

A photograph of an industrial facility, likely a power plant or refinery, situated along a river or canal. The facility features a tall smokestack and several buildings with smoke rising from them. The scene is captured at sunset, with the sky filled with dramatic, colorful clouds. The water in the foreground reflects the sky and the industrial structures. Modern city buildings are visible in the background, creating a juxtaposition of industry and urban development.

MassCEC – MAPC Microgrids June 29, 2016

Veolia Introductions



Scott McBurney

*Vice President Operations – Boston & Cambridge
25 years experience Designing, Building and
Optimizing operations of Combined Heat and Power
Systems*

Patrick Haswell

*Director of Business Development – Greater
Boston/Cambridge area
25 years experience optimizing district energy
customer connections*

Municipal & Commercial Solutions

Veolia delivers essential water, energy, and waste solutions to cities.

World's leading environmental services company

No. 1 largest environmental firm

No. 1 in water partnerships

\$29.6 billion in annual global revenue

180,000 employees

North America

\$2.2 billion in annual revenue

7,900 employees

3 Activities

Energy

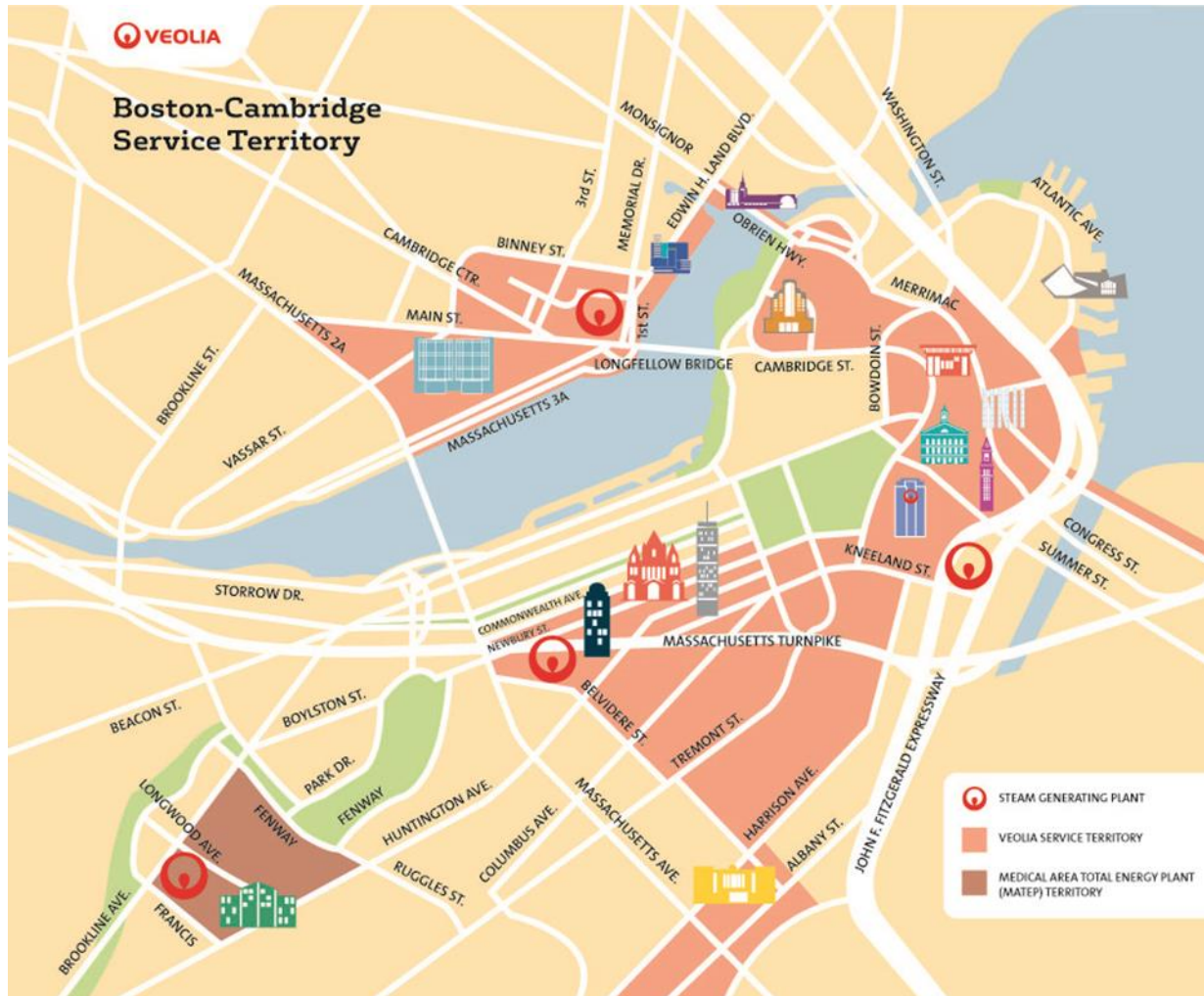
Waste Management and Cleaning

Water and Wastewater



Boston-Cambridge Service Territory

Reliable “Green Steam” avoids 475,000 tons of CO₂ annually



Veolia serves the critical energy requirements of 250 customers in the central business district of Boston, the biotechnology corridor of Cambridge, and the Longwood Medical Area (MATEP):

