



Efficiency Works™

Estes Park  
Power and  
Communications

Fort Collins  
Utilities

Longmont  
Power &  
Communications

Loveland  
Water and Power

Platte River  
Power Authority

# Complex studies, simple savings

In 2023, **Broadcom**, a manufacturing facility in Fort Collins, optimized their chiller plant and implemented duct static pressure and temperature resets. Broadcom identified these optimizations and developed a deeper understanding of their facility's HVAC systems through an Efficiency Works Retrocommissioning (RCx) study. By participating in the BTU (Building Tune-up) program, the cost of the RCx study was fully offset by Efficiency Works incentives. Additionally, Broadcom saved nearly \$50,000 annually on future energy costs.

## Project highlights



**619,322**  
kWh saved  
annually



**\$49,500**  
Efficiency Works  
incentives



**\$49,546**  
annual cost  
savings



“Efficiency Works makes the process of saving energy and money simple and painless. We’re anxious to start our next energy conservation project with them.”

Steve Nyman, P.E.  
Senior Manager, Workplace Services  
Broadcom Inc. Semiconductor Manufacturing Company

To see how your business can save,  
connect with an Efficiency Works service provider or visit  
[efficiencyworks.org/business/building-tune-up](https://efficiencyworks.org/business/building-tune-up).

## Project summary

- Completed a \$39,500 comprehensive RCx study covering **more than 1.2 million square feet**, offset by Efficiency Works incentives that covered the cost.
- **Improved the buildings' cooling system** by reprogramming the supply fans, which eliminated unnecessary heating and cooling.
- **Programmed and improved the chilled water reset system** of the chiller plant, improving cooling efficiency based on demand.
- **Implemented a dynamic duct static pressure reset** and supply air temperature reset based on damper positions and cooling demand, resulting in improved efficiency.
- **Completed energy conservation measures within one year** of the application preapproval date, which made Broadcom eligible for the Efficiency Works **timely implementation bonus incentive**. This incentive, totaling \$10,000, was applied to Broadcom's implementation costs, as identified through the RCx study.

## Measure details

Facility improvement measure	Simple payback period	Annual therm savings	Annual kW savings	Annual kWh savings	Annual energy cost savings	Implementation cost
Chiller plant optimization	0.8	41,496	34.3	300,563	\$22,362	\$17,600
Chillers, supply fans and temperature reset	2.1	0	10.3	89,988	\$4,765	\$10,120
Supply fans, duct static pressure and temperature reset	0.3	0	26.1	228,771	\$22,419	\$7,480
<b>Project Totals</b>	<b>0.71</b>	<b>41,496</b>	<b>71</b>	<b>619,322</b>	<b>\$49,546</b>	<b>\$35,200</b>

## Additional benefits

In addition to reducing their annual energy costs, Broadcom:

- Moved closer to reaching their Energy Performance Standards goal through Colorado's Energy Performance for Buildings law. Reduced their Energy Usage Intensity (EUI) score.
- Increased their equipment's life expectancy.
- Received in-depth study of their system's design and usage, leading to increased Building Automation System (BAS) understanding.
- Reduced their environmental impact by decreasing their gas and electric usage.
- Considering future RCx studies within other areas of their facility due to their complexity and size.
- Received recommendations for future energy efficiency improvements from the service provider, Siemens, as part of the RCx study.

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