

THIRD-PARTY UTILITY VALIDATES INNCOM ENERGY SAVINGS AT WASHINGTON HILTON

INNCOM Networked Energy Management System (EMS) uses 41% less energy than a standalone EMS in 6-month study metered by the D.C. Sustainable Energy Utility

Case Study

Honeywell

INNCOM NETWORKED EMS USES 41% LESS ENERGY THAN STANDALONE EMS

Hilton Worldwide, Clearview Hotel Capital, Honeywell, and the D.C. Sustainable Energy Utility (DCSEU) partnered to measure and compare the energy savings between standalone and networked EMS and validate Honeywell's claim that an INNCOM Networked EMS delivers 25-40% guestroom HVAC energy savings.*

LOCATION

The Washington Hilton Hotel
1919 Connecticut Ave NW
Washington, D.C. 20009

LOCAL UTILITY

D.C. Sustainable Energy Utility

DATES

August 2018 – January 2019

HVAC TYPE

Heat Pump

POWER METER

DENT Instruments ELITEpro XC

PMS

Hilton OnQ

INNCOM EQUIPMENT

e7 EMS Thermostat

S241 and S541.RF Wireless Door
and Window Sensors

B578 Deep Mesh Network Router

INNcontrol™ 3 Supervisor Software

INNCOM EMS ROOM TYPES

3 Networked EMS Rooms with door
and window / balcony sensors,
integrated with hotel PMS

5 Standalone EMS Rooms with door
sensor (no PMS integration)

Baseline guestroom energy usage
was modeled on a traditional,
mechanical thermostat (i.e., with
no occupancy detection or PMS
integration)



HOTELS NEED OCCUPANCY-BASED ENERGY MANAGEMENT

On average, more than 30% of hotel rooms in the U.S. are unrented at any given time. And even when rented, guestrooms are often left unoccupied throughout much of the day, leaving hotel rooms unoccupied almost as often as they are occupied.**

On average, an occupancy-based, Standalone EMS (Energy Management System) can reduce guestroom energy use by up to 25%. According to the U.S. Department of Energy, "when properly configured, PMS (Property Management System) integration can allow for deeper temperature set-backs of unrented rooms, affording additional savings."***

The Washington Hilton wanted to know how much more savings. (And they wanted to know how the energy savings could be proven.)

* based on HVAC runtime reduction from a PMS-integrated EMS vs. ETM (traditional thermostat mode) in hotels with average occupancy and <500 rooms

**STR, "STR: U.S. hotel performance for Q2 2019", July 22, 2019

***Blanchard, J. U.S. Dept. of Energy. "Guest Room HVAC Occupancy-Based Control Technology Demonstration". September 2012

METHODOLOGY

This study was designed to measure and quantify the additional savings enabled by a Networked EMS (with PMS integration) compared to a non-networked, standalone EMS.

In order to ensure as representative a sample as possible, this case study ran for 6 months and included key/peak HVAC demand months (August and January). Within the property, the test rooms included a range of guestroom variants: different floors, sides of the building, room type configurations, etc.

Standalone EMS rooms included an e7 EMS thermostat and door sensor, while Networked EMS rooms also included a window/balcony sensor and were integrated with the hotel's PMS to receive rented and unrented status via the INNcontrol 3 supervisor software.

SCALABLE INNCOM EMS

The scalable energy management and hospitality IoT platform from Honeywell provides the option to install a basic, standalone in-room energy management system that at any time can be networked and integrated with the hotel's PMS for greater savings.

THE CLEARVIEW CHALLENGE

In 2018, Clearview Hotel Capital – owner of the historic Washington Hilton, an iconic, 4-star hotel with 1,107 rooms near Dupont Circle in Washington, D.C. – partnered with Hilton and the local utility (DCSEU) to assist with metering, validating the HVAC energy used in test guestrooms with INNCOM Standalone and Networked EMS.

