Hotel Energy Management Action Program

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Sources of Information

Presentation, documents, saving tools tips, reports etc. are freely available for IHF members @ Wattics IHF 2014 online repository
Send an email to BradleyJ@ihf.ie or antonio.ruzzelli@wattics.com to access the repository
ENERGY FACTS: Give your profit a wake up call!

- Energy used in catering accounts for between 4 and 6% of operating profits.

- Saving energy can directly increase revenue and profitability without the need to increase sales.

- The hospitality industry is highly energy-intensive, due to the variety of services and amenities provided around the clock.

- Simple actions such as raising awareness amongst kitchen staff and providing energy management training can reduce catering energy use by up to 30% [1]

[1] “Hospitality: Saving Energy without compromising service” Carbon Trust, available @ Wattics IHF 2014 Online repository
The cost of not engaging

Well-run energy programs reduce energy costs by 3 to 10 percent annually.

On average, America’s 47,000 hotels spend $2,196 per available room each year on energy. By improving financial performance, superior energy practices can create a competitive edge.

The U.S. Environmental Protection Agency’s (EPA) ENERGY STAR®

€1,500 = Avg annual energy spent per room per hotel
€225,000 = Avg annual energy spent for 150-room hotel
€13,500 = Wasted profit per year

10% = Avg hotel operating margin (CSI market trend analysis)

€13,500 profit = €135,000 revenue
Turning away 1350 guest nights @ €100/night
How To Engage: 5 pillars

- Commit
- Identify
- Plan
- Take Action
- Review
Senior Management Commitment

Without the support of senior managers, energy management will falter and be marginalised.

Senior managers need to be convinced of the business case for investing funds and staff time in managing energy.
Commit

Appoint a senior group manager to:

- Engage with hotel general managers and sponsor energy-saving activities within the group
- Follow closely the energy saving achievements
- Report financial progress to the hotel board of directors

Your Belief is fundamental for you to successfully influence others

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Commit

Hotel general managers must Lead by Example

- Engage with the energy management program
- Believe that it makes business sense
- Be proactive and be a model for the staff
Commit

Appoint a **HOTEL ENERGY CHAMPION** to:

- Engage with hotel staff
- Develop new energy-saving ideas and discard “pretentious” products
- Translate those into short payback time and significant savings
- Provide advices
- Track savings and report to the manager
- Reward staff for their achievements

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Commit

- Establish a **Hotel Energy Team** to
  - Assist the energy champion
  - Be responsible for different areas in the hotel
  - Implement saving actions
How to look for personnel for the ENERGY TEAM in your hotel

- Look for motivated representative of key functional areas
- Look for people operating appliances
- Look for personnel willing to take responsibility on board and go the extra mile
- Look for charismatic personnel that can influence others
Do not depend solely on maintenance managers

- Little or NO time to focus on the grand scheme of hotel energy efficiency
- Their day-to-day job is to fix hotel fixtures, fittings, maintenance issues and look after staff requests
- Their standard day is filled up with urgencies one after the other
Commit

Establish an **Energy Policy**

- Set the boundaries (which hotel, which areas, which operation)
- Develop a short document and include objectives, targets, roles and responsibilities
- Circulate to key managers to get endorsement from the CEO
- Launch the policy to employees and update regularly according to feedback from key people

Identify

Energy management technology, which must:

- Be a key tool in establishing energy analysis and usage in areas and appliances of the hotel
- Be accessible with separate accounts by each member of the Energy Team
- Be backed by a data analyst / customer care representative to derive actions
- Reveal and alert in case of problems (e.g. abnormal changes in energy consumption) and energy-saving opportunities
- Accept key factors that influence consumption & Energy Performance Indicators (number of rooms, number of rooms sold, degree days, etc.)
- Allow verification of the effectiveness of the energy conservation measures as implemented.
Identify

- An overview total energy consumption [1]
- A breakdown of energy use & significant energy users

[1] "SEAI 5-Step Guide to Analysing Your Electricity Bills", WATTICS IHF 2014 Online Repository
Hotel electricity use cannot be generalized

Hotel 1
- Bedrooms 16.9%,
- Air Handling Plant 12%,
- Leisure Centre 15.1%,
- Kitchen 14.2%,
- Bar 3.9%

Hotel 2
- Bedrooms 8.4%,
- Air Handling Plant 25.4%,
- Golf & Gym 14.2%,
- Kitchen 31.6%,
- Reception 14%.

