



Commercial Buildings Integration Group Update for ISWG

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U.S. Dept. of Energy
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Better Buildings Summit

2016

REGISTER TODAY

BETTER BUILDINGS SUMMIT

WASHINGTON, DC ■ MAY 9-11



Better Buildings Summit – Selected Commercial Building Sessions

- Appraising Green: Show Me the Value
- Energy Modeling for Building Owners: The Force Awakens
- It's a Solar Panel!: Tenants and Owners Working Together to Get Solar on the Roof and Reduce Energy Costs
- From Numbers to Action: Using Energy Management Information Systems (EMIS) to Detect Problems and Fix Them
- All-Star LEEPers: Success Stories from the Parking Lot
- Cool New Technologies Partners are Piloting in Their Buildings

Better Buildings Summit – Special Events

- Building Tours
 - Millennium Building
 - National Cancer Institute
 - GWU Science and Engineering Building
 - U.S. Capitol
- Ask-An-Expert
- Networking Events



<http://betterbuildingsolutioncenter.energy.gov/summit>

Better Buildings Solution Center



- Over 200 solutions tested and proven by Partners
- Find solutions by topic, building type, solution type, building size, sector, technology, location, and more.

energy.gov/betterbuildings/solutioncenter

Smart Energy Analytics (SEA) Campaign

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PLEDGE

COMMIT TO:

- 1) Install EMIS or use existing EMIS
- 2) Analyze energy use
- 3) Implement measures

METRICS

Square footage
buildings
EMIS and Process
(baseline + pledged)

ACTIONS

SHARE:

- 1) Measures implemented
- 2) EMIS and Process implemented
- 3) Annual energy use

METRICS

Update pledge metrics
with actuals

AWARDS

SHARE:

- 1) Actions taken
- 2) MBCx activities
- 3) Energy savings
- 4) Cost and labor \$

METRICS

Energy savings
Cost-benefit

Technology Demonstration Opportunities

TECHNOLOGY DEMONSTRATION OPPORTUNITIES

Energy Management

- High Performance Circulator Pump
- Boiler Load Optimization Control

Plug Loads

- Data-driven Receptacle Control

Water

- Chemical-Free Water Treatment

Window Attachments

- Internal Solar Shade System for Daylight Harvesting & Thermal Control



HIGH PERFORMANCE CIRCULATOR PUMPS

Energy Management Platform

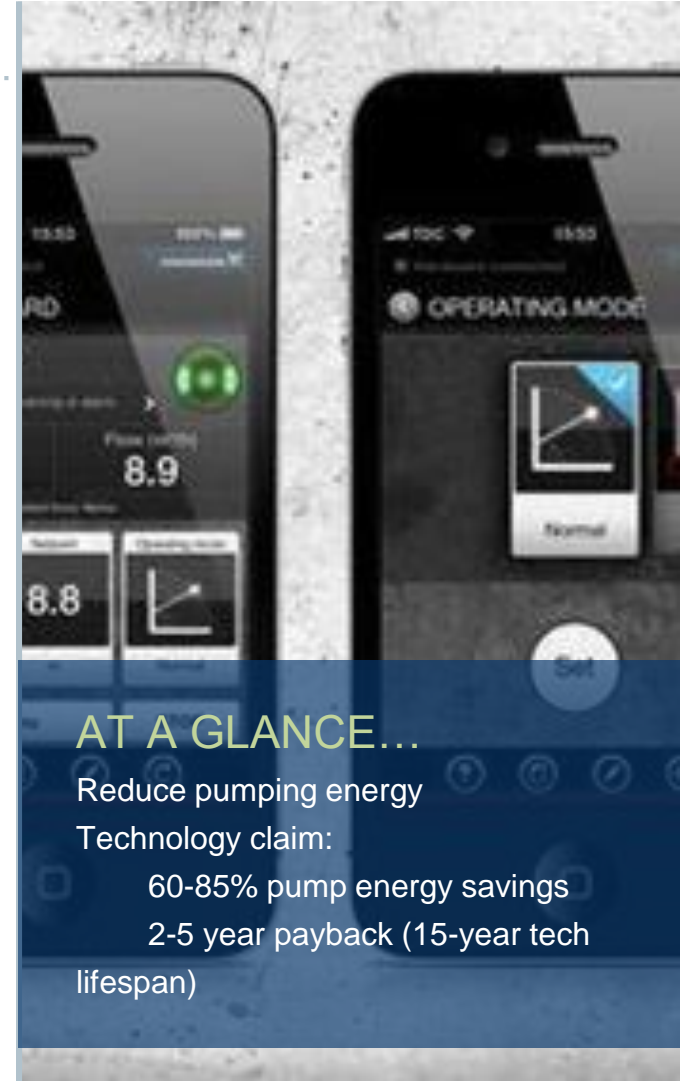
- Convert constant volume pumps to VFDs
- Built-in metering and reporting via BAS or mobile device

