



Energy Conservation Technologies for HVAC & Lighting

Overview July 2011



Higher intelligence to lower your energy costs

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Agenda



- **Introduction**
- **Intuitus Value Proposition**
- **Typical Solutions**
 - Hotels
 - Apartments/Condos
 - Commercial/Institutional
- **Wireless Products**
- **Wired Products**
- **New Products**



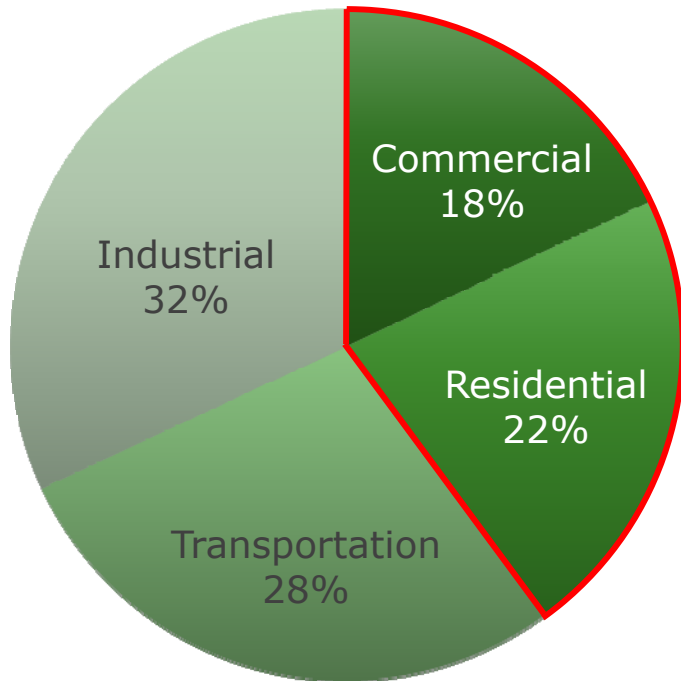


- **Intuitious Inc.**

- Canadian Manufacturer of Energy Conservation Technologies for:
 - Hotels
 - Apartments/Condominiums
 - Commercial/Institutional
 - Single Family Homes
- Intuitious systems monitor the temperature, lighting and occupancy of an area and automatically override heating, cooling and lighting systems to conserve energy.
- Website: www.intuitious.com



Annual U.S. Energy Use by Sector



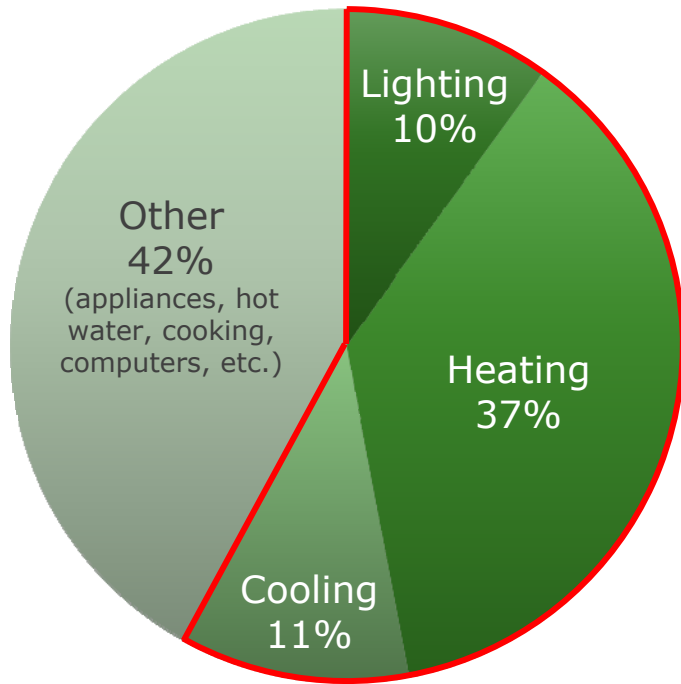
40% of all the Energy used in the United States is used in

Residential & Commercial Buildings



Source: U.S. Department of Energy. Buildings Energy Data Book 2008.

U.S. Residential/Commercial Energy End-Use



58% of all the Energy used by Residential & Commercial buildings is for

Space Heating, Space Cooling and Lighting

(equivalent to)
6.8 trillion kWh



Source: U.S. Department of Energy. Buildings Energy Data Book 2008.

