



Hands-on Guidance. Measurable Results.

SUPPLIER EFFICIENCY PROGRAM



May 2015





REACHING OUTSIDE OUR WALLS

WHAT

A scalable education and training platform that helps suppliers reduce their energy use and costs

HOW

Johnson Controls has adapted its successful Energy Hunt Program into a set of training materials for suppliers that help reduce energy use and costs through employee awareness and engagement, equipment scheduling, energy management, lighting, HVAC and compressed air

WHO

Johnson Controls' trained Energy Champions work directly with Johnson Controls suppliers

BUILDING ON OUR SUCCESS

Energy Performance

GOALS

25% Reduction in Energy Intensity 2009 to 2019

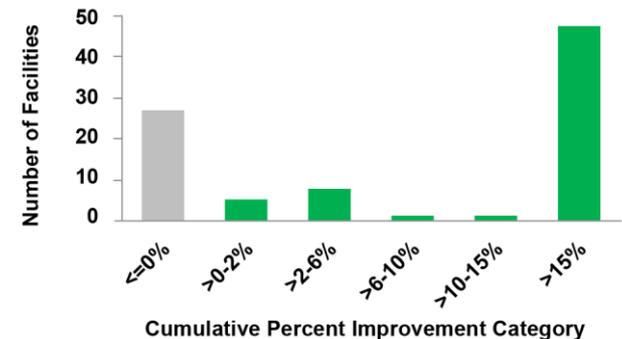
CHALLENGE COMMITMENT

97 Facilities (including 90 manufacturing plants)

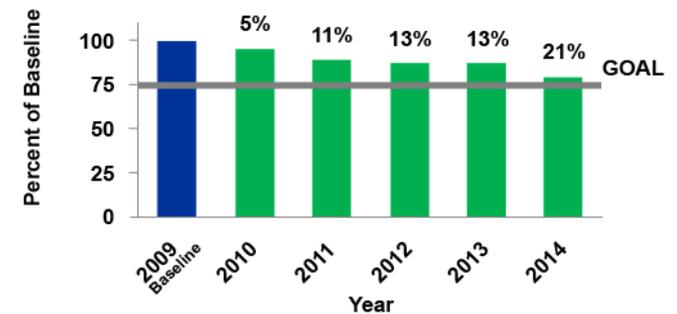
SAVINGS TO DATE

21% Cumulative (vs. baseline) **8%** Annual (2014)