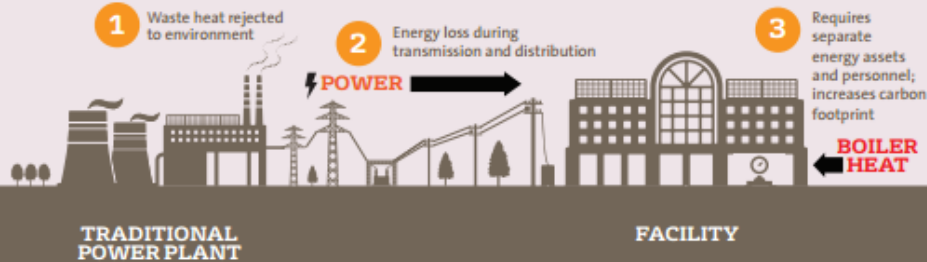
- *World-renowned healthcare facilities; including all large healthcare facilities in Boston*
- *Biotechnology and pharmaceutical leaders*
- *Prestigious office buildings*
- *Several Boston icons and major tourist destinations*
- *Hotels*
- *Universities*
- *70% of the high-rise office buildings in Boston*

ENERGY EFFICIENCY COMPARISONS

35%
EFFICIENT

TRADITIONAL

Separate heat & power (SHP)

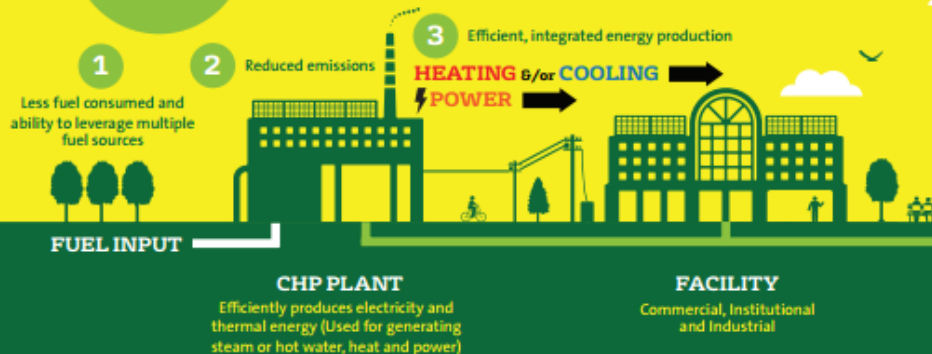


Traditional Efficiency
35%

UP TO
80%
EFFICIENT

CHP [COMBINED HEAT & POWER]

Reliable, sustainable and cost-effective



CHP/Microgrid
80%

CHP is dramatically more efficient, reliable, sustainable and cost-effective

Benefits:

- Less Fuel for useful outputs
- Reduced emissions/Carbon Footprint
- Local Reliability/Resiliency
- Reduces Peak Demand

Microgrid: Reliable energy for critical hospital environments

Boston's MATEP energy plant services 2.4 million outpatients/year



- Veolia acquired MATEP in 2010 with a financial partner and provides energy plant operations & management under a long-term agreement.
- The MATEP total energy plant supplies five Harvard Medical School-affiliated hospitals with electricity, steam and chilled water
 - *Serving more than 12 million square feet of space in 74 buildings*
 - *2.4 million outpatients annually*
 - *117,500 tons of CO2 emissions avoided*
 - *Equivalent of 13,000 homes electric usage in CO2 savings*
- Designed with multiple layers of redundancy so it can operate and remain fully functioning during a power outage--.
- Ensures critical operations at hospitals and research centers served by MATEP can continue without interruption.

Microgrid: Resilient energy for medical research and development



- Leader in biotechnology, research and manufacturing in Cambridge, Mass., required uninterrupted process steam and power
- Comprehensive operation and maintenance of central steam/electricity generation.
 - 5-megawatt (MW) combined heat and power (CHP) plant runs silently in a sub-level below its campus in Cambridge.
 - As part of the services to the firm, Veolia provided energy management and advisory services during development and construction of the plant.
- The Cambridge steam network provides back-up service for the system in which extreme reliability is a process requirement.
- During a recent blackout, the biotech firm was the last light on in Cambridge, Mass. --- a testament to the system's resiliency and independence.

Innovative investment generates significant benefits

Up to 75% of Veolia's heat supply consists of "Green Steam"



Veolia Commitment to Boston and Cambridge

- Boston and Cambridge district energy networks
- MATEP – Longwood Medical CHP
- On-site CHP operation
- Kendall Station
- 240 Employees and growing

Innovative \$112 million investment generates significant benefits for Cambridge and Boston

- Reduces Greenhouse Gas emissions by 475,000 tons annually- the equivalent of removing 80,000 cars from the road
- A 6% reduction in non-transportation carbon emissions for both cities
- Minimizing thermal pollution from the Charles River ecosystem
- Improving air quality, reducing NOx and SO2 emissions by approximately 36% and 61% respectively

Veolia Contacts

- Veolia Can assist with:
 - Design
 - Build
 - Engineering
 - Operation/staffing

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