

“Green Steam” in Boston and Cambridge

Bill DiCroce
President and CEO,
Veolia Energy North America

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Veolia Environnement

The Industry Standard for Environmental Solutions



The only company in the world
able to cover the entire range
of environmental services

(NYSE: VE)

2012 Global
Revenue
\$38.8 billion



The standard for water
management

2012 Revenue
\$15.9 billion



The standard for energy management

800 district energy networks managed
in 35 countries

2012 Revenue
\$10.1 billion

Includes \$0.5 billion
managed revenue in
U.S.

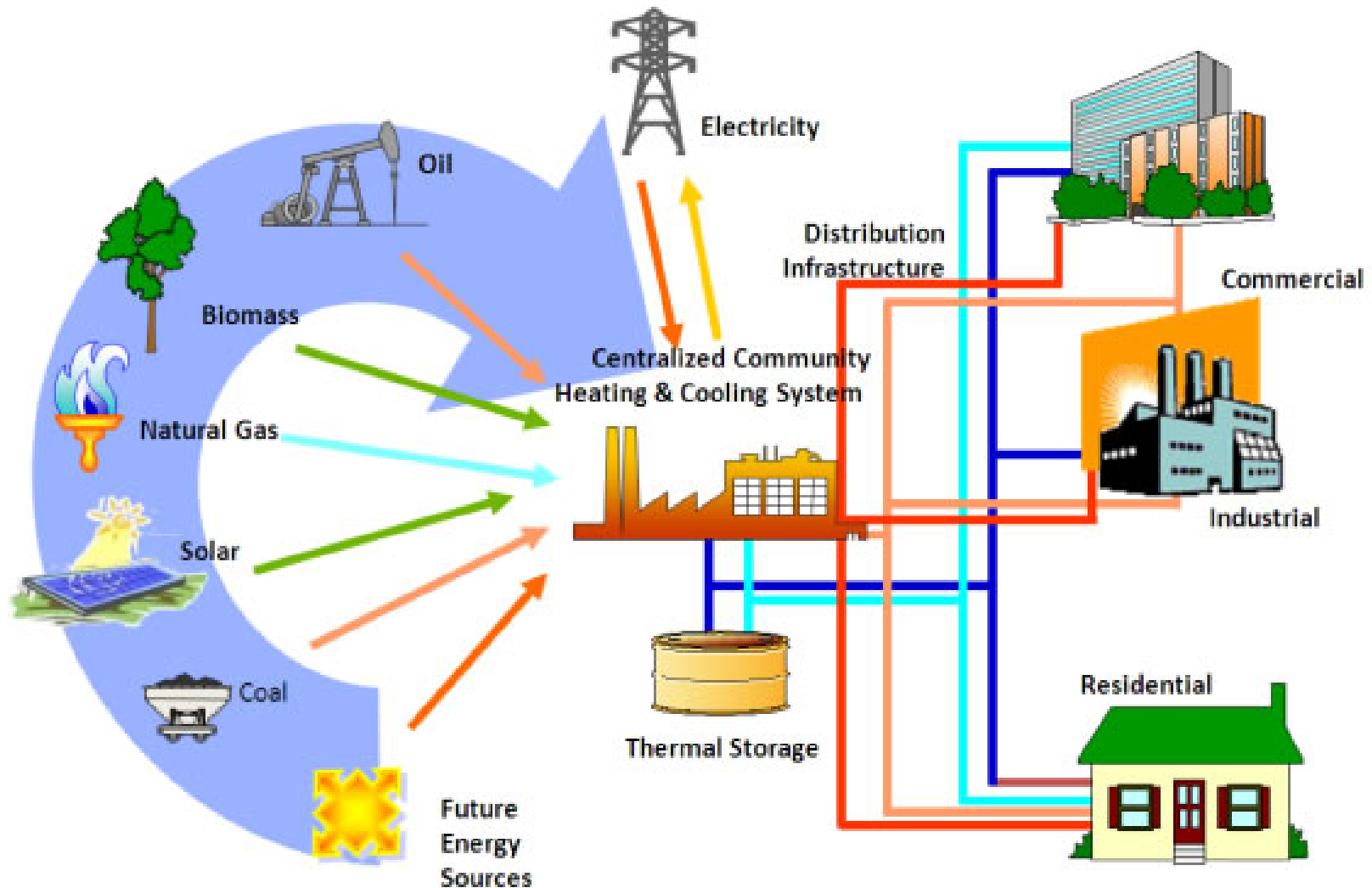


The standard for waste
management and resource recovery

2012 Revenue
\$12.0 billion

District Energy

Centralized Community Heating & Cooling System



District Energy Networks: Largest Portfolio in North America



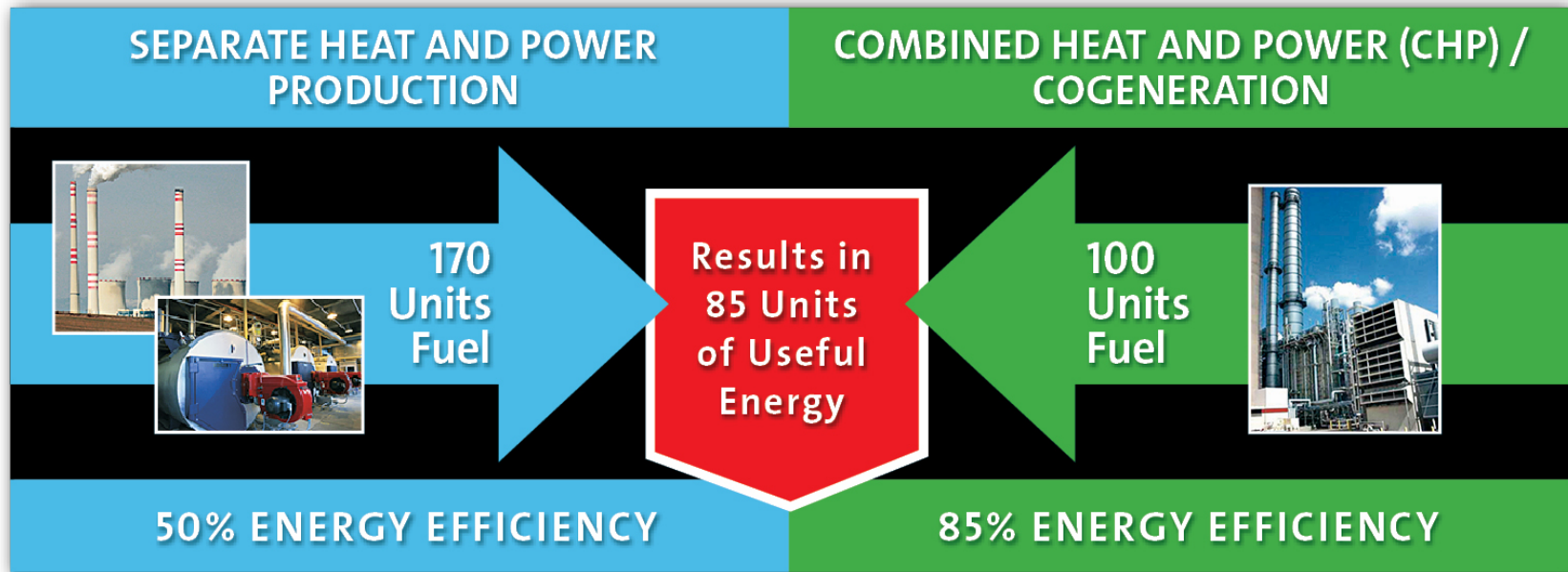
17 District energy networks

9 networks powered by Combined Cooling, Heat and Power (CHP-CCHP) plants



Benefits of Combined, Cooling, Heat & Power (CHP-CCHP)

