District Energy Pittsburgh
District Energy in Pittsburgh, PA

Northside District Energy
NRG Energy Center Pittsburgh
Currently serves 30 Buildings (including PNC Park, the Carnegie Science Center and Allegheny General Hospital)
Capacity: 240 Mlbs/hour of steam 20.4 MMBtu/hour of hot water 12,580 tons of chilled water

Larimer Energy District
Possibility for a community microgrid system to serve 285 acre residential neighborhood redevelopment

Brunot Island
Potential energy-from-waste plant adjacent to Allegheny County Sanitary Authority (ALCOSAN)

Downtown Energy District
Pittsburgh Allegheny County Thermal, Ltd (PACT)
Currently serves 59 Buildings (including City County Building, Allegheny Courthouse, the Westin and the Hilton Hotels)
Capacity: 500,000 lbs of steam per hour

Carnegie Museum of Pittsburgh: Bellefield Boiler
Capacity: 480,000 lbs/hour of steam
University of Pittsburgh: Carrillo Steam Plant
Capacity: 690,000 lbs/hour of steam

Oakland Energy District
Interconnected systems

Uptown EcolInnovation District
Duquesne University has a cogeneration plant. Possibility for a new district energy system to serve the 28-acre Lower Hill site

ALMONO Energy District
Possibility for a district energy system to serve the 178 acre planned urban riverfront mixed use property development
Overview

• Two existing commercial district steam systems: NRG & PACT
• Three existing university/institutional systems: Carnegie Museums Bellefield Boiler; University of Pittsburgh Carrillo Steam Plant; Duquesne University Cogeneration Plant
• Four sites for potential new district energy, micro-grid, or energy-from-waste systems
Strategies

• Optimize existing systems with existing built infrastructure

• Support infill development to connect to existing systems

• Create new systems that support new development and redevelopment projects

• Integrate next generation grid and building performance technologies to optimize energy use
NRG began operations in 1999
More than 30 buildings
Over 6.3 million square feet
Capacity
  - 240 Mlbs/hour of steam
  - 20.4 MMBtu/hour of hot water
  - 12,580 tons of chilled water
Plans for electric generation

Image Source: NRG
Pittsburgh Allegheny County Thermal Downtown District Energy

- Established in 1983
- 59 buildings currently on the system, including many local government buildings
- Customer owned
- Capacity
  - 500,000 lbs/hour of steam

Image Source: PACT
Oakland District Energy

Bellefield Boiler Plant

• Built in 1907
• Serves most of Oakland’s major institutions
• Capacity
  – 460,000 lbs/hour of steam
• Interconnected with Carrillo steam distribution lines

Image Source: Margaret J. Kraus, 90.5 WESA
Oakland District Energy
Carrillo Steam Plant

- Began operations in 2009
- Serves the University of Pittsburgh and UPMC
- Capacity
  - 600,000 lbs/hour of steam
- Interconnected with Bellefield Boiler distribution lines

Image Source: University of Pittsburgh
Uptown Energy District
Duquesne Cogeneration Plant

• Began operations in 1997
• Produces 85% of the electricity used on 50-acre campus
• Produces heat for entire campus
• Paired with cooling system
Uptown Energy District
EcoInnovation District

• 28 acre Lower Hill Redevelopment

• Proposed Users:
  – UPMC Mercy
  – Consol Energy Center
  – Chatham Center
  – US Steel
  – New Development...

Image Source: Dept of City Planning

Image Source: Sports & Exhibition Authority
Almono Energy District

- 178 acre riverfront property
- Mixed Use Development
- Clean industry
- Applied research & innovation
Larimer Energy District

- 285 acre Choice Neighborhood
- Mixed Use Development
- 1,728 residents
- Micro-grid Applications

Image Source: Google Maps

Image Source: Larimer Vision to Action Plan
Brunot Island

- Current substation
- Close Proximity to ALCOSAN wastewater treatment center and commercial districts
- Possible site for biogas and waste-from-energy plant

Image Source: Google Maps
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