

P2 Resources for the Hospitality Industry

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Cost-Saving Opportunities with Renewables and Pollution Prevention (P2)

Hotel Operations/Hotel Statement

New and revolutionary improvements have created higher standards in renewable energy technology. Hotels, resorts and lodging industries are implementing small-scale business solutions to meet their energy demands. This resource summary will address the ways in which investing in renewable energy, utilizing combined heat and power system, and leveraging tax incentives may be rewarding solutions. Renewable energy is a form of energy that is able to be easily and readily replaced. This includes solar, wind, hydroelectric and geothermal. Energy conservation can be accomplished by using energy efficiently and decreasing the rate of consumption. This practice will contribute to increased financial capital, environmental quality and guest awareness.

Combined Heat and Power System (CHP System)

CHP System technology creates thermal energy by capturing excess heat and electricity that would have been wasted and redistributes it for both cooling and heating. Wasted energy is often close to 15% for cooling, while space and water heating combined waste roughly 48% annually. This technology demands lower inputs of fuel to deliver the same amount of energy which can reduce operating costs up to 40%.^{1, 2}

Some of the benefits that CHP Systems offer include:

- Decreased energy cost
- Enhanced energy resiliency
- Reduced dependency on fluctuating or unstable energy prices
- Increased economic competitiveness³

Solar Energy

The sun emits an extremely large amount of energy which can be harvested through use of photovoltaic cells. The National Aeronautics and Space Administration (NASA) has been a proponent of solar panel usage for decades. Now, businesses that are invested in solar are starting to reap the rewards of long-term cost savings and increases in property values. Hoteliers can get a better idea of how solar energy may help to reduce their operating costs by examining the Investments Tax Credits (ITC) supported by the United States Government, now extended through 2023.⁴ While upfront cost may be high, many businesses that take advantage of government incentives can recoup up to 80% of the initial investment.⁵

Wind and Hydroelectric Power

The generation of renewable energy through wind and hydroelectric technology offsets the cost of buying electrical power from a utility provider and any excess power generated can be sold back into the grid. **Wind power** uses air flow to convert kinetic energy into electricity.⁶ Technological advancements have made windmills quieter and more aesthetically-pleasing, which has created a positive perception of windmills around the city. Due to consistent Federal Tax Incentives for wind technology improvements, these projects have been receiving "\$2.3 cent/kWh credit."⁷ **Hydroelectric power** is generated by using the movement of water to turn turbines and produce electricity.⁸ Hotels and resorts that have a suitable site near a body of running water can use this technology to maximize their electricity production. Hydroelectric power can provide a reliable source of energy for many years to come. The return on investment for this technology ranges from 5 to 20 years and is dependent upon both state and local tax incentives.⁹

Solar Water Systems and Geothermal Power

Solar Water System– In many cases, water heating makes up one-third of the total energy used in a hotel's daily operations.¹⁰ The solar water heating system provides energy savings by preheating the water. The climate of the region, how much hot water is used, the desired water temperature and the overall system health/performance will determine the cost savings. Usually, the installation of the system will decrease water heating bills by 50% to 80%.¹¹

Geothermal Power– Leveraging the Earth's thermal energy requires the installation of a geothermal heat pump. When deciding to use this type of energy, consult with local authorities because permitting will be needed. Through Federal and State incentives and other provided programs, many participating businesses can receive tax credits of 10% of its initial cost.¹²

Why Invest in Renewable Energy?

Many companies that choose to invest in renewable energy do so in order to decrease energy bills, take advantage of incentives and tax credits, and garner a positive public perception of their business. The demand for renewable energy is increasing at a consistently quick rate and this trend is attributed to the unpredictability of crude oil prices. The technology that is used to produce renewable energy systems generates far less water and air pollution and it helps improve public health. Furthermore, facilities can continue to operate at very low cost which helps to stabilize energy prices for the future. By investing in renewable energy, the tourism and lodging industry would also support the creation of local employment opportunities. It is essential that facilities explore different ways of energy saving to help reduce pollution while





saving money. The Arizona Lodging and Tourism Association's Green Certification program provides many free educational tools and resources that can help a business to identify areas of opportunity.¹³ The program also outlines different ways to implement best practices. Additionally, many renewable energy systems are modular. If one component of the system becomes damaged, the integrity of the system's operations will not be compromised; it can still continue producing electricity.¹⁴ This provides the owner with not only the peace of mind knowing that energy production will not stop, but also the flexibility to schedule repairs at a time when doing so will not impact hotel operations.

Federal and State Tax Incentives

Eligibility for tax incentives at the federal level depend on the technology that is being used and on the size of the system. This program offers incentives that vary from 30% for solar-water-heat to 10% for combined heat and power.¹² Each state has its own rules and regulations on the tax incentives. In Arizona, programs that involve solar energy tax credits incentivize businesses to use tax credits to offset the cost of installation and can be claimed on annual taxes for up to five years.¹⁵ Renewable Energy Tax Credit Incentives are administered by the Arizona Chamber of Commerce. Programs are offered that include 10% refundable tax credit and 75% reduction on real estate and personal property taxes.¹⁶

Guest Perception

The increased environmental awareness in the last decade is having a profound impact on the lodging industry. Today, people are becoming more environmentally-conscious, and it is observed that hotels are starting to invest more into green certification programs. Many tourists and travelers are actively seeking hotels that have established policies and procedures that explicitly show their commitment to reduce their impact on the environment. A recent survey of 1300 participants determined that about 62% already regularly favor environmentally-conscious hotels and businesses. Additionally, 69% plan to incorporate more environmentally-friendly locations, activities and processes in their future travels.¹⁷

Ultimately, this means that the hospitality industry must redirect its products, services and day-to-day activities to reflect that of consumer preferences and demands in the market.

References

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