The GPG program enables GSA to make sound investment decisions in next generation building technologies based on their real world performance.

**CAPTURE HEAT**
THAT IS LOST THROUGH STEAM
IN CONVENTIONAL BOILERS

**95% EFFICIENCY**
15% more efficient than conventional boilers

- **>14% SAVINGS**
  IN NATURAL GAS CONSUMPTION

- **<130°F RETURN WATER TEMPERATURE**
  KEY TO EFFICIENCY

- **4-7 YEARS PAYBACK AT ESTIMATED TYPICAL COST**

**END-OF-LIFE REPLACEMENT**
OF CONVENTIONAL BOILERS WITH CONDENSING BOILERS

Life-cycle cost-effective even when only 3%-5% more efficient than high-efficiency boilers

**RETURN WATER TEMPERATURE IS KEY TO EFFICIENCY**
Lower RWT results in greater efficiencies

**OPPORTUNITY**
How much energy is used for heating in U.S. commercial buildings?

35% OF ENERGY GOES TO HEATING

32% OF COMMERCIAL BUILDINGS RELY ON BOILERS TO SUPPLY THIS HEAT

**TECHNOLOGY**
How do Condensing Boilers save energy?

**RESULTS**
Where did Measurement and Verification occur?

PACIFIC NORTHWEST NATIONAL LABORATORY and NATIONAL RENEWABLE ENERGY LABORATORY measured the performance of condensing boilers provided by Harsco Patterson-Kelley and Cleaver-Brooks at both the Peachtree Summit Federal Building in Atlanta, Georgia and the Denver Federal Center

**DEPLOYMENT**
Where does M&V recommend deploying Condensing Boilers?