RCx for Pharmaceutical Manufacturing

How NJ Pharma Facilities Are Cutting HVAC Energy Costs by 10-30%

Pharmaceutical manufacturing environments are among the most energy-intensive facilities in the industrial sector.

Strict environmental requirements — including temperature control, humidity control, air change rates, filtration, and pressurization — drive significant HVAC and utility costs.

However, many facilities are operating with inefficient control strategies that quietly increase energy consumption year after year.

The good news: many of these inefficiencies can be corrected through Retro-Commissioning (RCx) — often with utility incentives available through the PSE&G RCx Program.

Common Inefficiencies Found In Pharma Facilities

Many pharmaceutical plants accumulate inefficiencies over time due to system changes, expansions, and evolving production requirements.

Typical issues include:

- Simultaneous heating and cooling in air handlers
- Static pressure settings higher than necessary
- Fans operating at constant speed instead of variable speed
- HVAC schedules that no longer match production patterns
- Inefficient chilled water and hot water reset strategies
- Limited visibility into system performance through the BMS

These issues often increase energy use without improving environmental control.

What is Retro-Commissioning (RCx)?

Retro-Commissioning is a systematic process for improving the performance of existing building systems.

Rather than replacing equipment, RCx focuses on:

- Optimizing control sequences
- Improving system coordination
- Eliminating inefficiencies in HVAC operation
- Upgrading building automation logic

For pharmaceutical facilities, this means reducing energy consumption while maintaining validated environmental conditions.

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Improvements That Often Qualify for PSE&G RCx Incentives

Common eligible improvements include:

- AHU control optimization
- Variable frequency drives (fans & pumps)
- Supply air & chilled water reset strategies
- Cleanroom airflow & pressurization optimization
- Demand-based ventilation
- BMS upgrades & integration

Most projects focus on control optimization—not equipment replacement—keeping costs low and ROI strong.

Typical Results from RCx Projects

Facilities that implement RCx improvements often achieve:

- 10–30% reduction in HVAC energy consumption
- Lower operating costs
- Improved system visibility and monitoring
- Better coordination between HVAC systems
- Continued compliance with pharmaceutical environmental requirements

Because many improvements involve control optimization, projects frequently deliver strong ROI with relatively low capital investment.

Case Study | BeiGene

Large-scale, multi-building GMP environments

- Supported 6-building campus including drug substance, drug product, labs, and warehouse
- Integrated control across 29 AHUs + full utility systems (chillers, boilers, cooling towers, pumps)
- Implemented end-to-end BAS + utility controls (design → install → startup)
- Managed complex systems including gas detection, chemical skids, steam/chilled water distribution
- Enabled coordinated system performance across critical GMP environments
- Why it matters: Proven ability to optimize and manage highly complex, regulated HVAC environments at scale

How InflexionPoint Supports Pharmaceutical Facilities

We help pharma facilities identify RCx opportunities, optimize building automation systems, and improve control strategies—while aligning with regulatory requirements and capturing available incentives.

Many plants are surprised how much energy can be saved through control optimization alone.

Schedule a short intro to learn more.

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