(37% Heating is for space heating only and does not include water heating. 11% cooling includes ventilation but does not include refrigeration)

The Intuitious Value Proposition



Conserve During Vacancies

Vacant Space SetBack

Long Term Setback

Night Setback



15 – 30%

Prevent Excessive Use

High & Low Limiting

Open Door Limiting



5 – 10%

Lower Equipment Costs

Reduced Runtime Leads to Longer Equipment Life



5 – 15%

Protect the Environment

Reduced Carbon Footprint and reduced consumption of valuable energy resources



Priceless

Intuitious Solutions



Opportunities to Save

Sensor Networks, Security Panels,
Building Automation Systems

Wired
Occupancy
Sensors



Wireless
Occupancy
Sensors



Door
switches,
Keypads



Temperature
& Light
Sensors



Security
Panels



BAS
Systems



Intuitious Controllers



Load Control/Overrides

HVAC, Lighting & Building Automation
Systems



Thermostats



HVAC
Systems
(24V control)



HVAC Systems
(120-240V
Control)



BAS
Systems



120-347V
Lighting
Systems



Lighting
Control
Panels



- **Over 4 million guest rooms in NA**
 - Annual Energy Spend: \$2 Billion
- **Challenges**
 - Guest comfort must not be compromised
 - Technology must be transparent to guests, yet sophisticated enough to find opportunities to save energy
 - The deployment must not adversely effect the suite's decor
 - Downtime must be kept to a minimum
 - System must be fully automated; No networking dependencies or special training of staff





- **Typical Hotel Room Deployment**
 - Intuitous Wireless Controller mounted inside the PTAC unit
 - One Intuitous Wireless Sensor mounted on the ceiling
 - Install time: 20-30 minutes
- **Standard Features (save 15-30%)**
 - Temperature Based Heating Setback
 - Temperature Based Cooling Setback
 - Heating and Cooling Limits
 - Long Term Setback
- **Optional features (save 5-15%)**
 - Night Setback
 - Patio Door limits
 - Lighting Control



Apartments/Condos



- **Mid-Term Retrofit Opportunity**
 - Typical payback in less than 3 years
 - 3rd party financing can be cash-flow positive
- **Challenges**
 - Must not interfere with tenant comfort
 - Technology must be transparent to tenants, yet sophisticated enough to find opportunities to save energy
 - The deployment must not adversely effect the suite's decor
 - Must interface with a very broad array of heating/cooling systems



Apartments/Condos



- **Typical Apartment Deployment**
 - Intuitus Wireless Controller mounted inside the PTAC or Fan-coil unit
 - 2 Intuitus Wireless Sensors mounted on the ceiling & 1 door sensor (optional)
 - Install time: 30-40 minutes
- **Standard Features** (save 15-30%)
 - Temperature Based Heating Setback
 - Temperature Based Cooling Setback
 - Heating and Cooling Limits
 - Long Term Setback
- **Optional features** (save 5-15%)
 - Night Setback
 - Patio Door limits
 - Lighting Control



Commercial/Institutional



- **Many Opportunities for HVAC & Lighting Control**
 - High degree of vacancy provides excellent conservation opportunities
 - Each zone can be deployed independently
 - T-bar ceilings enable efficient low cost wired deployments
- **Challenges**
 - Older buildings have a vast array of HVAC systems
 - Installing contractor must be very experienced.
 - System must be able to interface with building automation systems (BAS)



Commercial/Institutional





- **Typical 2-Zone Office Suite**
 - 2 Wired HVAC/Lighting Controllers with sensors mounted on the ceiling
 - 8 Wired Remote Occupancy Sensors
- **Standard Features (save 20-35%)**
 - Temperature Based Heating Setback
 - Temperature Based Cooling Setback
 - Heating and Cooling Limits
 - Long Term Setback
 - Lighting Control
- **Optional features**
 - Control of Ventilation systems, etc.



Wireless vs. Wired Products



Intuitious offers both Wireless and Wired products to ensure the best possible fit into each building.