Hotel 3
- Bedrooms 24%,
- Air handling plant 31%
- Bar 13.3%,
- Kitchen 20.4%,
- Reception 7.7%.
Identify

Identify energy-saving opportunities

 Estimate savings per area/major loads

 Assign responsibility to staff member for that area

 Senior manager to be kept up-to-date by the energy champion
Identify

Identify personnel and make them responsible for certain areas

Staff at Reception

Bar manager

Hotel night manager

Leisure centre manager

Maintenance manager

Cleaner manager

Chef
Identify

The suitable energy management technology and consultancy company:

- Have they done this before?
  - Case studies in other hotels showing achievements and contact details

- Are they talking money?
  - Case studies and discussion should focus on benefits and return for the hotel

- Do they have certified M&V experts (IPMVP)?
  - IPMVP experts with appropriate management technology are SEAI recognised and can convert saving into energy saving credits
Energy Saving Credits

Energy Suppliers (Airtricity, Electric Ireland…) are subject to Annual Energy Saving Targets set in accordance with Regulation 16 and 17 of SI542/2009

IPMVP-certified experts convert your savings into energy saving credits [2] and assist trading those credits with supplier for cash

Example of Energy Saving Credits Calculation

E.G.
- Hotel installs energy management tool for the kitchen and engage with staff
- Experts establish baseline
- One month afterwards, the kitchen staff implements saving actions and saving events are tracked
- CMVP expert generates annual projected kWh savings

100,000 kWh → hotel electrical reduction:

€250,000 Energy Credits → 1kWh = 2.5 energy credit (primary energy)

€2,500: Total cash contribution from utility companies
Plan

Set objectives and targets

- Agree and finalise objectives for Energy Team members
- Provide awards for the best members
  - (e.g. paid weekend in one of the chain’s hotels)
- Communicate league targets (time-limited, challenging)
- Communicate roles to get points on a scoreboard
Take Actions

Build Points for implemented actions

- each member of the ENERGY team should log his/her own actions into the management tool
- Each member should log energy-saving events
- Tool should track savings on areas or appliances
- Action Points are given to each saving event
- Energy champion to review progress on a regular basis and inform relevant people
Take Actions

- Team engagement is KEY
- Implement the Programme Plan
- Share & promote energy efficiency awareness and practices amongst employees

Hotel saving event logs

Event 1
Created by John
Date: 01/10/2014
Description: Modified setting in kitchen extract fan

Event 2
Created by Niamh
Date: 10/10/2014
Description: Bain marie monitored closely and starting time delayed

Event 3
Created by Mary
Date: 09/10/2014
Description: AHU at reception turned off after 11pm and push button installed

Event 4
Created by Sean
Date: 01/09/2014
Description: Carpark lighting timer modified

Event 5
Created by Sinead
Date: 01/09/2014
Description: Room air con monitored closely
Review

- **Energy Team members are ranked** based on their actions and saving events calculated by the management tool.

- **Energy champion acts as a referee** to monitor energy performance against targets.
“All major hotel brands have started implementing strategies to address their carbon footprint and reduce their energy waste.”

Have a reputable and professional conduct, energy and waste analysis.

Create a plan to ENGAGE and implement the recommendations. Monitor energy and waste use.

Evaluate successes.
Energy Efficient rating based on hotel size

“Energy-efficiency and conservation in hotels towards sustainable tourism.”

David Rezachek, Department of energy technology
Royal Institute of Technology
Stockholm, Sweden

<table>
<thead>
<tr>
<th>Efficiency rating</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A) Large hotels (more than 150 rooms) with air conditioning, laundry and indoor swimming pool</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity (kWh/m²/year)</td>
<td>&lt; 165</td>
<td>165-200</td>
<td>200-250</td>
<td>&gt; 250</td>
</tr>
<tr>
<td>Fuel (kWh/m²/year)</td>
<td>&lt; 200</td>
<td>200-240</td>
<td>240-300</td>
<td>&gt; 300</td>
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<tr>
<td>Total (kWh/m²/year)</td>
<td>&lt; 365</td>
<td>365-440</td>
<td>440-550</td>
<td>&gt; 550</td>
</tr>
<tr>
<td>Hot water (kWh/m²/year)</td>
<td>&lt; 220</td>
<td>230-280</td>
<td>280-320</td>
<td>&gt; 320</td>
</tr>
<tr>
<td><strong>B) Medium-sized hotels (50-150 rooms) without laundry, with heating and air conditioning in some areas</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity (kWh/m²/year)</td>
<td>&lt; 70</td>
<td>70-90</td>
<td>90-120</td>
<td>&gt; 120</td>
</tr>
<tr>
<td>Fuel (kWh/m²/year)</td>
<td>&lt; 190</td>
<td>190-230</td>
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<td>&gt; 260</td>
</tr>
<tr>
<td>Total (kWh/m²/year)</td>
<td>&lt; 260</td>
<td>260-320</td>
<td>320-380</td>
<td>&gt; 380</td>
</tr>
<tr>
<td>Hot water (kWh/m²/year)</td>
<td>&lt; 160</td>
<td>160-185</td>
<td>185-220</td>
<td>&gt; 220</td>
</tr>
<tr>
<td><strong>C) Small hotels (4-50 rooms) without laundry, with heating and air conditioning in some areas</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Electricity (kWh/m²/year)</td>
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<td>Fuel (kWh/m²/year)</td>
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<td>210-240</td>
<td>&gt; 240</td>
</tr>
<tr>
<td>Total (kWh/m²/year)</td>
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<td>290-340</td>
<td>&gt; 340</td>
</tr>
<tr>
<td>Hot water (kWh/m²/year)</td>
<td>&lt; 120</td>
<td>120-140</td>
<td>140-160</td>
<td>&gt; 160</td>
</tr>
</tbody>
</table>
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**20 Step Energy Map**

