



Nonchemical Prevention of Hard Water Scale

What is this Technology?

This technology is designed to reduce wastewater associated with typical scale prevention equipment and to reduce operation and maintenance costs associated with scale prevention, especially where water is untreated or insufficiently treated. The process does not use chemicals, power, or additional water.

Why is GSA Interested?

This technology has the potential to conserve water while reducing energy and maintenance costs in GSA facilities with central hydronic heating and/or cooling plants.



ENERGY AND WATER EFFICIENCY According to the manufacturer, implementation of this technology in buildings that require water softening systems saves significant amounts of energy, water, and chemicals over incumbent technologies. The level of savings will depend on the existing water softening process and the characteristics of the system in which it is installed.



COST EFFECTIVENESS A key component of this project is to define the variables, including the water volume used, water softening systems in place, and local water costs and conditions, needed to prioritize investment in this technology, should it prove effective.



OPERATIONS & MAINTENANCE For buildings without water softening systems, the primary benefit of this technology is a reduction in maintenance costs associated with the removal of scale deposit. Manufacturer's case studies indicate that implementation of the technology typically reduces such maintenance costs by 50% or more.



DEPLOYMENT POTENTIAL This technology is appropriate for buildings in locations with hard water and central plant heating or cooling equipment. More than 75% of GSA's inventory uses such equipment, many in locations with hard water. This assessment will include guidance needed to prioritize its potential for deployment by GSA, should the technology's performance prove out.

Adapted from a report by the National Renewable Energy Laboratory. The Green Proving Ground program, in association with a federal laboratory, is subjecting this nonchemical prevention of hard water scale technology to real-world measurement and verification in GSA buildings. Findings from that investigation will be available in late 2013 or early 2014.



The Green Proving Ground program leverages GSA's real estate portfolio to evaluate innovative sustainable building technologies. The program aims to drive innovation in environmental performance in federal buildings and help lead market transformation through deployment of new technologies.