MITSUBISHI ELECTRIC
HEATING & AIR CONDITIONING

Keene, New Hampshire

Mitsubishi Electric's ecodan® system: Providing All-Electric Comfort

Challenge

Replace an aging gas boiler with an all-electric, all-climate heat pump system that improves comfort and efficiency without major renovations.

Solution

Mitsubishi Electric's ecodan® single-phase air-to-water (ATW) heat pump system, designed for hydronic heating and cooling, as well as domestic hot water applications.

Learn more

https://youtu.be/EPntD-qZhtYg

For nearly 30 years, Kim Bergeron, Chief Operating Officer of Bergeron Mechanical Systems, has lived in his family home in New Hampshire. As an HVAC professional and sustainability advocate, Bergeron wanted to make his home as energy efficient and independent from the grid as possible. His goal was to find a heating and cooling solution that would improve comfort and eliminate reliance on fossil fuels and gas-fired systems.

The Need for a Better System

The gas-fired boilers that once kept the Bergeron home warm were aging, inefficient, and increasingly unreliable. "It wasn't really fair of me to ask my wife to go downstairs and hit a boiler reset button on a regular basis," said Bergeron. "Parts of the home weren't heating evenly. It just became evident that we needed to upgrade our system."

With temperatures often dipping below zero, he needed a solution that could deliver high-temperature water efficiently, perform reliably in cold weather, and integrate seamlessly with his home's existing baseboard and radiant systems.

Bringing Innovation Home

When Mitsubishi Electric's ecodan® single-phase air-to-water heat pump became available in the U.S., Bergeron saw an opportunity to put this technology to the test in his own home. The ecodan system produces water temperatures up to 158°F, allowing the Bergeron family to use their existing baseboard radiation and delivery systems without requiring interior renovations. The ecodan system is designed for hydronic heating, cooling, and domestic hot water.

With Hyper-Heating (H2i®) and Flash Injection technologies, it maintains full heating capacity at 5° F and continues operating down to -22° F. Its modular design, featuring an outdoor unit paired with a compact indoor Hydrobox, makes it compatible with both new and retrofit applications. By using refrigerant piping instead of water piping between the outdoor and indoor units, glycol maintenance issues and potential leak points are eliminated. It's an all-in-one, low-maintenance, high-performance solution.

Mitsubishi Electric ecodan® compact indoor Hydrobox unit

Net-Zero Comfort in Subzero Temps

The installation transformed Bergeron's home comfort and energy profile. Even during subzero temperatures, the ecodan® system maintains consistent indoor warmth without the need for fossil fuels. "The most significant benefit is twofold," Bergeron said. "There's a significant reduction in energy usage, and the comfort level is unmatched. Our home never deviated from temperature, even when it hit -10°F outside."

The system's ultra-quiet operation was another standout feature. "Our son's room is only a few feet from the outdoor unit, and he never heard it running all winter," Bergeron shared.

By pairing the Mitsubishi Electric ecodan system with his expanded solar array, Bergeron achieved net-zero heating and even generated excess power. "Over our test winter, we had an extra 7.2 megawatt-hours of electricity," he said. The result was greater comfort, lower costs, and a smaller carbon footprint.

Seamless Setup, Strong Support

For Eric Peterson, Operations Manager at Bergeron Mechanical Systems, installing the ecodan system was both straightforward and efficient.

"The Mitsubishi Electric ecodan system is unlike other heating equipment we've installed. It's lightweight, wall-hung, and can be set up in about a day and a half," Peterson said. "You can go direct to the circulators or satisfy a tank – flexibility that makes it a perfect retrofit option."

The Mitsubishi Electric Trane HVAC US (METUS) support team also played a key role. When Peterson had a question, the team provided swift, clear responses, which further provided a smooth installation.

Comfort Today and for the Future

Today, the Bergeron home stands as a model for energy independence and electrified comfort. "Mitsubishi Electric's ecodan system heats our home silently all winter long," Bergeron said.

Beyond his home, Bergeron's project demonstrates the potential of air-to-water heat pump technology to revolutionize heating and cooling. With flexible design, high efficiency, and all-electric operation, the ecodan system represents the next step in sustainable comfort – proving that cleaner, smarter heating is not just possible, but practical.

> **“Comfort is knowing your family is warm and secure without thinking about it, and that’s exactly what this system delivers.”**
>
> — Kim Bergeron, Chief Operating Officer of Bergeron Mechanical Systems

Project Team

Owner/Operator:
Bergeron Mechanical Systems

Contractor:
Bergeron Mechanical Systems

Equipment

Mitsubishi Electric
- (1) ecodan ODU [WUZ-SA48NMZ]
- (1) Hydrobox IDU [ERSF-VM6E]
- (1) Domestic Hot Water Tank (DHW) - Heat Flow [HF-60E]
- (1) Buffer Tank [45AC-BT26-H]
- (1) 3/4” 3 - Way Valve [Valve Body: VT3427] [Valve Head: AG13D020]

The above are European model numbers, as this configuration is a US beta installation of the system. For more information on US model numbers, speak with your local METUS sales representative.

MITSUBISHI ELECTRIC TRANE HVAC US LLC

Printed in the USA

ME_IN_2898_5-25