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## Optimum Energy Receives Patents for Technologies That Make Smart Buildings Even Smarter

### Controlled Hydronic Distribution System and Intelligent Equipment Sequencing harness the power of cloud computing, machine learning and IoT connectivity for HVAC optimization

SEATTLE, August 14, 2018—[Optimum Energy](http://Optimum Energy) has been awarded two patents for technologies that allow building owners to harness the full benefits of HVAC optimization and boost cost, water and energy savings using cloud computing, machine learning and Internet of Things (IoT) connectivity.

The **Controlled Hydronic Distribution System** connects smart valves—which are increasingly common in HVAC systems—to gather granular data about components such as pumps, boilers and chillers and communicate to a controller to make better efficiency decisions. **Intelligent Equipment Sequencing** brings the power of machine learning to chiller plant control, enabling systems to always operate at top efficiency.

“These patents put us in a unique position to use the power of the cloud for processing algorithms, and to bring IoT communications and control to plant components,” said Ian Dempster, senior director of product innovation. “They build on and greatly expand our technology and capabilities.”

Larry Stapleton, president of Optimum Energy, said the two technologies will give customers even greater savings and efficiency. “We want plant operators to be able to future-proof their facilities, so we’re always looking for ways to improve our solutions with advanced technologies. And that always gives customers ways to squeeze more value out of optimization.”

#### Controlled Hydronic Distribution System

The **Controlled Hydronic Distribution System** augments the sensor capabilities of smart valves by networking them so they can share temperature, valve position and other information with a microprocessor or other type of controller. Controlling the pumps to operate at the most efficient speed—while maintaining correct fluid flow throughout the system—reduces a chiller plant’s overall energy use, lengthens equipment life and increases system efficiency.

Controlled Hydronic Distribution works on water-cooled and air-cooled chillers, as well as boiler systems. It can be used as a stand-alone technology in place of a building automation system (BAS) or in conjunction with Optimum Energy’s OptimumLOOP® chiller optimization software and OptiCx® platform.

#### Intelligent Equipment Sequencing

Intelligent Equipment Sequencing greatly enhances Optimum Energy’s ability to help HVAC equipment, such as chillers and pumps, adapt and respond to changing conditions in real time. The technology analyzes plant and external data (such as the weather) in the cloud, which provides the power needed to learn how the equipment performs in a variety of conditions and to build a unique efficiency model. The technology then determines which unit will be the most efficient in future conditions based on predictive analytics.

Currently, Intelligent Equipment Sequencing powers Optimum Energy's Dynamic Sequencing module, used in conjunction with OptimumLOOP chiller optimization. The module can deliver 5 to 7 percent greater energy savings above typical optimization and help identify and correct problems.

Together, the two new patents bring Optimum Energy's portfolio to a total of 15 U.S. patents and dozens more internationally, a reflection of the company's ongoing commitment to inventing new and useful technologies.

### **About Optimum Energy**

[Optimum Energy](#) enables campuses, hospitals, pharmaceutical plants, high-tech manufacturing facilities, data centers and other commercial buildings to cut energy costs and meet sustainability goals by optimizing HVAC systems, the largest consumer of energy in buildings. The company's cloud-based OptiCx® platform and its associated modules reduce an HVAC system's energy usage and resulting costs by up to 50 percent. The technology also reduces water use in chiller plants, tracks and reports on savings, provides detailed insights into building system operations, and efficiently scales across entire building portfolios. Optimum Energy technology has enabled current customers to save over 957 million kilowatt-hours of electricity, reduce carbon emissions by nearly 608,000 metric tons and save over 200 million gallons of water.

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