

OPPORTUNITY

How much
energy is used
by data centers
in the U.S.?

2%
OF ALL U.S. ENERGY
is consumed by data centers¹



~50%
GOES TO
NON-IT LOADS²

TECHNOLOGY

How do Wireless
Sensor Networks
save energy?

CAPTURE & DISPLAY CRITICAL INFORMATION IN REAL-TIME

operators identify ways to increase energy- efficiency

M&V

Where did
Measurement and
Verification occur?

LAWRENCE BERKELEY NATIONAL LABORATORY assessed the effectiveness of a wireless sensor network provided by Synapsence at the USDA National Information Technology Center in St. Louis, Missouri

RESULTS

How did Wireless
Sensor Networks
perform in M&V?

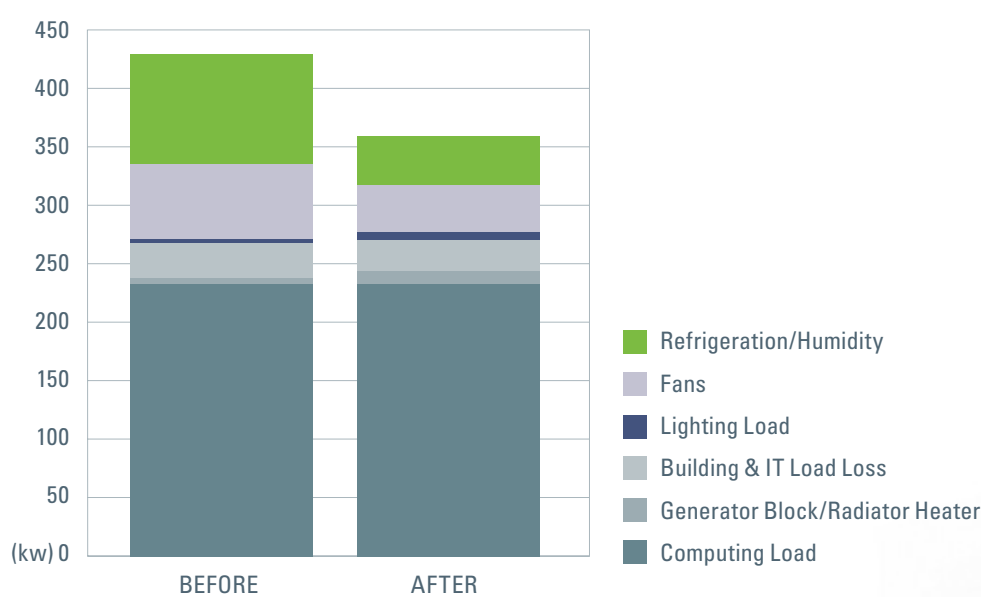
17%
**ENERGY
SAVINGS**
48% reduction
in cooling load³

**EFFECTIVE
TOOL**
for on-going
optimization
of data centers⁴

**3.4
YEARS**
payback at
\$0.045 kwh
< 50% of national
average \$0.11 kWh⁵

Data Center Power Usage Distribution

48% Cooling Load Reduction, 17% Overall Data Center Energy Reduction



DEPLOYMENT

Where does
M&V recommend
deploying Wireless
Sensor Networks?

ALL DATA CENTERS*

Estimated \$61 million in annual savings and annual decrease of 532,000 metric tons of CO₂, if implemented by tenant agencies throughout the GSA portfolio

Data center assessment kit developed during study reduces deployment time and power interruptions during installation

¹McKinsey & Company, "Revolutionizing Data Center Efficiency", 2008 ²Wireless Sensor Network for Improving the Energy Efficiency of Data Centers. Rod Mahdavi, William Tschudi (LBNL), March 2012, p.27 ³Ibid, p.29 ⁴Ibid, p.7 ⁵Ibid, p.29 *Subject to evaluation and approval by GSA-IT and Security