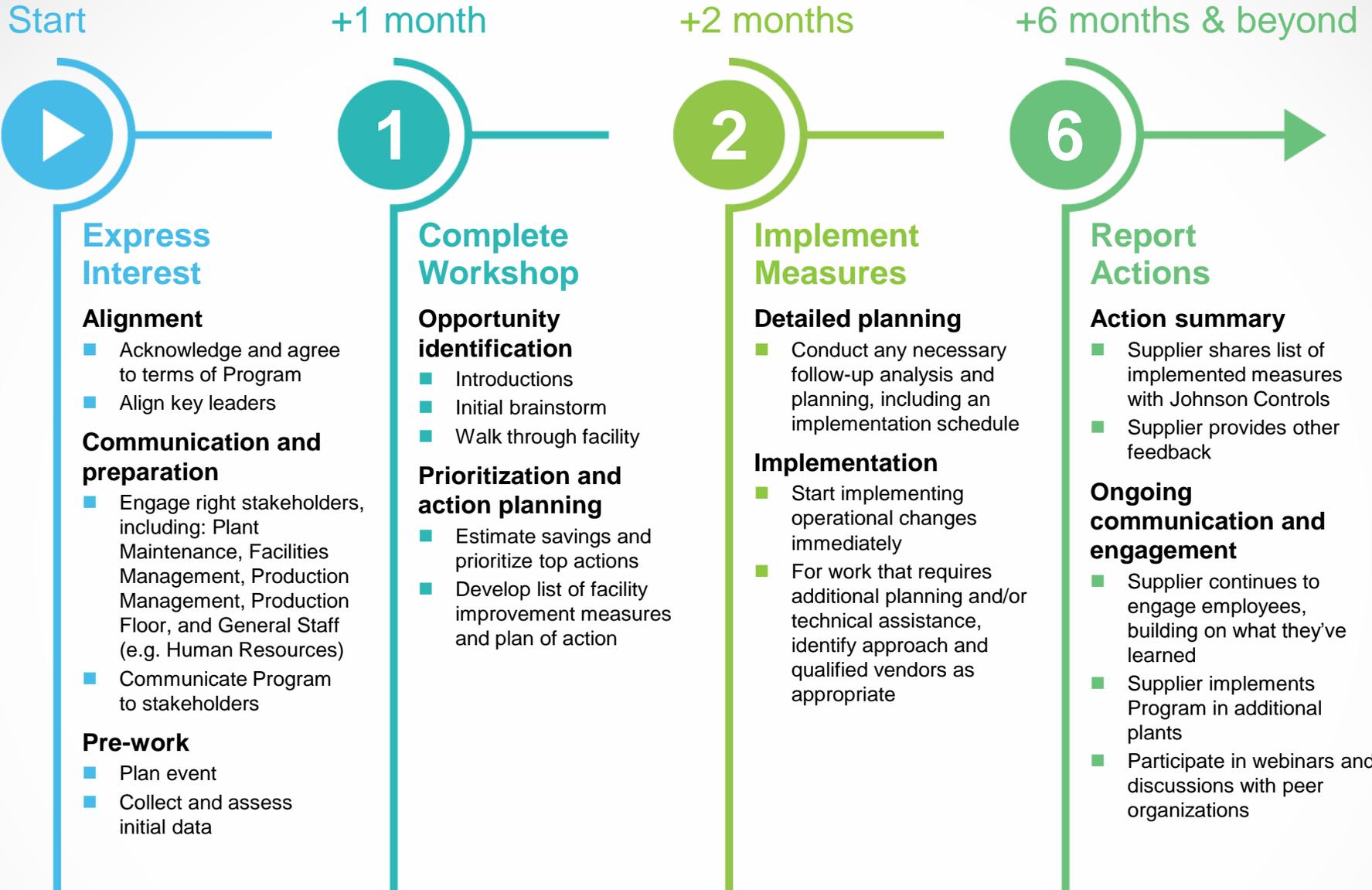
Number of Facilities by Cumulative Percent Improvement



Cumulative Percent Improvement as a Percent of Baseline



CREATING A RIPPLE EFFECT



UNCOVERING OPPORTUNITY

Example Facility Improvement Measures

System-specific measures

Lighting

- Adjusting settings and levels
- Identifying cost-effective upgrades

Heating, Ventilation and Air Conditioning (HVAC)

- Optimizing use
- Maintaining and cleaning the system

Compressed Air

- Finding and eliminating leaks
- Identifying the best use and alternatives

Cross-cutting measures

Employee Awareness and Engagement

- Identifying key stakeholders
- Maintaining equipment
- Identifying and closing leaks

