

in the **Loop**

SPECIAL
Sustainability Focus



The Hartford Steam Company: 2010 Sustainability Report

Welcome to a special issue of *In the Loop*, The Hartford Steam Company's newsletter. This newsletter features highlights from our recently completed 2010 Sustainability Report.

Sustainability is widely defined as meeting the needs of the present without compromising the ability of future generations to meet their own needs. Within the past five years, sustainability has taken its rightful place on the world stage – and right here in the city of Hartford. It is clear that our collective environmental, economic and social actions will affect future generations.

As a major user of fossil fuel, Hartford Steam realizes it has a special responsibility. We need to use that fuel as efficiently as possible to reduce emissions and stabilize operating costs for our customers.

**Sustainability is not only good business;
it is simply the right thing to do.**

Toward that end, we are committed to a balanced, common sense sustainability initiative – one that enables us to continue to provide high-quality, reliable service to our customers while being mindful of environmental, economic and social impacts. Sustainability is not only good business; it is simply the right thing to do. It means that we will continue to be here well into the future as an economically viable entity.



A handwritten signature in black ink that reads 'Derek H. Rudd'.

Derek H. Rudd
President
The Hartford Steam Company

Putting Sustainability to Work

Hartford Steam's goal is to take advantage of the practical opportunities that exist to save energy and ultimately reduce overall emissions – all while still maintaining an economically competitive and sustainable heating and cooling business.

By aggregating the thermal energy needs of so many downtown buildings, we can continue to realize even greater efficiencies than each building could achieve individually. Hartford Steam is uniquely positioned to mitigate risks and leverage economies of scale efficiencies for the customers we serve, creating an even more sustainable future for the diverse institutions they represent.

If each customer was an emitter on its own – with its own boiler and chiller operations and increased waste streams – there would be a greater overall environmental impact. Together these emitter sites could produce significantly more greenhouse gases than the environmentally responsible district energy system we use right now.

Hartford Steam's sustainability efforts will continue to evolve and grow, year after year.

What We've Done

Sustainability requires a focus on the efficient use of energy. Hartford Steam continuously looks for opportunities to improve the energy efficiency of how we produce our steam and chilled water services. Here are just two examples of recent major equipment upgrades that are helping our Main Plant operate more efficiently than ever:

- We installed a new combined heat and power (CHP) system that recovers heat that would otherwise be wasted from the generation of electricity and puts it to work to heat or cool our customers' buildings. The system, which began operating in November 2009, has a 3.5 MW Solar Centaur gas turbine generator with a heat-recovery steam generator.
- We converted two steam-driven chilled water pumps to variable-speed electric drives and added variable-speed drives to chilled water storage tank pumps and two river water pumps. The two new high-efficiency electric chillers installed in 2006 also have variable-speed drives. These electric chillers have increased system efficiency, lowered fuel costs and reduced



Hartford Steam's Gustavo "Gus" Acuna, plant technician, checks out the readings on one of the new energy-efficient electric chillers installed four years ago at the Main Plant.

emissions. The new chillers replaced a 4,500-ton steam-driven chiller, which now increases our system reliability as a backup unit.

It's clear that improvements like these are making a difference. Figures 1 and 2 show the production efficiencies at our Main Plant since 2006. Particularly notable in Figure 2 is the significant improvement in chilled water production efficiency: In 2006, more than 10,000 Btus were needed to generate one ton of chilled water. By 2009, however, that number had dropped to under 3,000 Btus through use of the high-efficiency electric chillers and the chilled water storage tank.

