

# Oh no, a leak!

## How Tehama Wireless' Submetering Sensors Pinpoint Problems, Avert Disaster

### Customer:

Fair Energy Submetering, LLC  
James Dunn Headquarters: Niwot, CO  
Service Area: Continental US

Fair Energy Submetering helps building owners and property managers across the US track and bill utilities used on their properties. The company installs utility submetering systems that enable their clients to divide bills for water, gas, and electricity according to tenant consumption. To support its clients, Fair Energy needs robust hardware and high-quality data. James Dunn, founder and CEO, had been looking for more sophisticated technology for several years. Although the transmitters he had been using provided basic data for most properties, he was looking for a more robust system and a broader range of options. For example, the old system provided daily utility use readouts, but Dunn needed more detailed information to troubleshoot problems.

"The submetering system we'd been using was just too limited," Dunn said. "Property managers come to me because they need help, and when a customer gets a water bill that's four times its usual size, I need detail. Daily readouts and obsolete sensors just don't do it.

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## Finding the Right Fit: Technically Sound and Custom Solutions

### Challenge:

Submetering and utility billing companies need detailed, accurate data to troubleshoot problems and fairly allocate utility bills

In addition, transmitters send their data over radio waves, and in some cases the layout of the property had gotten in the way of installing effectively. "I have a building that's 50 stories tall," Dunn said, "and it was a challenge to figure out how to get radio through 50 stories of building."

Dunn was also looking for a more durable product. The covers of the meters he had been using were held on by a piece of tape, which dried out after about six months leaving the radios dangling. "It's not a good look," he noted.

## Results:

- Increased data precision helps troubleshoot utility problems, pinpoint leaks, avert disasters
- Line-powered and battery options make maintenance easy
- Responsive customer service makes it possible to create custom solutions

## Configurable Sensors Lower Utility Use, Save Building

Fair Energy needed high quality data to troubleshoot its customers' problems. Here's where Tehama had an edge: its original sensors were installed in hospitals, where standards are extraordinarily high. Tehama put that expertise to use.

Formerly, Dunn and his team had to rely on daily data collection. Tehama's sensors, on the other hand, are configurable, and Dunn was able to connect the data he needed hourly. Each data point is automatically labeled with a date and time, so interpretation is simple. "This is the kind of detailed reporting I need to pinpoint problems," Dunn says.

When a tenant uses more water, for example, data might show spikes in use during daytime hours. Data from a leak would look more even, and continue throughout the night. In an unoccupied building, a sudden increase in utility use highlights a potential problem. In one mobile home park, for example, hourly data identified leaks in five of the units over a period of a year.

Detailed data allowed Fair Energy to detect and locate a gas leak in a newly constructed, nine-story building in downtown Denver. The building was still empty, but Tehama's sensors showed one apartment suddenly using gas at a rate of 1,100 cubic feet per hour. Knowing when the leak started allowed Dunn to figure out how it happened, and the building was saved. "We averted a major catastrophe," he said. "That's an impressive thing for Tehama."

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## Smart Sensors Monitor Themselves

Fair Energy, data quality is as important as frequency. Their old product was a "dumb transmitter," which meant data was broadcast from the sensor. If the receiver wasn't working, or the signal was weak, data was lost.

Tehama sensors, on the other hand, are smart. They are in constant two-way communication with the receivers. Every time a sensor sends data, it waits for a response. Sensors resend data until a response arrives. "It was obvious from the start that Tehama had a better product," explained Dunn.

If a sensor fails, Fair Energy is notified and can address the problem immediately. Tehama's smart sensors can also evaluate the quality of the connection. When a signal is weak, this feedback allows Dunn to immediately make an adjustment.

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## Solution:

Tehama Wireless transmitters provide detailed data and sensors for multiple meter types, environments, and building layouts

# Complex Property Requirements Handled with Innovation and Flexibility

Fair Energy works with multi-tenant properties such as commercial sites, mobile home parks, apartment buildings, and condominiums. Different property types come with different technical challenges, so it's important to have a variety of products to choose from.

When Dunn teamed up with Tehama, he found the broad line of equipment he was looking for. In some situations, sensors count pulses from water, gas, and electric meters. At other times they read the face of the meter directly. Tehama supports two lines of sensors, one for each situation.

Tehama was also willing to work with Fair Energy on custom solutions. "If it didn't exist already, Tehama was open to creating it," Dunn said. "Every time we wanted something a little different, they built exactly what we needed."

Fair Energy's old sensors used batteries, but not every property has a maintenance crew available to replace them. Dunn wondered if Tehama would build a line-powered to eliminate that process, and Tehama designed it. And when Fair Energy needed outdoor, waterproof sensors for some commercial properties, Tehama responded by custom building a submersible sensor.

Tehama provides repeaters to cover large sites or route signals around obstacles (such as other buildings), and makes solar-powered repeaters to stay on during power outages or in places where getting electricity is impractical.

# Ease of Use Plus Responsive Customer Service

Fair Energy needed systems that are easy to install and simple to use, because ease of use lowers maintenance costs. Their old systems used phone lines to transmit data, while Tehama's systems access the internet directly.

And when Fair Energy staff have questions, Tehama has highly trained staff ready to provide support. Not only does Tehama offer a comprehensive library of web-based documents and YouTube tutorials, but they also provide knowledgeable staff who can troubleshoot utility data and network health quickly - - generally while a field technician is still at the property. And when customers need something a little outside the box, Tehama is willing to innovate.

"I know Tehama, I know everybody there," says Dunn. They're flexible, they're always listening, and they'll work with me. If I need something because of the way a property is laid out, they'll create a custom solution."

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