

## JOHNSON CONTROLS: SUPPLIER EFFICIENCY PROGRAM

### SOLUTION OVERVIEW

Johnson Controls, a global multi-industrial company with established core businesses in the automotive and building industries, launched a pilot supplier efficiency program which includes energy management experts visiting the plants of SME suppliers and training their in-house teams on low-cost/no-cost energy efficiency best practices. Johnson Controls' experts visit supplier sites to lead on-site assessments, share efficiency checklists and tools, and provide guidance on developing business cases for capital improvements. The on-site assessments follow an industry practice known as "energy hunts" which Johnson Controls has used successfully for years to engage facility staff across its plants in identifying and implementing low-cost/no-cost energy savings measures. Energy hunts at supplier facilities have resulted in average savings estimates in the range of 5-10%.

Johnson Controls had been surveying and auditing suppliers on energy and sustainability for many years and asked over 200 of its largest suppliers to annually report to the Carbon Disclosure Project supply chain program. While Johnson Controls had provided many of its suppliers with basic training webinars on energy management and carbon accounting, the company wanted to take a more hands-on approach to helping its small and medium-sized suppliers become more energy and resource efficient. JCI also believed that a hands-on approach, leveraging practices and tools successfully implemented in its own plants, would demonstrate commitment to helping its suppliers make improvements.

### Tools:

- [Link to Program Overview Presentation](#)
- [Link to Supplier Sustainability Survey in JCI website](#)

### ORGANIZATION TYPE

Diversified product manufacturer in the building, energy storage and automotive industries

### BARRIER

Ability to scale up efforts to help small- and medium-sized (SME) suppliers improve the energy efficiency of their plants

### SOLUTION

Development of a standard, scalable program that provides SME suppliers with energy

management tools, training and on-site technical assistance

## **OUTCOME**

Energy savings across the supply chain by increasing the number of SME suppliers trained to identify and implement low-cost/no-cost energy efficiency improvements in their plants

## **POLICIES**

Like many large manufacturing companies, the environmental footprint of Johnson Controls' supply chain is up to five times larger than the environmental footprint of its internal operations. The company decided that working with SME suppliers, which often have limited resources and expertise, could provide significant environmental benefits while helping the suppliers reduce energy costs, increase their competitiveness, and minimize the impact of future energy price increases and water shortages on their operations. Similar to other large manufacturers, Johnson Controls success is linked to the competitiveness, sustainability and resilience of its diverse supply base, all of which are enhanced through improved energy and resource efficiency.

Many of Johnson Controls' suppliers are small and medium-sized companies which lack the time and resources to investigate and implement resource efficiency improvements. While the percentage energy savings opportunity is often significant, the total financial impact can be relatively small for suppliers running a lean operation. In order to address this barrier, the company streamlined the supplier efficiency program to reduce the time to report and cut back on information requirements. This allowed plant operations teams to focus on improvements that are easier to evaluate and implement and faster to achieve savings. Johnson Controls invested about a month of cumulative effort to develop the program and commits about two days of staff time per site visit.

## **PROCESS**

The program is voluntary. Once a supplier expresses an interest to participate in the program, the supplier provides basic information about the facility along with monthly energy utility bill data to Johnson Controls' supplier efficiency program team. An on-site training and facility assessment is then scheduled which begins with a kick-off meeting and training on basic energy management practices. Brainstorming is then used to identify potential energy savings opportunities followed by a site walk-through to validate and identify additional opportunities. The final step is to quantify and prioritize projects for implementation and debrief the plant management team. Average identified energy savings for the plants participating in the pilot program range from 5-10% for measures with less than a two year payback.

The 1-2 day on-site training and facility assessment starts with a kick-off meeting with plant leadership participation to review the program objectives, expectations, roles and responsibilities and the agenda for the day. Basic training is then provided to the plant energy team on compressed air, lighting, HVAC, energy management, equipment scheduling and employee engagement and

awareness. The training is a simplified version of a standard Energy Hunt process that has been standardized and used by Johnson Controls across its manufacturing facilities ([see this guidebook on implementing Energy Treasure Hunts, produced by the U.S. Environmental Protection Agency's ENERGY STAR Program](#)). Brainstorming with plant personnel is then used to create a preliminary opportunity list which is later validated during the site walk-through. These opportunities, as well as others identified during the walk-through, are quantified using standard estimating tools and prioritized for implementation. At a final debrief session, the prioritized list of projects and a preliminary business case is presented to plant management. The supplier decides which projects to implement with advice from Johnson Controls as needed.

#### **Tools:**

- [EPA Treasure Hunt Guide](#)

#### **OUTREACH**

The pilot supplier efficiency program was announced at an annual supplier conference in 2013 and offered to all interested suppliers. In order to participate, suppliers agree to provide basic information about the plant and current energy use, make key personnel available for a one day on-site training and site-assessment, to implement one or more of the identified low-cost/no-cost improvements identified during the on-site assessment and to provide written verification of project completion.

One concern for suppliers is the fear that any cost savings which the customer helps the supplier achieve will be expected to translate immediately into supplier price reductions. Johnson Controls built up a “fire wall” between procurement and the supplier efficiency program team to reduce these concerns. The supplier efficiency program team also aggregates the savings estimates for both internal and external reporting to protect commercially sensitive information.

#### **Tools:**

- [Link to Supplier Efficiency Program Additional Terms](#)

#### **OUTCOMES**

Participants in the supplier efficiency program typically identified 5-10% energy savings opportunities. While many of the low-cost/no-cost measures were implemented immediately, other improvements requiring more substantial investments were implemented later as funding became available. The following comments from an early pilot program participant best sum up the initiative's results from the supplier's perspective.

“A great program! Drove our costs down without capital expense. Changed our culture regarding how we look at energy. Since this program, we have looked at six other energy savings opportunities.” Mark Brown, Engineering Manager, Wolverine Tube

Wolverine Tube, a twenty-year preferred supplier of copper tubing and heat transfer products to Johnson Controls, participated in the pilot supplier efficiency program at its 325,000 square foot manufacturing facility in Shawnee, Oklahoma. A core team of eight plant personnel were trained and participated in the site assessment. After the assessment, Wolverine Tube completed improvements

to the compressed air systems where 40% of air was being lost due to leaks.

Employee awareness training was completed along with the institutionalized leak tag program, altogether saving \$40,000 annually (3% of electric usage). Additional engagement included a “turn it off” employee awareness program focused on lighting, fans, HVAC and process equipment and the installation of occupancy sensors in offices that provided \$21,000 in annual savings. Finally, \$1,400 in water savings (1% of water baseline) were realized through implementation of a simple water leak chart

## **MEASURING SUCCESS**

Program success is measured by the number of suppliers participating in the program, the potential savings from all identified improvements with less than a two year payback and the estimated savings of all completed projects. There are additional benefits through improved supplier and community relationships. Johnson Controls also encourages all participating suppliers to participate in the DOE [Better Plants](#) or [EPA Energy Star](#) programs to help establish goals, receive recognition, implement processes and create a continuous improvement culture focused on supporting improved energy and resource efficiency.

The pilot program leveraged experienced energy management professionals from the company’s corporate energy team to provide the on-site training and facility assessments. These experts helped adapt the company’s standard energy hunt process and training materials to the needs and resources of SME suppliers. In order to more rapidly scale the program and reduce the cost of implementation, plant energy champions located at Johnson Controls manufacturing locations around the country will be used to provide the on-site training and assessments at SME supplier locations in their local community. This approach will provide additional benefits through local community and employee engagement.