Equipment Scheduling

- Turning off equipment when not in use
- Setting back temperatures

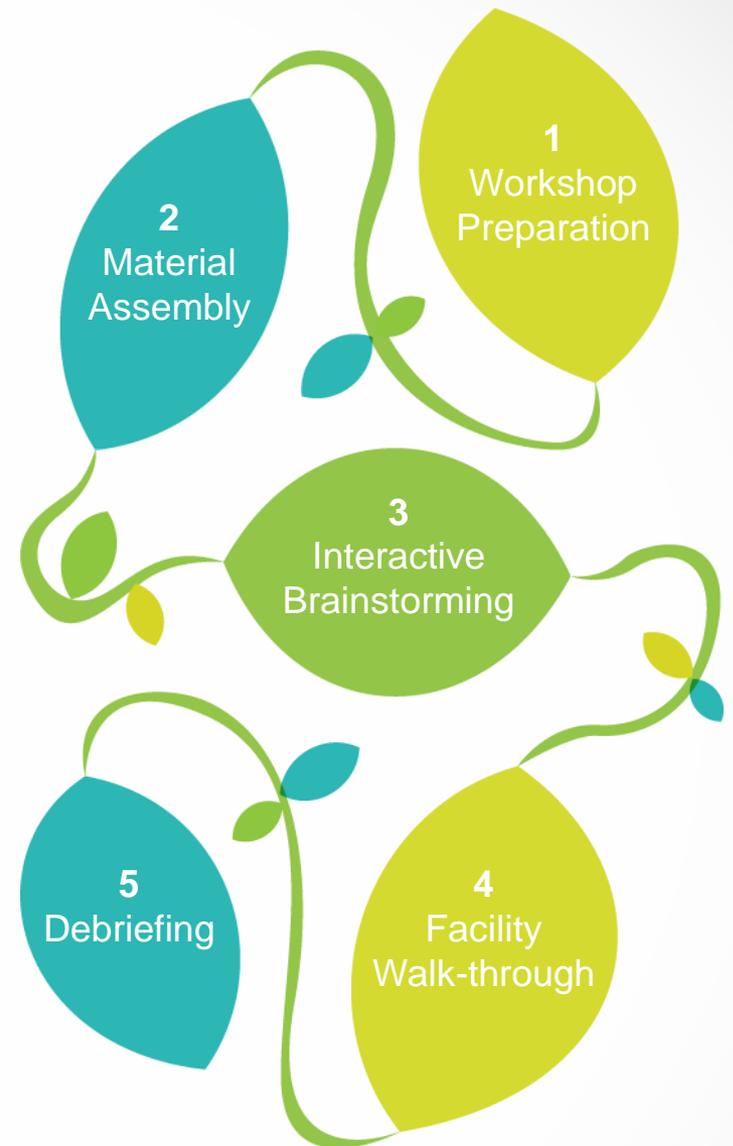
Energy Management

- Understanding utility bills and rates
- Reducing costs



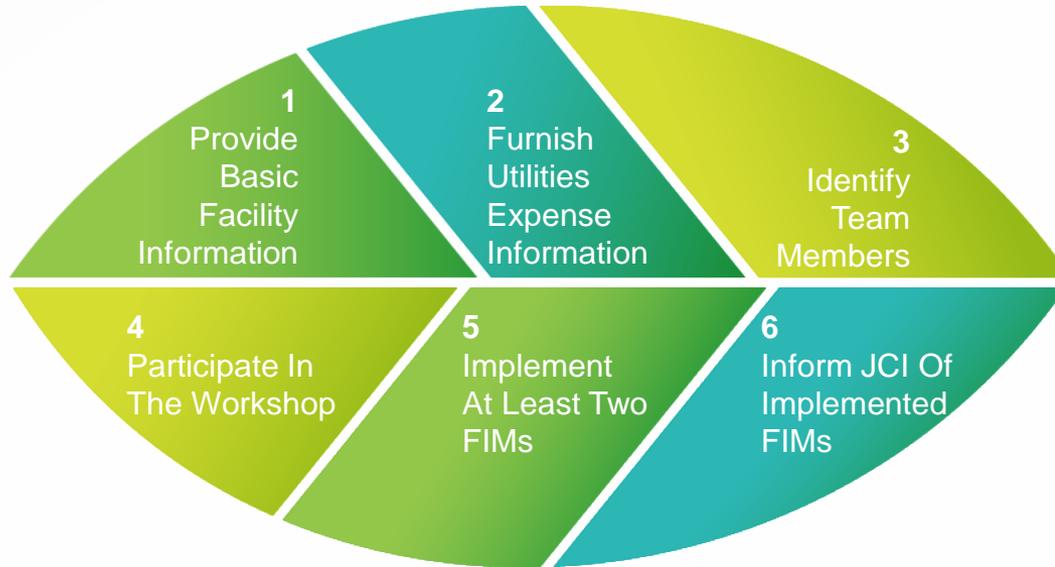
ELEMENTS OF THE PROGRAM

- A one day, on-site Supplier Efficiency Workshop (“Workshop”) for selected supplier staff which provides training on the identification of no-cost and/or low-cost Facility Improvement Measures (“FIMs”) in the areas of:
 - Employee Awareness and Engagement;
 - Equipment Scheduling;
 - Energy Management;
 - Lighting;
 - HVAC; and
 - Compressed Air.
- Training materials, including presentation slides, check lists, templates, survey forms and other relevant content
- Interactive brainstorming session during the Workshop to identify no-cost and/or low-cost FIMs specific to the facility
- A walk-through of the facility with supplier staff to identify and validate no-cost and/or low-cost FIMs
- A debriefing of the facility walk-through to plant staff and leadership, including the list of identified FIMs and recommended next steps to conclude the Workshop