**COMMIT**
- Step 1: Senior Management Commitment
- Step 2: Appoint senior manager to Energy MAP
- Step 3: Appoint Energy MAP coordinator
- Step 4: Establish an Energy MAP team
- Step 5: Establish an Energy MAP Policy

**IDENTIFY**
- Step 6: Develop and overview total energy consumption
- Step 7: Survey energy use & identify significant energy users
- Step 8: Identify key factors that influence energy consumption & Energy Performance Indicators
- Step 9: Identify energy saving opportunities

**PLAN**
- Step 10: Set objectives and targets
- Step 11: Establish Programme Plan
- Step 12: Formally allocate sufficient human, financial & systems resources

**TAKE ACTION**
- Step 13: Implement the Programme Plan
- Step 14: Promote energy efficiency awareness and practices amongst employees
- Step 15: Train key personnel in energy efficient practices
- Step 16: Operate, maintain, purchase & design significant energy users efficiently

**REVIEW**
- Step 17: Continuously measure & monitor energy performance & check against targets
- Step 18: Identify & implement corrective and preventative actions
- Step 19: Periodically review Energy MAP and identify improvements
- Step 20: Management Review of Energy Map
The Wattics story: In Good Hands

- Technology Innovators
- Multidisciplinary energy expertise in-house
- Acclaimed business
- Strong client focus
Wattics today

- Irish company operational in 5 countries
- Established resellers in South Africa and mainland Europe
- 15 employees in ROI
- Endorsed by major Irish green bodies

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Wattics Client Benefits

- Wastage Identified and removed for our clients averaging **23%**
- Add value - not just to the bottom line but to the environment and society at large
- Improve Green Image and Corporate Sustainability
- Reduce hardware & installation cost greatly
- Demonstrated a ROI within 12-18 months
- A unique technology and awarded online dashboard
Wattics delivered significant savings

"Fascinating technology! I have been working with the Wattics team for years and I have been amazed at the depth in which the reports go into each appliance by simply clipping a standard meter onto the boards, which allowed us achieving more than 25% reduction on the monitored distribution board for our air handling units.

John Corroon, Lead maintenance manager, Jury's Inn Custom House

40% drop in lighting and 50% drop in refrigeration energy use

The Wattics System is Brilliant!

The store utilized the online Wattics dashboard to track the cost benefit of the energy efficiency upgrade work both site wide and at electricity appliance level. That proved to be successful in reducing energy wastage and improving the energy efficiency of equipment within the store seeing energy use fall by as much as 40% for lighting and by close to 50% for refrigeration.

Sean Caulfield, Store manager Centra

Wattics created energy efficiency in CIT Tourism & Hospitality department

"We are extremely happy with the Wattics appliance-level management solution installed in our Tourism and Hospitality department as part of our Green Team Initiative in collaboration with Clean Technology Centre. The system has proven to be highly reliable and has been key to assist our future culinary and hospitality students to be aware of kitchen equipment operational costs and to be alerted when appliances are not in use to reduce power consumption.

We highly recommend Wattics one-meter management solution as a teaching tool for any organisation who wishes to increase and develop energy awareness and cost benefit analysis to students or to the wider industry."

Patricia Madden, Head of Green Team at Department of Tourism & Hospitality, Cork Institute of Technology

Green Tourism Gold Award

In August 2013, the Wattics team developed a bespoke screen for the reception connected to the TVs in the rooms to monitor in real time electricity, gas & water to inform the clients of the green & sustainable policy of the hotel, which helped achieving the gold Green Tourism award 2013
The W-Box
Questions are welcome

Thank you

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