

A Case Study

Reduced gas use by **16.2%** - 24,271 therms saved in 3 years. Even though:

- Property managed by national, well-regarded property management firm.
- Modular, condensing boilers less than 5 years old.

Project paid back in 1.6 years.

- Property Description:
- 9-stories
- 120 Units
- 120,736 gross square feet
- Subsidized multi-family housing



Climate Impact of Case Study Building

76.4

Net tons of CO₂e reduced by ReMO (One Year)

= 14.8 Vehicles Off the Road



Positive Impact on Operations & Maintenance

NEW ECOLOGY

When there is something wrong with building operations, ReMO knows—and tells you. The following are actual experiences that were costly, disruptive, and/or increased the owner's risk.

New Ecology's ReMO service helps you avoid them all.

Energy Wasted 	Energy Increased 	Extra Expense 
Tenant Comfort 	Risk/Liability 	Equipment Life 

New Ecology is a mission-driven organization that is a national leader in multifamily energy efficiency. We have developed a low-cost, state-of-the-art method to collect operational data from your heating and hot water systems and turn it into the results you want. Results that help you avoid:

- Emergencies
- Complaints
- Wasting money on unnecessary service calls
- Premature equipment failure
- Risk

Things Falling Through the Cracks

One of two heating boilers is intentionally shut off at the end of the heating season to allow for repair of a leaking pressure relief valve. The repair and the boiler's off status had been forgotten amidst other responsibilities during the off-season. The ReMO service alerted staff to the oversight, prompting action on the needed repair and the boiler is brought back on-line. Without the ReMO alert, the heating system would have been at 50% capacity.

IMPACT:  

Settings Being Changed without Your Knowledge

A service contractor is on site for routine pump maintenance. As a matter of practice, he changes (increases) the boiler settings based on antiquated rules of thumb. ReMO confirms that there are no tenant complaints prompting the changes and reinstates the optimized settings.

IMPACT:   

Improper Diagnosis of No Heat Complaint

A service technician is called to diagnose a heating complaint. The technician increases the temperature settings on the boiler—a very common first step. This does not resolve the problem, so another call is made for service. A second technician properly diagnoses the problem and completes the repair, but does not return the boiler's settings to those in place before the first call was made. ReMO offers the technician diagnostic help going forward and reinstates the optimized settings.

IMPACT:    

Improper Reaction to No Heat Complaint

A service technician tries, but is not able to diagnose the cause of a heating complaint, so disables the system's outdoor air temperature sensor to ensure the boiler runs at higher temperatures. ReMO alerts the owner that the boiler is not running as it should and identifies the cause.

IMPACT:   

System Sensor Disabled

Someone removed a boiler's hot water supply sensor from the pipe well and hung it outside of the pipe. Instead of sensing boiler water temperature (typically ~160F), it is sensing the boiler room's ambient air temperature (~90F). The boiler programming, therefore, determines that hot water supply target temperature is not satisfied, and fires over and over again, trying to reach set-point. With the boiler room temperature increasing, maintenance staff installs an electric fan to cool off the room to make it habitable. ReMO alerts the owner that the boiler is 'running away', offers possible causes, and recommends the fan be removed or put on a timer.

IMPACT:    

System Sensor Poorly Located

A boiler's outdoor air temperature sensor tells the boiler what system water temperature to target for a given outdoor air temperature. It was installed so that it is often in the sun, effectively 'tricking' the boiler into thinking it is warmer outside than it really is. This makes the boiler shut off prematurely and causes complaints. To resolve the complaints, your contractor or maintenance staff raise the boiler's settings and overheat the building. ReMO identifies the problem, moves and shields the sensor, and reinstates the optimized settings.

IMPACT:   

Equipment Maintenance Needed

A domestic hot water mixing valve is not moderating the supply water temperature enough to ensure safe water temperatures are being delivered to the tenants. If temperatures remain unchecked and high enough, scalding can occur in as little as two seconds. If temperatures remain unchecked and low enough, the conditions for growing the Legionella bacteria may be present. ReMO identifies the problem and helps get the mixing valve serviced.

