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FIGHTING WATER SCARCITY – HOW UTILITIES CAN STEP IN

Water, the world's most precious, finite resource, is becoming increasingly scarce around the world. Things such as natural disasters, increased food production and growing energy requirements cause massive disruptions to water systems and supplies. According to UNICEF, half of the world's population could be living in areas experiencing severe water scarcity by 2025, and by 2030, around 700 million people globally could be displaced due to a lack of water. The issue of water scarcity is accelerating, and it is up to all stakeholders, including utilities, to do what they can to alleviate the demand.

Water utilities have traditionally implemented inefficient approaches to combating water scarcity, such as manual surveillance of miles of pipes to "listen" for leaks, but these methods are no longer sufficient. Utilities need to embrace technology, like advanced metering infrastructure (AMI), to boost conservation efforts and reduce water loss.

The Environmental Protection Agency (EPA) estimates that 10% of homes in the U.S. at any given time have leaks that amount to 90 gallons of water or more every day. The leaks in an average household amount to nearly 10,000 gallons of wasted water every year. Globally, one third of the water within the distribution system is lost prior to reaching its destination. Modern systems that leverage technology like AMI can immensely decrease the vast amount of water lost.

In lieu of the time consuming, manual methods of inspecting pipes for leaks, utilities can deploy pressure and leak detecting sensors and monitoring solutions. These modernized systems can save enormous amounts of water; in California alone, 97.4 billion gallons of water are lost per year due to leaks or asset failures. Utilizing pressure and leak-detecting solutions, 27 billion gallons of this lost water can be economically recovered.

These solutions allow for real-time, unprecedented visibility into water distribution networks. The ability to immediately and accurately detect leaks can eliminate non-revenue water (NRW), which refers to the water lost through things like leaks before it reaches the customer. These leaks can be remediated and targeted through technology that leverages leak detection, which uses spatial analysis of flow, pressure and consumption level to monitor water networks. Pressure-reducing values (PRV) manage pressure within the pipe to diminish losses near the leak while ensuring that there is otherwise adequate pressure for customers.

There are specific sensors that a utility can deploy to listen for leaks within the distribution system of a water network. These sensors reduce NRW losses and can prevent catastrophic main breaks. Additionally, the visibility they provide to organizations shows the near real-time usage of water throughout the network so that abnormally high flow rates and other statistical anomalies can be monitored.

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AMI allows utilities to gain insights into usage patterns, detect leaks, identify areas of high demand and implement strategies to optimize water distribution. This proactive approach enables utilities to ultimately reduce the amount of water lost, contributing to water conservation and sustainability efforts.

Unidentified and unresolved leaks go unrepaired for longer when traditional leak detection and repair methods are used, resulting in prolonged water loss. The adoption of technology-driven solutions like AMI or leak detection systems is crucial to addressing the global water crisis. By enhancing water utilities' efficiency and effectiveness, water loss is minimized, resources are conserved and the fight toward a sustainable water supply for current and future generations continues. The combination of innovative technologies, real-time monitoring and targeted interventions empowers utilities to make significant strides in water conservation and management.