

### PURPOSE

In March 2024, ESFM's Technical Services & Energy Solutions team visited a medical device manufacturing client to train 13 of their employees to complete an Energy Treasure Hunt.

The training consists of eight hours of "class time" which details an introduction to energy concepts, energy saving calculations, and how to conduct energy treasure hunts. The employees were then divided into two teams to perform energy GEMBA walks (go & see, engage, meet, be respectful, analyze). This is the most important day to listen, learn, and communicate.

Once GEMBA is completed, it is time to perform the treasure hunt. Each team has ownership of their findings, ideas and opportunities identified. After completing the energy treasure hunt, teams collaborated with ESFM subject matter experts to translate and prioritize opportunities into actionable items.

Energy Treasure Hunts reveal low to no-cost energy saving opportunities while increasing operator knowledge and ownership.

### TEAM 1 | \$110,000

- This team focused on the second floor (including mezzanine and lab space) and rooftop of main building, and a second building used for training
- Opportunities identified included pipe insulation, LED lighting, air leaks, solar exhaust fans, HVAC air filters, cogged belts vs. v-belts, window tinting, and air compressor psi reduction
- These opportunities yield a potential annual energy savings of \$110,000

### TEAM 2 | \$203,000

- This team focused on outside dust collectors and the manufacturing area of the main building's first floor which included a foundry and mechanical room
- Air leaks and LED lighting were also identified as opportunities by this team, in addition to heat exchanger and oven insulation
- These opportunities yield a potential annual energy savings of \$203,000

### ADDITIONAL FINDINGS | \$72,000

Other findings, and potential energy savings associated, were provided by ESFM for the client. These included a cool roof (EPDM coating) installation that was underway, insulation of seven perimeter docking doors, two solar thermal water heaters (80 gal. and 130 gal.), and irrigation of 220,000 square feet of exterior landscaping, yielding a potential annual savings of \$72,000.

### CONCLUSION

After earning eight hours of continuing education units, the diverse group of employees was able to identify and quantify energy saving opportunities in dollars and CO<sub>2</sub> emissions equivalent (CO<sub>2</sub>e) across the site's two buildings. Collectively **\$385,000** of annual savings was presented, equivalent to **2,147,600 kilowatt-hours** (kWh) of electric savings and offsets and **1,500 metric tons of CO<sub>2</sub>** emissions.

After eight hours of training and 1.5 days conducting an Energy Treasure Hunt, the client's 13 employees identified opportunities that could yield **\$385,000** in annual savings, equivalent to **1,500 metric tons** of CO<sub>2</sub> emissions. This is equivalent to greenhouse gas emissions from:

**357** gasoline-powered passenger vehicles driven for one year  
**3,837,099** miles driven by an average gasoline-powered passenger vehicle