IMPACT:    

Well-Meaning Service Contractor Creates Problem

A service contractor is performing their annual inspection in the summer. The technician notices a flashing light on the pump controller, a device that exercises and rotates system pumps. Though the flashing light was a normal indication that the pumps were off (for the summer), the technician assumes there is a problem and makes changes to the pump controller.

When the heating season begins, the changes made by the contractor result in 'No heat' complaints. A call for service is made, a second technician responds and increases the boiler's settings, unaware of the pump control changes made by his colleague. The heating complaints persist, so another call is made for service. A third technician responds, discovers and addresses the pumping issue but does not reinstate the original settings. ReMO offers the technician diagnostic help going forward and reinstates the optimized settings.

IMPACT:   

How to Get Started

Contact us at 855-888-6468 or ReMO@newecology.org.

► To learn more, visit <http://www.newecology.org/what-is-remote-monitoring-optimization-remo/>



NEW ECOLOGY

New Ecology is a mission-driven non-profit organization dedicated to the development and operation of sustainable buildings. We have developed a low-cost method to collect operational data from heating and hot water systems and generate savings.

“It’s like having a team of experts keeping an eye on your systems, 24/7. All of the benefits at a fraction of the cost.”

— *Frank Alvarez,*
Senior VP, Operations,
Beacon Communities

ATTENTION: NON-PROFIT BUILDING OWNERS!

Massachusetts Department of Energy Resources funding subsidies to save energy and improve operations through Remote Monitoring

INCENTIVES

For a limited time, non-profit owned buildings are eligible to receive:

- No-cost documentation of central systems and equipment, valued at \$2,000;
- \$3,000 off the total cost of the NEI Remote Monitoring service.

On average, these incentives combine to cover 50% of the cost.



Remote Monitoring is the key to saving energy and effort - money and time - freeing you up to focus on your core mission.

This Monitoring-based commissioning approach allows us to:

- Save energy by optimizing system performance, 9% of gas use on average;
- Identify solutions for persistent problems that others have struggled to resolve;
- Provide early alerts on operational anomalies before they become big, expensive problems.

WE CALL IT ReMO: REMOTE MONITORING AND OPTIMIZATION.

ReMO goes way beyond what your employees, installers or service contractors can do. We invest our time and expertise watching your building so you don't have to.

HOW IT WORKS

1. Call us for a brief conversation to ensure ReMO is right for you.
2. An engineer documents your existing conditions, sequence of operation, and outlines the plan for monitoring.
3. Your ReMO system is installed and data collection commences.
4. We analyze your system performance, recommend improvements, and help you maintain them.
5. We keep monitoring your system and alert you when we detect a problem.

HOW TO GET STARTED

Contact us at **855-888-6468** or **ReMO@newecology.org**.

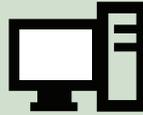
OUR PARTNERS:



ReMO

THE RIGHT DATA + THE RIGHT ANALYSIS = THE RIGHT ACTION

MONITOR

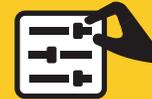


ANALYZE



OPTIMIZE

Engineers analyze data and develop an optimization strategy to reduce energy consumption and equipment wear.



DETECT

The optimized setting and other key factors are programmed in for your building to detect faults going forward.



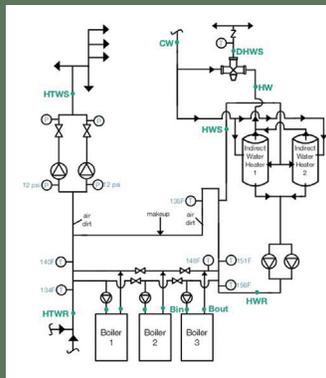
ALERT

The programmed intelligence will provide early warning of emerging problems to enable the right action.



Our engineers document your equipment and systems, and devise the monitoring plan.

We build, configure and install your Remote Monitoring system, keeping a watchful eye on your boiler room.



To learn more, visit <http://www.newecology.org/what-is-remote-monitoring-optimization-remo/>