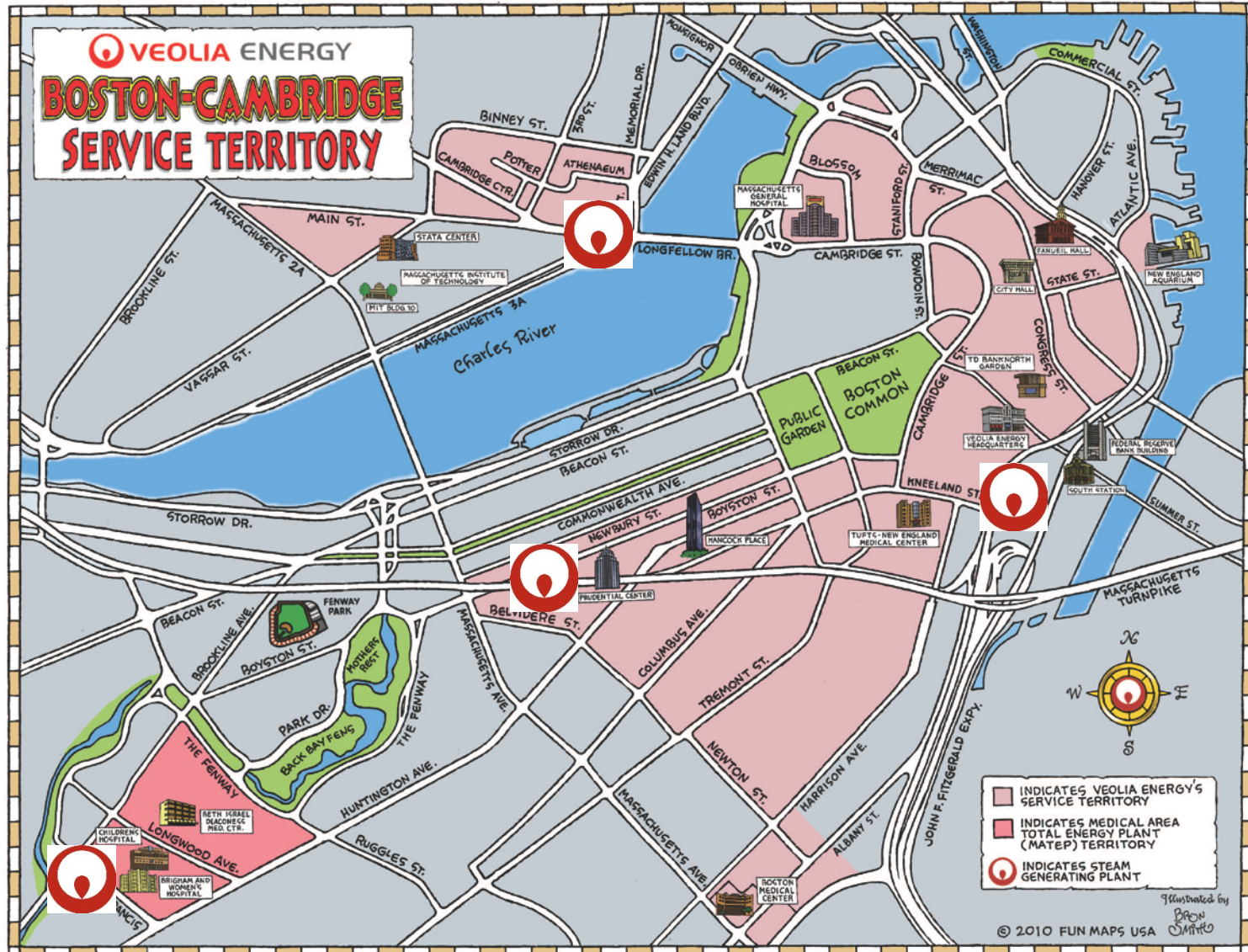
Converts a significantly higher percentage of fuel to useful energy



**Conserves fuel while
producing energy**

Three Veolia Boston-Cambridge District Networks

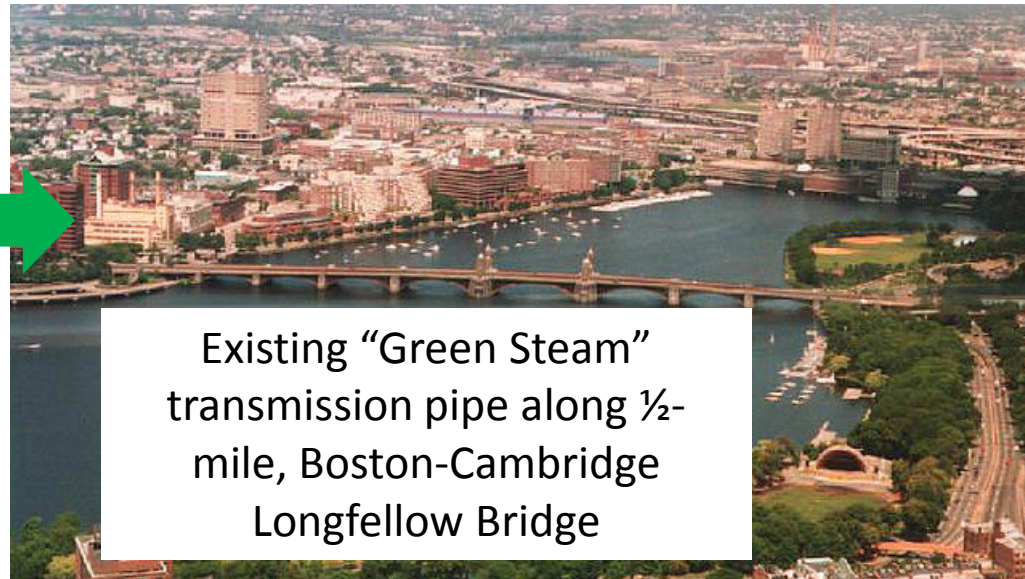
Two Connected Networks, Plus One Standalone Network