Value of Study

- Validate pump energy savings
- Assess onboard metering value

Value to Owners and Operators

- Optimize building management
- Eliminate wasted pump energy



BOILER LOAD OPTIMIZATION CONTROL

Boiler Efficiency Control

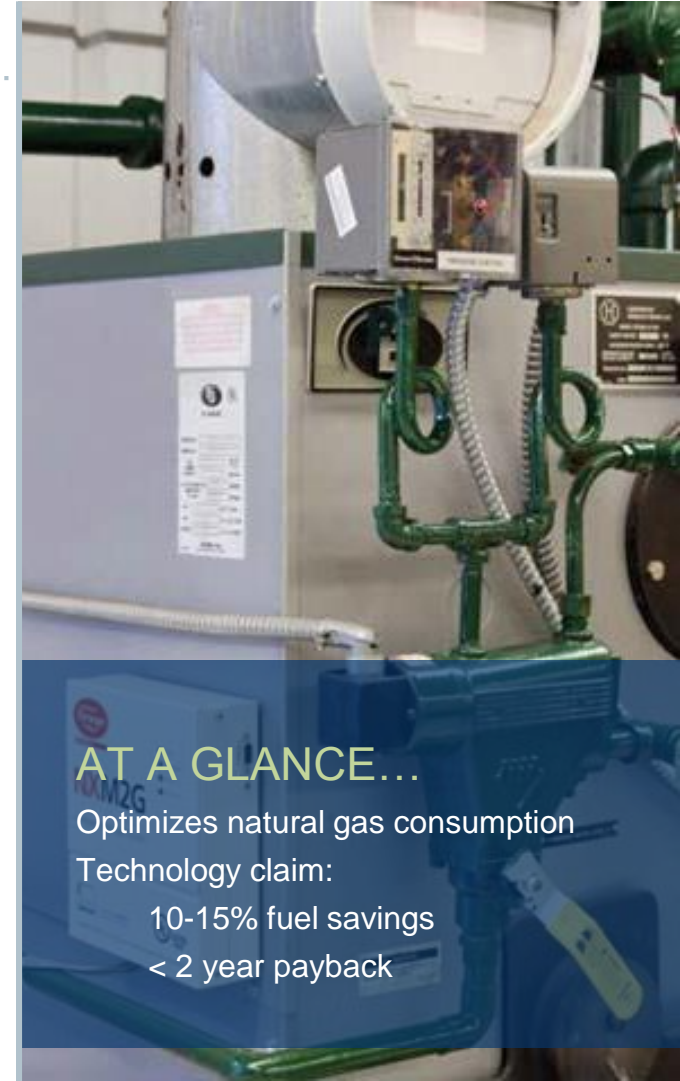
- Reduces standby losses
- Simplified retrofit installation

Value of Study

- Validate fuel savings
- Verify ease of installation

Value to Owners and Operators

- Reduce natural gas usage
- Better boiler control, reduces waste



AT A GLANCE...

Optimizes natural gas consumption

Technology claim:

10-15% fuel savings

< 2 year payback

CHEMICAL-FREE WATER TREATMENT

Non-Chemical Water Treatment

- Eliminates scale formation and corrosion
- Eliminates the need for added chemicals
- Removes heavy metals

Value of Study

- Validate water and HVAC savings
- Validate maintenance reduction

Value to Owners/Operators

- Reduce water and energy consumption
- Reduce sewer charges
- Reduce use of chemicals



AT A GLANCE...

Addresses water treatment and consumption

Technology claim:

