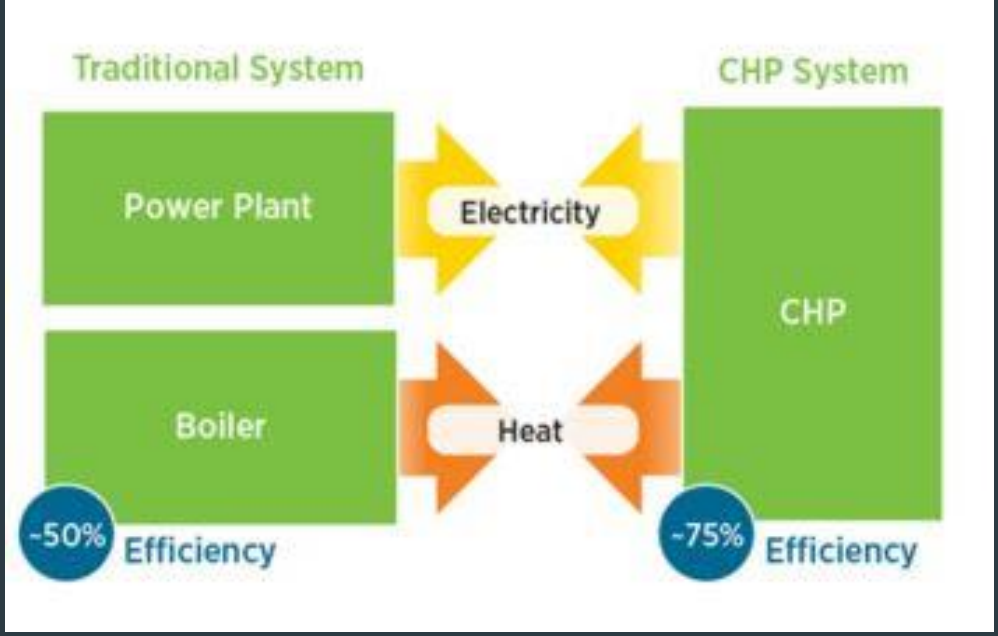
Introduction to CHP (Combined Heat and Power)

- CHP is a type of distributed generation
  - Located at or near the point of consumption
  - Electricity – usually for own use
    - Also buy from grid
  - Heat – own use
- CHP systems produce electricity and heat from the same fuel source
  - Various fuels workable
  - Natural gas is common
- CHP systems:
  - Increase energy efficiency
  - Reduce overall costs
  - Reduce CO_2 emissions



http://energy.gov/eere/amo/combined-heat-and-power-basics

Who can use CHP Systems?

- Any facility that:
  - Needs both electricity and heat
  - Functions, on average, more than 10 hours per day
- Examples:
  - Hospitals
  - Correctional, Industrial, Commercial Facilities
  - Corporate and university campuses
  - Wastewater treatment plants
- Sizes
  - Pre-packaged: Under 2 MW
  - Custom designed: Greater than 2 MW

Maryland examples of CHP

- Baltimore Horseshoe Casino
  - 1.2 MW system – natural gas
  - Expected to more than double overall energy efficiency of building
- Univ of Maryland, College Park
  - 27 MW system - natural gas, could use fuel oil
- Upper Chesapeake Medical Center, Bel Air
  - 2.0 MW system – natural gas
  - Buy electricity from CHP third party owner
  - Expected to save $ 9 million over 20 years
- Hagerstown Correctional Facility – RFP in 2014
  - Guaranteed Cost Reduction

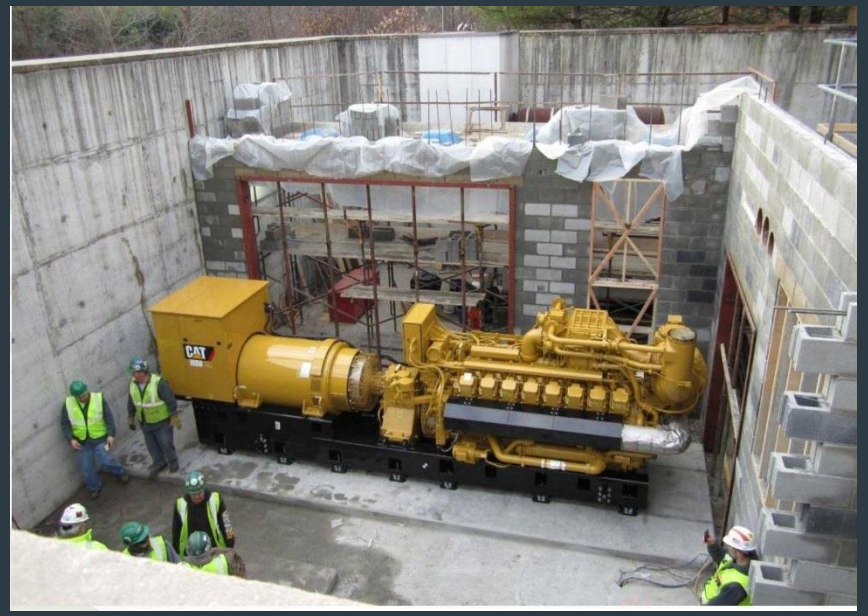
Horseshoe Casino, Baltimore,

1.2 MW CHP system, installed 2014

Maryland Incentives for CHP – FY 16

http://1.usa.gov/1NyvRxn

- Industrial facilities and critical infrastructure facilities
  - (including healthcare, wastewater treatment, and essential state and local government facilities)
- Key dates:
  - Open for applications first-come, first-served: Nov 2015
  - Close date: Feb 1, 2016
  - Ground-breaking date: Jan 1, 2017
- Grants:
  - Cap of $ 500,000 per project
  - For smallest project (under 75 kW): $ 575/kW
  - For largest projects (1 MW and larger): $ 425/kW



Upper Chesapeake Medical Center

$ 1.5 million from EmpowerMD