ADVANCED METER/AMI FAQ

What are "Advanced Meters"?

"Advanced Meters" are solid state electrical meters that utilities install to collect and transmit metering information back to its office. These replace the analog type meters which were limited to just displaying the total usage and required the utility to visit each meter monthly to manually read the meter.

Advanced Metering Infrastructure (AMI) … What is it?

The name sounds complicated, but Owen Electric's AMI system produces a variety of benefits, including better customer service, improved reliability and greater operational efficiency.

How does my automated meter work?

With AMI meters, Owen can read the meter remotely from our central office. Information from the meter is transmitted back to the co-op. Transmitting this information electronically means that a meter reader no longer visits your home to manually read the meter monthly.

What data is collected by the meter?

The meter records the following information:

- Total kWh usage. This may also be divided into different groups if the member is on one of OEC's Time of Day rates.
- KW values for each hour.
- Minimum and maximum voltage levels.
- Blink counts.
- Last six outage events including start time and duration.

How often does my meter "transmit" information?

On average, the meter will transmit meter data five times a month. Each transmission will last an average of two to three seconds.

How secure is the meter data?

Owen considers member information security a top priority. The data transmitted through the AMI system to and from the meter is encrypted using a special proprietary technique. We continue to monitor and test for security threats. None of your account information is included.

Are "advanced meters" accurate?

These meters follow multiple accuracy standards testing both by the manufacturers and the utilities. In addition, the Kentucky Public Service Commission requires sample testing each year on a defined amount of the installed meters. Billing exception reports and validation routines on the readings are also performed daily to ensure accuracy.

How does the AMI system work?

To perform a meter read an Owen employee sends a command to AMI equipment in the substation via the Wide Area Network (WAN). The AMI equipment generates a Power Line Carrier (PLC) signal which is induced onto the distribution power lines. This signal "rides" along the sine waves of the lines through the system, transformer, and to the meter. The meter contains a transmitter which hears the information requested then sends that information back to the substation AMI equipment. Again, this signal is sent via PLC signal across the power lines. The substation equipment then sends the information back to the employee via the WAN. This entire process takes an average of 4-6 seconds.

What are the specific benefits of AMI?

Here are just a few of the benefits made available through AMI technology:

- Improves electric service reliability and power quality – fewer outages, blinks and surges.
- Allows more respect for member privacy and property access – With this new system, the only time Owen will need to physically be at your meter is if there is an electric service problem or when we perform the annual inspection of your electric service.
- Improves outage notification and management process by more quickly pinpointing the exact location of outages, meaning a faster response time.
- Provides additional metering data to better assist members with billing and service questions.
- Gives capability to provide members with valuable usage information such as consumption patterns, outage and blink count history and voltage information.
- Improves meter reading accuracy and consistent billing periods – With an AMI system, meters can be automatically set to read the meters on the same day of each month. This, for example, eliminates a 27-day billing period one month and then a 35-day billing period the following month.
- Reduces losses by identifying power theft.
- Gain efficiencies by eliminating the labor and transportation costs of in-person meter reading .
- Ensures better overall safety for Owen employees.
- Promotes energy efficiency by enabling innovative pricing, appliance control and real-time customer feedback.

Will cooperative employees need to come to read the meter manually again once the new meter is in place?

Owen employees will no longer regularly need to spend valuable time traveling to every meter for a monthly read. All meter reads will be digitally transmitted back to the co-op headquarters.

Once co-op employees no longer need to read the meter, can obstacles be constructed that may make the meter inaccessible?

No. Reasonable access to equipment still must be maintained. This allows for Cooperative personnel to either read or maintain the meter if necessary at reasonable times. Routine inspections of all meters and services will continue in order to look for safety hazards, theft or other problems.

Will the new meter notify the co-op when the power goes out?

No, however, the AMI system will enhance the Cooperative's ability to pinpoint outage locations and verify service restoration.

Can you monitor the activity within my home with my meter?

No, Owen's meter has no surveillance capability. The meter simply measures electric energy usage as the previous electro-mechanical meter did. Individual devices within the home cannot be monitored with the meter.

Are there any potential health impacts from a meter that can receive and send data?

The Federal Communications Commission (FCC) has adopted and used recognized safety guidelines for evaluating RF environmental exposure since 1985. Federal health and safety agencies such as the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), the National Institute for Occupational Safety and Health (NIOSH), and the Occupational Safety and Health Administration (OSHA) have also been actively involved in monitoring and investigating issues for RF exposure. In 1996, the FCC adopted the National Council on Radiation Protection (NCRP's) recommended Maximum Permissible Exposure limits for RF exposure. The FCC also adopted the specific absorption rate (SAR) limits for devices operating within close proximity to the body as specified within the American National Standards Institute (ANSI)/Institute of Electrical and Electronics Engineers (IEEE) guidelines.

There has been considerable research* conducted on the health impacts of RF exposure levels from advanced (or 'smart') meters. This research has demonstrated that there is no health threat from RF exposure levels below those designated by the FCC.