25-80% water savings

10-50% HVAC savings

< 2 year payback

DUAL ZONE SOLAR CONTROL SHADE

Solar Shade for Light Harvesting

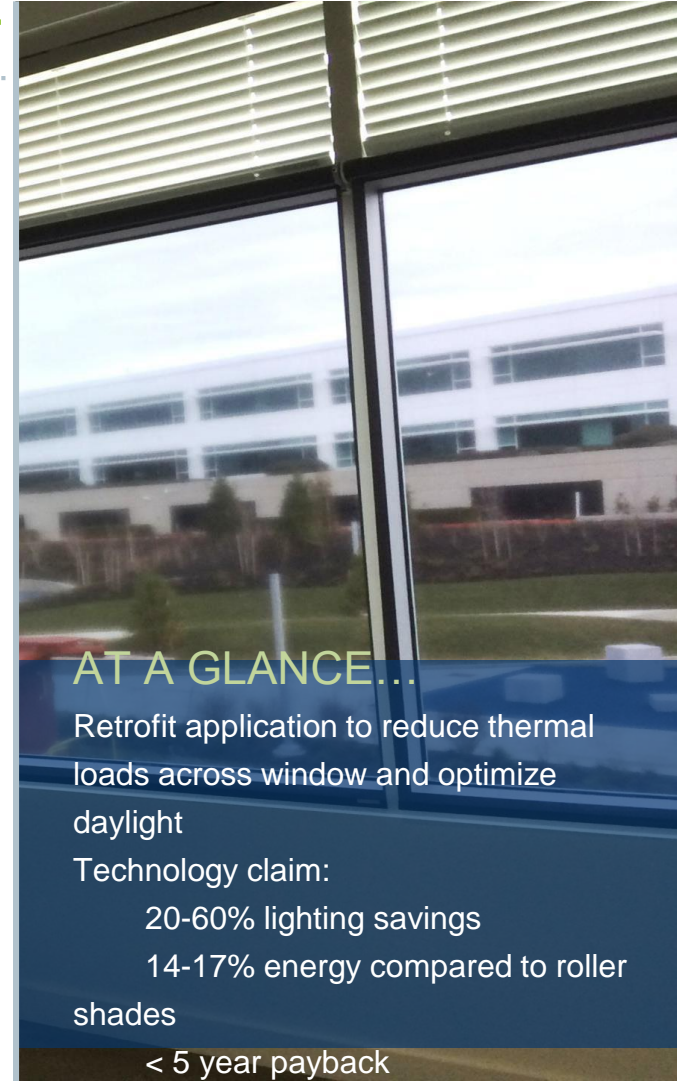
- Independently operated upper and lower shades
- Maximizes light while blocking glare

Value of Study

- Validate energy savings
- Assess occupant satisfaction

Value to Owners/Operators

- Potential increase in daylighting in existing buildings
- Energy reduction & improved work environment



AT A GLANCE...

Retrofit application to reduce thermal loads across window and optimize daylight

Technology claim:

20-60% lighting savings

14-17% energy compared to roller shades

< 5 year payback

DATA-DRIVEN RECEPTACLE CONTROL

Cloud-based data and user-interface for Plug Load Control

- Intelligent sockets capture and control device energy
- Gateway communicates and stores data
- User Interface enables trending for management of devices

Value of Study

- Validate energy savings
- Assess occupant satisfaction
- Understand connectivity and security

Value to Owners/Operators

- Better data and control for plug and miscellaneous loads
- Ease of installation
- Energy reduction of appliances



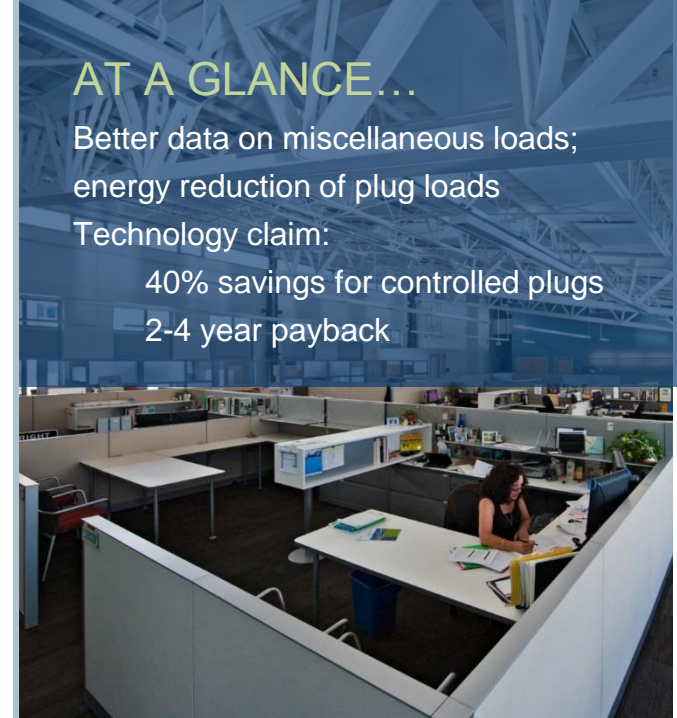
AT A GLANCE...

Better data on miscellaneous loads;
energy reduction of plug loads

Technology claim:

40% savings for controlled plugs

2-4 year payback





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Better Buildings Challenge SWAP



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Questions? Contact us!

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Better Buildings Partnerships

U.S. Department of Energy

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