



Avista's Eco-District: Sharing energy and information

Avista is re-imagining the future of energy.

This includes how utilities can partner with building owners and operators to use the electric grid more efficiently.

What started with a vision by Avista Chairman Scott Morris to create the five smartest blocks in the world has resulted in one of the most sustainable buildings in North America—the Catalyst Building—and the adjacent Scott Morris Center for Energy Innovation.

Both buildings have been designed from the ground up to test an innovative shared energy model called an eco-district: a centralized heating, cooling, and electrical system that serves the energy needs of an entire group of buildings.

The central plant in the Morris Center is the heart of the eco-district. It will also serve as a living laboratory where some of the brightest minds in the energy sector can come together to test ideas, gain insights and refine solutions for a more reliable, sustainable and resilient grid.

One of the first innovations Avista will test in this living laboratory is the Eco-District Building to Grid Valuation project. The multi-year, \$7 million project is being funded by a \$2.5 million grant from the Washington Department of Commerce's Clean Energy Fund and \$4.5 million matching funds from Avista.

Avista's eco-district is an innovative shared energy model that uses a centralized heating, cooling, and electrical system to serve the energy needs of multiple buildings.



Scott Morris Center for Energy Innovation

Partnering with building operators

From their inception, both the Catalyst and Morris Center were designed with innovative systems in mind. In addition to the central plant, they have on-site solar panels, battery storage, thermal storage, and thousands of sensors installed throughout the buildings to track ambient conditions, air quality, occupancy and other attributes in real-time. Through this project, Avista will integrate a capability to orchestrate the building management system and renewable resources to provide more flexibility in how the building can be operated.

All this technology lets the building operators share information with Avista about its energy needs. At the same time, Avista can provide information to building operators about grid operations such as when the demand for energy is at its highest.



Grid friendly and flexible

During the project, Avista will explore whether incentives can be provided to encourage building operators to pull different levers to actively manage energy loads and balance on-site energy demand, generation and storage in real-time, in a “grid-friendly” manner that reduces the impact on the grid and provides flexibility for both the building operators and the utility.

Avista will simulate different scenarios to actively manage energy to maximize the efficiency of the building, its operations, along with when and how to best utilize the grid—all while keeping the building’s occupants comfortable. It’s a win-win-win.

What we learn could not only shape how the grid of the future will operate, but also provide a transformative new model for the entire utility industry.

“Typically the utility focuses on providing energy. And building operators focus on efficiently operating their facilities. **But if we work together to operate buildings in a more grid-friendly manner, we can better utilize the existing grid and delay costly construction of the next substation to meet energy demand. Ultimately, this makes energy more affordable for everyone.**”

Heather Rosentrater, Avista Senior Vice President of Energy Delivery

Project Partners Include: *Commonwealth Associates, McKinstry, Pacific Northwest National Laboratory, POWER Engineers, Urbanova, Washington State Department of Commerce, Washington State University*

TIMELINE

2020	Design systems, install equipment and thermal storage
2021	Install battery storage and building control systems
2022	Test various use cases



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