H2i® Heat Pumps
- ▶ (24) MUZ-FS H2i plus® Heat Pumps
- ▶ (36) MSZ-FH Wall-mounted Indoor Units
- ▶ (24) MSZ-FS Deluxe Wall-mounted Indoor Units