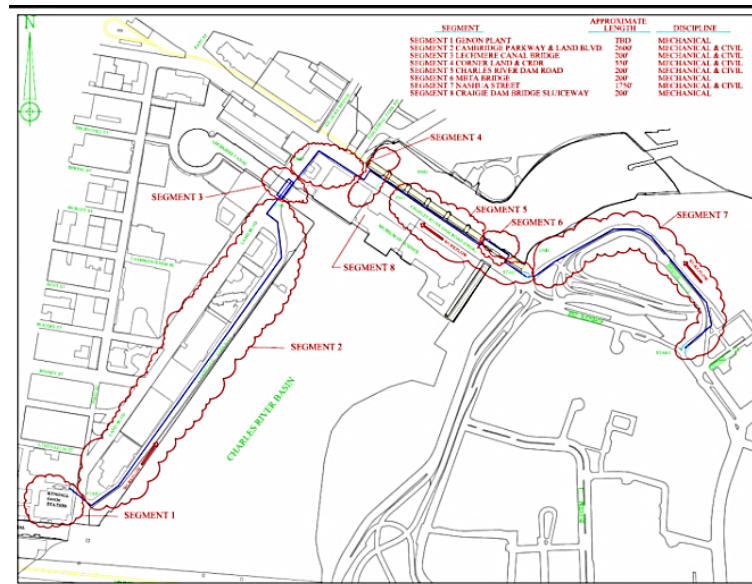
“Green Steam” Exported from Cambridge to Boston



Cambridge
CHP Plant



Existing “Green Steam”
transmission pipe along ½-
mile, Boston-Cambridge
Longfellow Bridge



CHP Energy Supply to Boston-Cambridge Networks

Boston-Cambridge “Green Steam” Pipe



- **Boston-Cambridge Energy Supply:**

- *MATEP (separate district energy network in Longwood Medical Area)*
- 1930s-era steam plant
- Highly efficient “Green Steam” piped from CHP plant in Cambridge



- **Building Second “Green Steam” Transmission Pipe**

- Will produce nearly 75% of Boston’s heating district requirements
- 1930s steam plant becomes secondary source

- **Project status:**

- Construction in progress
- Schedule - August 2013 completion



Significant Carbon Reduction for the Region



Boston-Cambridge	Est. Tons CO2 Avoided	Equivalent Number of Cars Removed from the Streets to Achieve Same Impact	Equivalent # of Football Fields' Worth of Solar PV Panels That Would Achieve Same Impact
MATEP plant for Longwood Medical Area Network	160,000	27,000	300
Existing "Green Steam" pipe	150,000	25,000	300
Boston Today	310,000	52,000	600
New "Green Steam" pipe in 2013	165,000	27,000	300
After New Pipe	475,000	80,000	900
Additional Potential with New Capacity	50,000	8,500	100
Boston Grand Plan	525,000	90,000	1,000

Secure and Resilient Energy Infrastructure

District Energy and CHP Keep Going When the Grid Goes Down



- **Secure source of energy:**
 - Multi-fuel
 - Energy “island” mode
 - Redundant to utility grids
- **March 2012 Boston blackout** –Power and process steam kept going at Biogen Idec
- **October 2012 Hurricane Sandy** – Heat and power kept going at the New York University campus
- **MATEP 2001**– District energy and CHP kept going
- Excellent solution for urban environments, critical care facilities, and military installations





Reducing Your Carbon Footprint

