

Kendall Cogeneration Station

*"Green Steam" lowers carbon footprint
in Boston and Cambridge*



Veolia in Boston & Cambridge

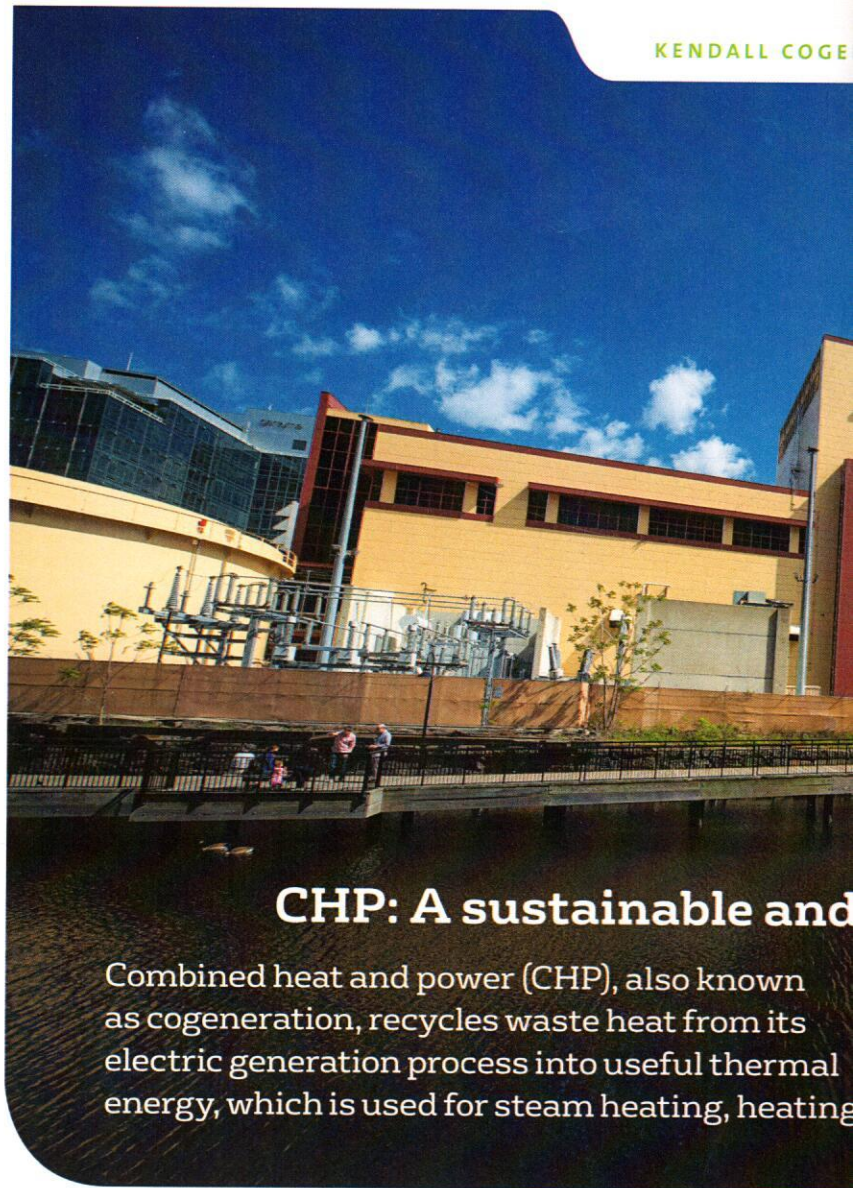
Invisible beneath the streets and bridges above, a labyrinth of steam pipes has silently warmed and cooled Boston and Cambridge's premier medical research institutions, hospitals, commercial buildings and government facilities for more than 80 years. Acquired by Veolia in 2005, this innovative district energy system integrates Combined Heat and Power (CHP) technology with efficient steam infrastructure. With its two steam plants and Kendall Cogeneration Station, Veolia produces electricity for the electric grid and distributes steam within Boston's central business district, the biotechnology corridor of Cambridge and the Longwood Medical Area of Boston.

Veolia by the numbers

- **250** – customers served by Veolia's Boston-Cambridge network
- **679** – employees in Massachusetts
- **44M sq ft** – area of buildings served
- **70%** – percentage of Boston's high-rise buildings served by Veolia
- **1,738** – hospital beds served (comprising all of the large healthcare facilities in Boston)

Kendall Cogeneration Station: Over a half century of reliable energy

Built in 1949, the original cogeneration plant housed power boilers and steam turbines to serve Cambridge's electric distribution system and several industrial facilities. Following economic growth in East Cambridge in the 1960's, the main steam line that runs from Kendall Station through Kendall Square was constructed. With the installation of new equipment in 2001, Kendall Station was transformed into a more energy efficient CHP facility, producing up to 256 megawatts (MW) of electricity and 1.2 million pounds per hour (Mlbs/hr) of steam. Since acquiring the Boston-Cambridge district, Veolia has leveraged a portion of the plant's waste heat, a byproduct of its electricity generation, to supplement its distribution networks with cogenerated "Green Steam." Because Kendall Station's heat production exceeded the existing pipe's capacity, Veolia proposed an innovative environmental solution – constructing a second pipeline to capture the remaining excess thermal energy.