Figure 1. Steam Production Efficiency - Downtown System (2006 to 2009)

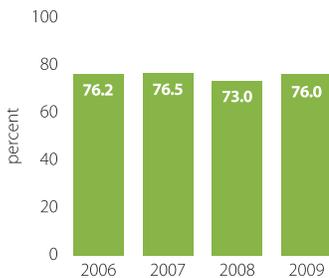
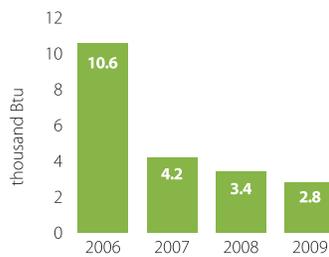


Figure 2. Chilled Water Production Efficiency - Downtown System (2006 to 2009)



Hartford Steam's energy efficiency initiatives benefit the environment too, by enabling us to hold the line on or lower emissions.

Figure 3. Measured Criteria Pollutant Emissions - Downtown System (2006 to 2009)

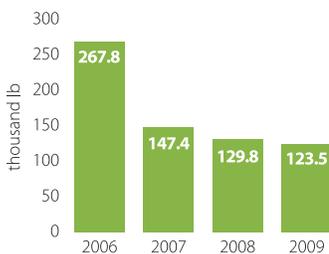


Figure 4. Total Greenhouse Gas Emissions - Downtown System (2006 to 2009)

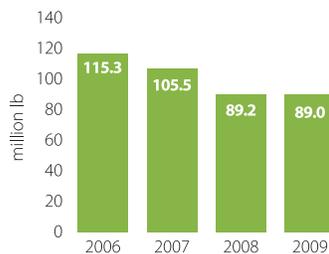


Figure 3 reflects a steady decrease in three criteria pollutants – nitrogen oxides (NO_x), sulfur oxides (SO_x) and carbon monoxide (CO).

As shown in Figure 4, total greenhouse gas emissions (carbon dioxide, NO_x and CO) have also dropped since 2006.

Where We Go From Here

Energy savings contribute to environmental, economic and social sustainability. As a result, a great deal of Hartford Steam's sustainability initiatives relate to saving energy.

Initiatives to be considered include

- continuing to upgrade plant and office lighting and controls;
- conserving chilled water storage tank water by circulating it through the chilled water loop to prevent it from freezing during the winter;
- installing native landscaping that requires zero irrigation;
- working to further reduce the temperature and improve the quality of cooling system water we release to the Connecticut River; and
- increasing the company's recycling rate and instituting further measures to reduce waste.



Chilled Water Storage Tank

In addition to exploring these energy-saving measures, Hartford Steam is also undertaking social initiatives. Our company's social responsibility is part of our ethical code. Corporate social responsibility means that we are aware that the choices we make affect our customers, our employees, our entire community – environmentally, socially and economically – and the company's ultimate sustainability.

Ensuring the health and safety of our employees is a vital component of our social initiatives. It's also good business. Maintaining a healthy, safe environment helps us develop a positive, motivated workforce; increases productivity; and improves retention and recruitment.

Our Corporate Environmental and Safety Manual includes mandatory policies and procedures that safeguard



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In the Loop is a publication of The Hartford Steam Co.
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employees, customers, contractors and the public from accidents and personal injuries. It promotes

- maintaining a zero-injury work place environment,
- continually advancing and updating operational safety standards in response to incident occurrences (lessons learned),
- performing periodic site risk assessment of process activities (per the company's formal Site Risk Assessment Plan), and
- requiring all subcontractors working on company sites to establish safety protocols pertinent to their activities.



Hartford Steam will begin implementing these initiatives and maintain monitoring, record keeping and reporting systems. We will strive to further improve and incorporate sustainable initiatives in all business activities and practices.

Achieving sustainability will always be a work in progress. But Hartford Steam is proud to join the many other organizations worldwide stepping up to the ongoing sustainability challenge and doing the right thing for their customers, employees, communities and future generations.

Cold Weather Has Arrived.

Although we're into the heating season, it doesn't hurt to take a look at our heating and cooling checklist to be sure your building is ready for the even colder weather to come. Check out our tips at www.hartfordsteam.com/seasonal.htm. If you have questions, contact Diane Wojcik at (860) 548-7357.



In this season of giving thanks, we extend a sincere thank-you for your business. It is an honor to serve you.