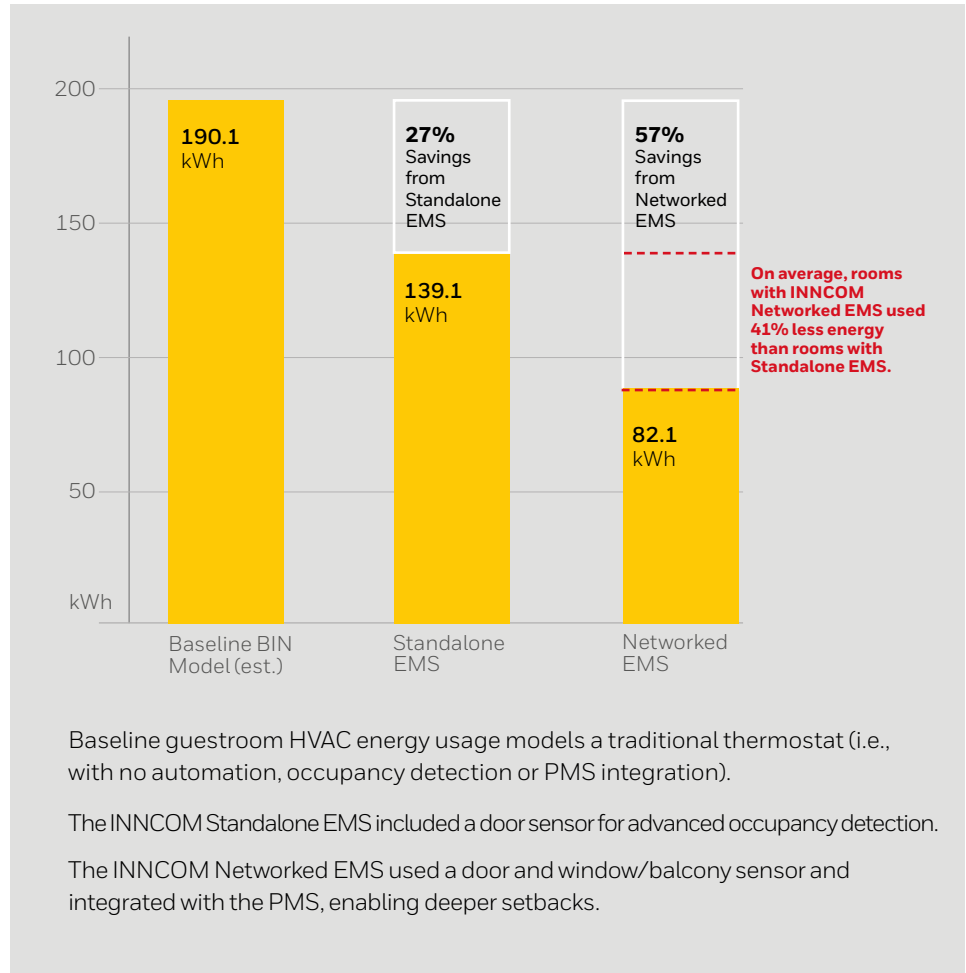
THE PROCESS

The DCSEU team worked independently from the Honeywell team, metering these same test rooms. Their results were reported to Hilton and Clearview independently from and in addition to the EMS data from Honeywell.



Power meters installed on heat pumps, independently monitored by DCSEU.

Honeywell Guestroom Energy Savings vs. Traditional Thermostat



FINDINGS

The results were clear: Guestrooms with INNCOM Networked EMS consumed, on average, 41% less HVAC energy than rooms with a Standalone EMS (i.e., without PMS integration).

Compared to the baseline model of a traditional thermostat (i.e., no EMS), the Networked EMS was shown to double the energy savings vs. a Standalone EMS.

- Rooms with a Standalone EMS showed an estimated **27%** energy savings.
- Rooms with a Networked EMS showed an estimated **57%** energy savings.

Overall, the performance and energy savings from the INNCOM energy management systems, both Standalone and Networked, exceeded expectations.



CONCLUSION

The INNCOM Networked EMS exceeded performance and ROI/payback expectations. While the Standalone EMS provides good energy savings with lower upfront investment, a Networked EMS, integrated with a hotel PMS in order to receive room rental status, delivers significantly more (2x) energy savings and therefore a stronger return-on-investment.

In order to maximize energy savings and lower operating costs, hotels with existing standalone EMS (e.g., thermostat with built-in motion sensor) are recommended to upgrade to a Networked EMS. New hotels (as well as properties with traditional thermostats) are recommended to install a Networked EMS with PMS integration.



This case study was conducted using the Honeywell INNCOM e7 EMS thermostat. Wireless model also available (e7w). Both versions are available in Ice White or Onyx Black (shown).

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01-00137 | 04/20 | LM
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