***California Council on Science and Technology:** "Wireless smart meters, when installed and maintained properly, result in much smaller radio frequency (RF) exposure than many existing common household electronic devices"

"The current FCC standard provides an adequate factor of safety against known thermally induced health impacts of existing common household electronic devices and smart meters"

***Maine Center for Disease Control:** concluded there is "no consistent or convincing evidence to support a concern for health effects related to the use of radio frequency in the range frequencies and power used by smart meters"

Additionally, Owen's AMI/Advanced Meter system has some unique characteristics that further mitigate health concerns:

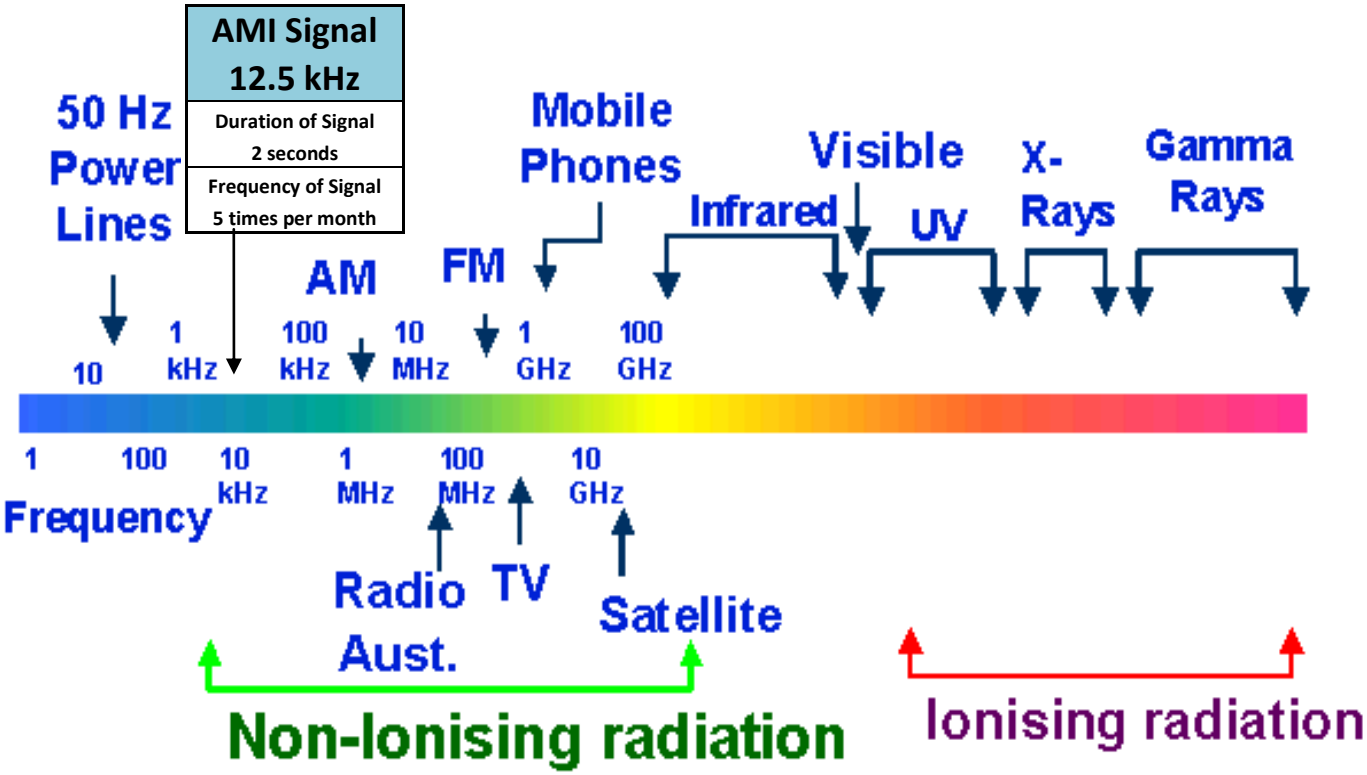
Owen's system is not radio frequency or wireless-based like many other systems. Owen's communication signal travels over the electric power line and is not transmitted through the open air.

A common misconception about smart meters is that they are always "on" or transmitting 100% of the time. This is far from the case. In fact, **Owen's typically meter transmits only five (5) times per month for approximately two (2) seconds per transmission**. This equates to only ten (10) seconds per month or 0.0004% of the time.

In summary, **Owen's meter system meets and exceeds all Federal Communications Commission (FCC) regulations regarding acceptable ranges of RF exposure limits.**

Owen's AMI system operates at an extremely low frequency of 12.5 kHz. A kHz (kilohertz) is a relatively low unit of frequency. Most radio frequency based smart meters operate in the 900+ mHz (megahertz) frequency range which is approximately 72,000 times greater than Owen's system. Additionally, many commonly used household devices operate at much higher frequency levels (see following chart).

Public Safety Communication Spectrum Table* (OEC's AMI Device Added)



*Source: ACD Telecom, LLC & Public Safety Communications

ACD Telecom, LLC specializes in public safety communications and consulting services to public safety agencies.

If you have additional questions, feel free to contact Owen Electric at 1-800-372-7612.