



## SHOWCASE PROJECT: JW MARRIOTT HOTEL CERTIFIED TO SUPERIOR ENERGY PERFORMANCE 50001™ PROGRAM

### SOLUTION OVERVIEW

JW Marriott Washington, DC, is a luxury hotel situated on Pennsylvania Avenue, in the heart of the nation's capital. With 777 rooms and suites, the hotel offers dining options, a 24-hour fitness center, a business center, 29 meeting rooms, and 34,696 square feet of event space. The hotel is owned by Host Hotels and Resorts and managed as part of Marriott International, Inc. Both companies have corporate sustainability goals and support sustainability efforts, and they have provided the JW Marriott Washington, DC, with strong backing to pursue ISO 50001 and Superior Energy Performance 50001™ (SEP 50001™) certification.

In September 2013, the Washington, DC, venue certified to ISO 50001 and, in 2016, became the first Marriott hotel to achieve certification to the SEP 50001 program at the Platinum level, with a verified 16.5% energy performance improvement since 2012. The hotel has consistently enhanced its energy management system (EnMS) to continue and extend its benefits. In May 2021, this JW Marriott facility again certified to the SEP 50001 program and received elevated recognition at the Platinum level using the *SEP 50001 Scorecard*. The certification covers all business operations at the site and includes 695,364 square feet of the facility, where roughly 400 associates are employed.

As part of a commitment to its community and to the environment, the facility focuses not just on energy but on sustainability across the board. To minimize the hotel's footprint, management seeks to manage both energy and water use, reduce waste and carbon emissions, and increase the use of renewable energy. Among other initiatives, the energy team is currently seeking city approval for a solar panel project, examining residential amenities to reduce plastic used in small shampoo bottles, and considering ways to lessen food waste. In addition to its SEP 50001 program certification, the hotel received the 2014 Northeast Business Leader for Energy Efficiency award from NEEP (Northeast Energy Efficiency Partnership) and is currently pursuing LEED-EBOM (Leadership in Energy and Environmental Design – Existing Buildings: Operations & Maintenance) and ENERGY STAR certifications.

*"Marriott International has a corporate goal to achieve a minimum of 30% renewable energy use and reduce the environmental footprint by cutting water intensity by 15%, carbon intensity by 30%, and waste-to-landfill by 45% across the portfolio by 2025. At the JW Marriott Washington, DC, SEP 50001 and ISO 50001 are important tools to help reach these 2025 targets."*

*Tushaar Agrawal, General Manager, JW Marriott Washington, DC*

### LOCATION

Washington, District Of Columbia

## SOLUTIONS

Marriott International established an energy team that encourages use of energy measurement, monitoring, and reporting tools as well as robust energy awareness and reduction processes in every Marriott hotel. Top management at the JW Marriott Washington, DC, followed suit, creating an energy action committee that involves key representatives from each department. The committee combined the corporate tools with SEP 50001 guidance to support ISO 50001 EnMS implementation.

The Marriott International energy team sets goals for each property, so the JW Marriott Washington, DC, has an energy reduction goal each year. Because the DC location has had a certified EnMS in place for several years, the margin for opportunity is growing thinner and thinner—yet the energy action committee uses the goal, and the challenge, as motivation for continual improvement. Hotel staff look for every possible energy-saving opportunity in an effort to outperform the goal.

As a result, the JW Marriott Washington, DC, team has achieved 7.8% energy performance improvement over the past three years (as of May 2021)—building on the 16.5% improvement over the three years that earned the hotel its original SEP 50001 recognition at the Platinum level.

*“Working toward SEP 50001 certification helped the hotel to merge existing resources and energy conservation best practices, provided by the Marriott International energy team, with SEP 50001 guidelines. The combination helped us save time and effort, establish robust processes and communication pathways, and hold ourselves accountable for consistently delivering results.”*

*Rajaram Srinivasan, Director of Engineering, JW Marriott Washington, DC*

SEP 50001 Energy Management Strategies

The DC venue's success can be attributed to systematic, carefully planned and executed strategies.

- **Regular energy performance reviews.** The general manager, director of finance, and director of engineering hold monthly energy critique meetings to review energy use vs. energy goals, validate energy savings, and take corrective actions when targets are not being met. Monthly energy usage analysis reports help to identify equipment and procedures that use significant energy, with daily utility meter readings helping to narrow the focus. In addition, top management conducts annual reviews of energy baselines and usage trends, plans and actions, and EnMS objectives and targets. Year-end energy usage summary reports are used to determine whether current strategies have been successful.
- **Training and documented guidance.** Georgia Tech energy experts were brought in to train the energy action committee in EnMS implementation and internal audit processes. Engineers receive regular training in new equipment and technology. Hotel associates receive training in energy management during associate meetings and are taught role-related energy-saving procedures (e.g., kitchen associates must turn off gas burners when they are not in use). The JW Marriott Washington, DC, developed an energy manual that

details all available tools and resources for successful implementation of EnMS. The manual has been helpful not only internally but also to other Marriott hotels adopting an EnMS.

