PANELISTS

- Melanie McCottry – Philadelphia Gas Works
- Steve Miller – Mondre Energy
- Shari Williams – PA Public Utilities Commission (PUC)
- Charlie Wheeler – NORESCO
- David Montvydas – SEPTA Chief Engineer
- Erik Johanson – SEPTA Director of Innovation
COMBINED HEAT & POWER (CHP) TECHNOLOGY OVERVIEW

TRADITIONAL POWER SUPPLY

100 FUEL

POWER PLANT

LOSSES 35

POWER 21

BOILER

HEAT 35

USEFUL ENERGY 56

COMBINED HEAT & POWER

100 FUEL

COMBINED HEAT AND POWER

LOSSES 20

POWER 31

HEAT 49

USEFUL ENERGY 80
SAMPLE OF CHP INSTALLATIONS, CITY OF PHILADELPHIA TO-DATE

- Aria Hospital - Torresdale Campus
- Logan Hotel (old “Four Seasons”)
- Cathedral Village Nursing Home
- Cancer Treatment Centers of America
- Independence Visitors Center
- PWD – Northeast Cogen Building
- PGW Headquarters
- Urban Outfitters – Navy Yard

SOURCE: PGW
"Combined heat and power (CHP) is an efficient and clean approach to generating electric power and useful thermal energy from a single fuel source."

PENNSYLVANIA PUC SUPPORTS CHP

• “In light of the potential benefits to the public of CHP, the PUC is interested in considering ways to advance the development of CHP in Pennsylvania ... In addition to improving manufacturing competitiveness and greenhouse gas emissions, CHP benefits businesses by reducing energy costs and enhancing reliability for the user”

PROPOSED SEPTA MIDVALE CHP

• 8.8 MW baseload power for Regional Rail & Midvale Complex
• Reuse of heat for maintenance facilities
• Energy conservation & stormwater management
• Designed, operated, and maintained by industry expert, NORESCO
BENEFITS OF SEPTA MIDVALE CHP

- Self-funded through energy savings
- Replaces boiler for heat & hot water
- 41% greenhouse gas emission reduction
- Resilient power source in event of PECO outage
• “The worst disaster for public transit systems in the nation’s history” – White House Report
• CHPs kept running during prolonged NY/NJ blackout
• Increasing vulnerability to weather-related outages
• NJ Transit designing CHP for NEC in North Jersey

FACILITY SIZE & LOCATION

VEOLIA – 163 MW

SEPTA – 8 MW
• Plant Designed with Industry’s “Best Available Technology”

• SEPTA Commissioned Independent Emissions Analysis
  – Analysis is Above & Beyond Air Permit Requirement
  – Findings: Each Emission Source Below NAAQS Standard

• CHP Emissions More Than Offset at Midvale By:
  – Boiler Retirement (Elimination of Burning of Fuel Oil)
  – Hybrid Bus Program (50% of Fleet in 2016; 100% of Fleet by 2020)
  – Net Result is *Reduction* of Emissions at Midvale
ALTERNATIVES ANALYSIS

- Combined Heat & Power (CHP)
  - 100% of Base Load (~70M kWh)
  - Resilient Power Source
  - $35M

- Solar PV/Battery Storage
  - 15% of Base Load (~11M kWh)
  - Non-Resilient Power Source
  - $30-$32M

- Wind/Battery Storage
  - Found Not Feasible for Midvale
  - Copies of Report Available
MIDVALE MASTER PLAN

- Phased Program to Clean Up Along Wissahickon Avenue
- Potential Stakeholder Partnership Opportunities
- NORESCO Educational Program
- Questions?
POWERING TRANSIT FOR A SUSTAINABLE FUTURE

PRESENTATION TO NEIGHBORS OF MIDVALE COMPLEX
OCTOBER 6, 2016