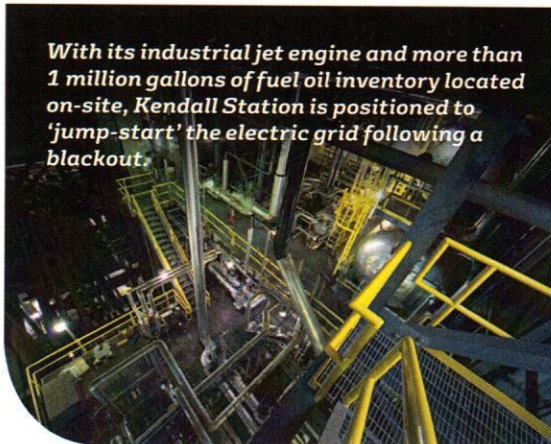
CHP: A sustainable and

Combined heat and power (CHP), also known as cogeneration, recycles waste heat from its electric generation process into useful thermal energy, which is used for steam heating, heating

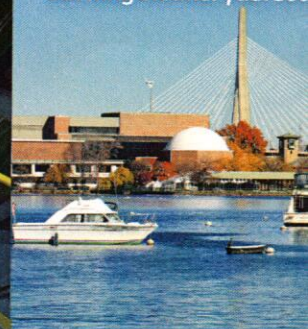
The Boston-Cambridge "Green Steam" system integrates highly efficient CHP technology with a 26-mile network – making it one of the largest and most extensive district energy systems in the United States to generate both electricity and steam.



With its industrial jet engine and more than 1 million gallons of fuel oil inventory located on-site, Kendall Station is positioned to 'jump-start' the electric grid following a blackout.



"Green Steam" eliminates pollution to the Charles by burning cleaner fuel sou

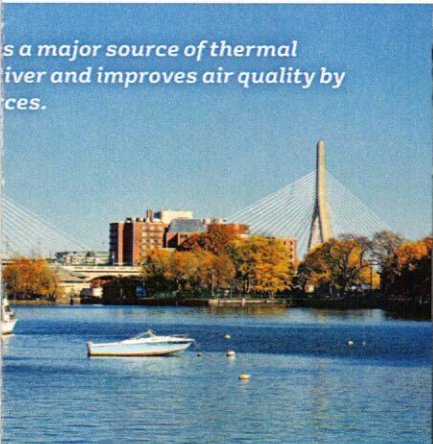




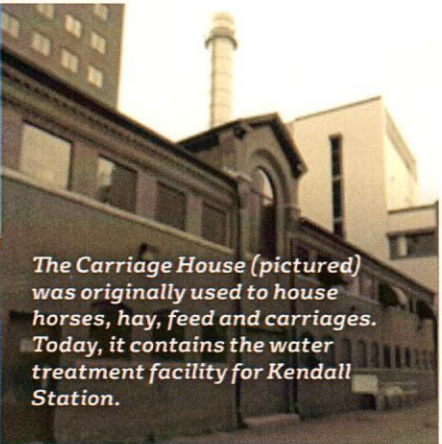
efficient energy solution

water, or powering chillers. The simultaneous production of power and thermal energy consumes less fuel than if produced separately and can achieve up to 90 percent efficiency.

By capturing heat previously lost to environment, "Green Steam" greatly improves overall efficiency and reduces regional GHG emissions by 475,000 tons a year - the equivalent of removing 80,000 cars from the road annually.



is a major source of thermal river and improves air quality by ces.



The Carriage House (pictured) was originally used to house horses, hay, feed and carriages. Today, it contains the water treatment facility for Kendall Station.

Full "Green Steam" ahead in Boston and Cambridge

The \$112 million "Green Steam" project, incorporating the new 7,000-foot pipeline completed in 2013 and the acquisition of Kendall Station in 2014 with partner I-Squared Capital, minimizes environmental impacts and doubles the transport of cogenerated "Green Steam" to Cambridge and Boston metro area customers. By leveraging advanced CHP technology, the natural gas-fired Kendall Station recaptures thermal energy previously lost to the environment. Combined with Veolia's retrofit of Kendall Station, the new pipeline eliminates hot water discharge to the Charles River and integrates the district energy systems serving downtown Boston and East Cambridge. By investing in recent reliability improvements, including upgrading the plant's dual-fuel capabilities, the CHP plant is now able to restore electric service during a grid blackout, while ensuring reliable 24/7 "Green Steam" for customers.

"Green Steam" benefits

475,000 tons

reduction of annual GHG emissions

75%

of district energy heat supply consists of recycled "Green Steam"

80,000 cars

removed from the roads annually (carbon equivalent)

6%

reduction of non-transportation carbon emissions for both cities

147,500 man hours

supported the construction of the "Green Steam" project

61% / 36%

reduction of the region's SO₂ and NO_x emissions, respectively

80% by 2050

"Green Steam" supports Boston and Cambridge's goal to reduce GHG emissions 80% by 2050