- **Communication and hotel-wide engagement.** To build energy awareness among all staff, management created a communication board, prominently displayed in a common area. In addition, everyone is given a two-page energy action flyer for reference. The document includes historical energy performance and a message from the general manager about the importance of energy management, reinforcing that the commitment starts at the top. The JW Marriott Washington, DC, also held an energy awareness poster competition to spur associate involvement. The department heads that are part of the energy action committee are good disseminators of information. They know best how to share the information in ways that speak to their teams.

*“Hotel staff are engaged and enthusiastic. ISO 50001 helped create awareness from day one in 2013, and employees continue to participate in 2021. During our last SEP 50001 audit, the auditor checked in and asked the front desk about the energy goal, and the associate knew it was 0.5% of annual savings. That tells us that the communication is working—it’s engaging the associates.”*

*Rajaram Srinivasan, Director of Engineering, JW Marriott Washington, DC*

- **External support and incentives.** When considering a project, the energy action committee looks at incentives available in the market that will make energy improvement opportunities more attractive to management. The hotel works with the District of Columbia Sustainable Energy Utility (DCSEU), the Washington, DC, agency that runs energy efficiency programs and provides rebates. In addition to providing incentives, the DCSEU has helped with conducting site surveys and validating project energy savings. The incentive improves the return on investment, increasing the benefits.
- **Analyses to inform decision-making.** The energy action committee conducts lifecycle cost analyses when considering new technologies. The analysis considers the benefits associated with the new technology, including rebates and improved energy efficiency, and compares the results to the costs of maintaining the old equipment. For example, the guest rooms had 30+-year-old fan coil units (FCUs). The energy action committee conducted an experiment to compare replacing the FCUs with refurbishing them, installing an energy-efficient FCU in one room and doing a refurbishment in a second room. A meter was put in each room. The committee observed the performance for a week and compared the results. When energy savings were considered, the cost involved in maintaining the old unit was much higher than the cost to purchase and install a new unit. Hotel ownership approved an across-the-board upgrade.

Below are examples of other energy savings opportunities that have been identified and implemented while following SEP 50001 and ISO 50001 guidance.

- In accordance with ISO 50001, management sought to identify equipment with the greatest energy use and determined the hotel’s chiller was the most significant energy consumer. The hotel then implemented a diagnostic tool to fine-tune the settings of the chiller system so that it performs at maximal efficiency. Associated energy use was reduced from 0.96 kW/ton to 0.79 kW/ton.

- The hotel has three booster pumps that pump water into the 15-story building. Before EnMS implementation, the hotel ran at least two of these pumps at full speed, 24-7, to maintain water pressure. Now the facility has an automated booster system and requires only one pump to run at 60% to 70% speed, yielding tremendous savings.
- One of the SEP 50001 requirements is to implement at least one energy project per energy source. The JW Marriott Washington, DC, had several projects to reduce electricity use but none to address gas consumption. The energy action committee considered the water heaters, which were relatively new (and thus not due for replacement with more efficient equipment). The team recognized an opportunity in the facility's hot water storage tank. Initially, the hotel had selected a set point temperature of 160°, even though the water is supplied to guest rooms at only 125°. The energy action committee opted to reduce the set point to 140°, reducing gas consumption without sacrificing capacity.

## **OTHER BENEFITS**

The impressive energy savings realized over the past three years have helped the JW Marriott Washington, DC, to save \$221,551. In addition to energy performance improvement, the hotel has reduced CO<sub>2</sub> emissions by 725.43 metric tons. This success supports Marriott International's carbon reduction goal.

Beyond that, the hotel's sustainability successes have had a positive impact on sales. More and more clients—especially groups—are looking for environmentally friendly hotels that provide guests with sustainable options. Customers are recognizing that Marriott cares about energy conservation—and having third-party certification supports the hotel's claims of being good environmental stewards.

**Annual Energy Use**

**Annual Energy Cost**

**Energy Savings**

**Cost Savings**



In May 2021, the JW Marriott in Washington, DC, achieved SEP 50001 program certification with elevated Platinum recognition. Photo credit: Marriott International



Dedicated associates contribute to guest satisfaction and energy management at JW Marriott. Photo credit: JW Marriott Washington, DC