- **Wireless** 
 - Best suited for retrofit installation in multi-unit residential properties, hotels and any application where running control wires from the sensors to the controller would prove challenging.
 - **Pros:** Faster install, no in-suite wiring
 - **Cons:** More expensive components, batteries to change
- **Wired** 
 - best suited for new construction or retrofit installation in commercial, retail and institutional buildings with easy access to control wiring through T-bar style ceilings and open areas.
 - **Pros:** Less expensive components, no batteries to change
 - **Cons:** Higher install labour costs



Wireless Products



- **Occupancy Sensor**

- ECS-WOL
- Compact ceiling mount design
- Optimized for human presence detection
- Ultra-low power: 2-4 yr battery life



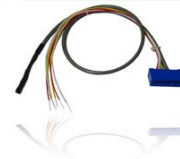
- **Door Sensor**

- ECS-WD
- Designed for Balcony & terrace doors
- Ultra-low power: 3-5 yr battery life



- **Controller**

- ECC-WHCA, ECC-WHC, ECC-WO
- Runs off HVAC power supply
- Receives status from up to 40 wireless sensors
- Connects to HVAC system with plug-and-play wiring harness
- Independent control of Heating, Cooling & Lighting
- Configuration is managed via 10 on-board DIP switches
- Can be set from moderate to aggressive savings to ensure occupant comfort is not compromised





- **Combination Sensor/Controller**

- ECSC-OLTC, ECSC-OC
- All-In-One Compact Design Includes
 - HVAC/Lighting Controller
 - Occupancy Sensor
 - Digital Temperature Sensor
 - Light Sensor
- Independent control of Heating, Cooling & Lighting
 - Vacant Space Setback
 - Long Term Setback
 - Night SetBack
 - Hi & Low Limiting
 - Lighting Control



- **Remote Occupancy Sensor**

- ECS-O
- Up to 10 sensors can be connected to each controller for large zones



NEW: Electric Heat Controller (ECSCT-EBB)



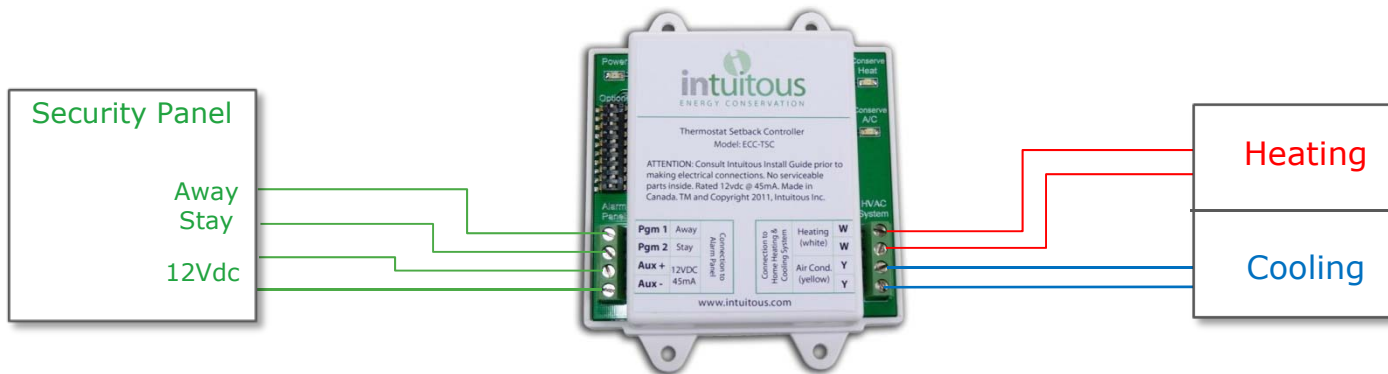
- **Digital thermostat for baseboard heaters**
 - Integrated Occupancy Sensor
 - Energy Conservation functions
 - Vacant space setback
 - High limit restrictions
 - Intelligent cycling near set point
 - Rapid deployment
 - Simply replace existing 2-wire thermostat



NEW: Home Energy Controller (ECC-HS)



- **The new alternative to Programmable Thermostats designed for homes with Security systems**
 - Programmable thermostats require a homeowner to predict vacancies in advance and to pre-program the thermostat around the household schedule
 - Security panels know when residents are home, away or sleeping, so why program that schedule into a thermostat?



- Works with most security systems using standard PGM outputs
- Compatible with any 24Vac controlled HVAC system (excluding Heat Pumps)
- Available July 2011



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Please visit our website for additional information ...

www.intuitious.com