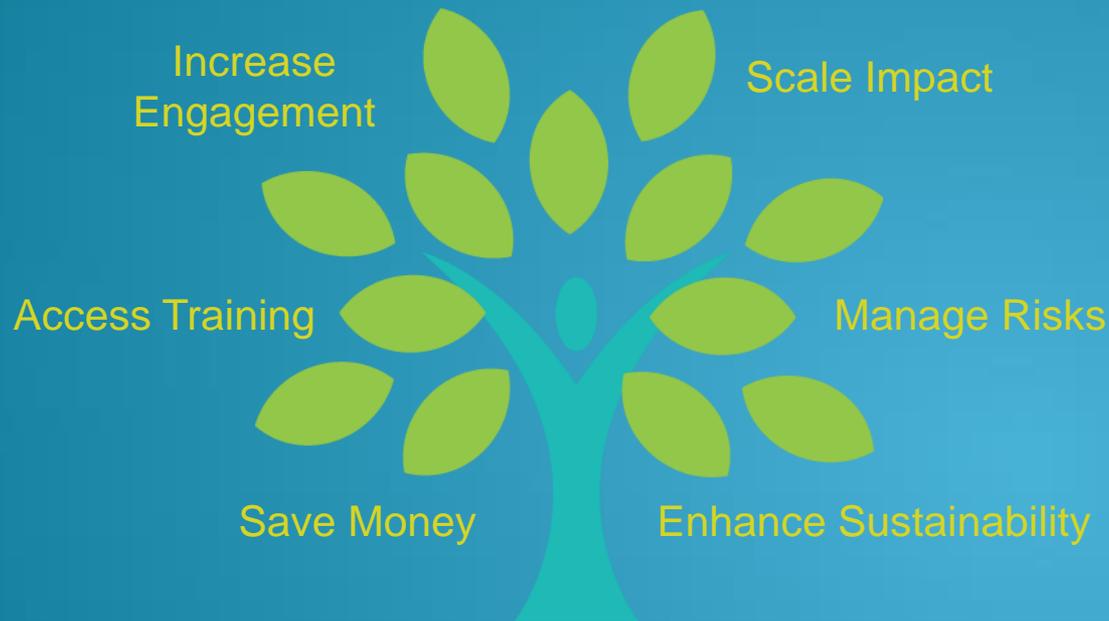
SUPPLIER RESPONSIBILITIES

As a participant of the Program



- Provide basic facility information, including square footage, floor plan, hours of operation, occupancy, etc.
- Furnish at least one year of monthly facility utility expense information (for a baseline)
- Identify the team members participating in the Workshop
- Actively participate in the Workshop (one day commitment), including escorting Johnson Controls staff during the facility walk-through
- Implement at least two facility improvement measures (FIMs) out of the identified list of FIMs within six months of date of the Workshop provided the FIMs have a simple payback of less than two years
- Inform Johnson Controls about the specific FIMs that were implemented within six months of date of the Workshop

DRIVING MEASUREABLE RESULTS

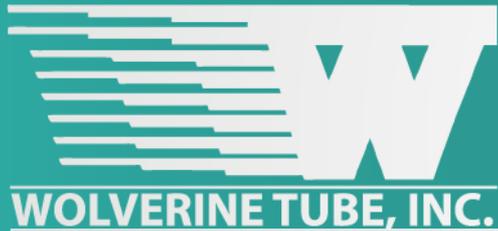


- 1. Save money:** Reduce energy costs (typical range is 5-10% savings for measures with less than a two year payback)
- 2. Enhance sustainability:** Reduce operational footprint, conserving resources and reducing emissions
- 3. Access training:** Increase energy efficiency awareness and education for supplier staff
- 4. Manage risks:** Reduce business and operational risk
- 5. Increase engagement:** Share best practices with others by networking and collaborating with other Johnson Controls suppliers and stakeholders
- 6. Scale impact:** Apply process to other facilities and continue to add scope to assessments for continuous improvement



Where they started

CASE STUDY: WOLVERINE TUBE



Preferred Supplier

20+
Years

325 Thousand
Square
Feet

575
Employees

Copper Tubing and other
Heat Transfer Products

Shawnee, OK

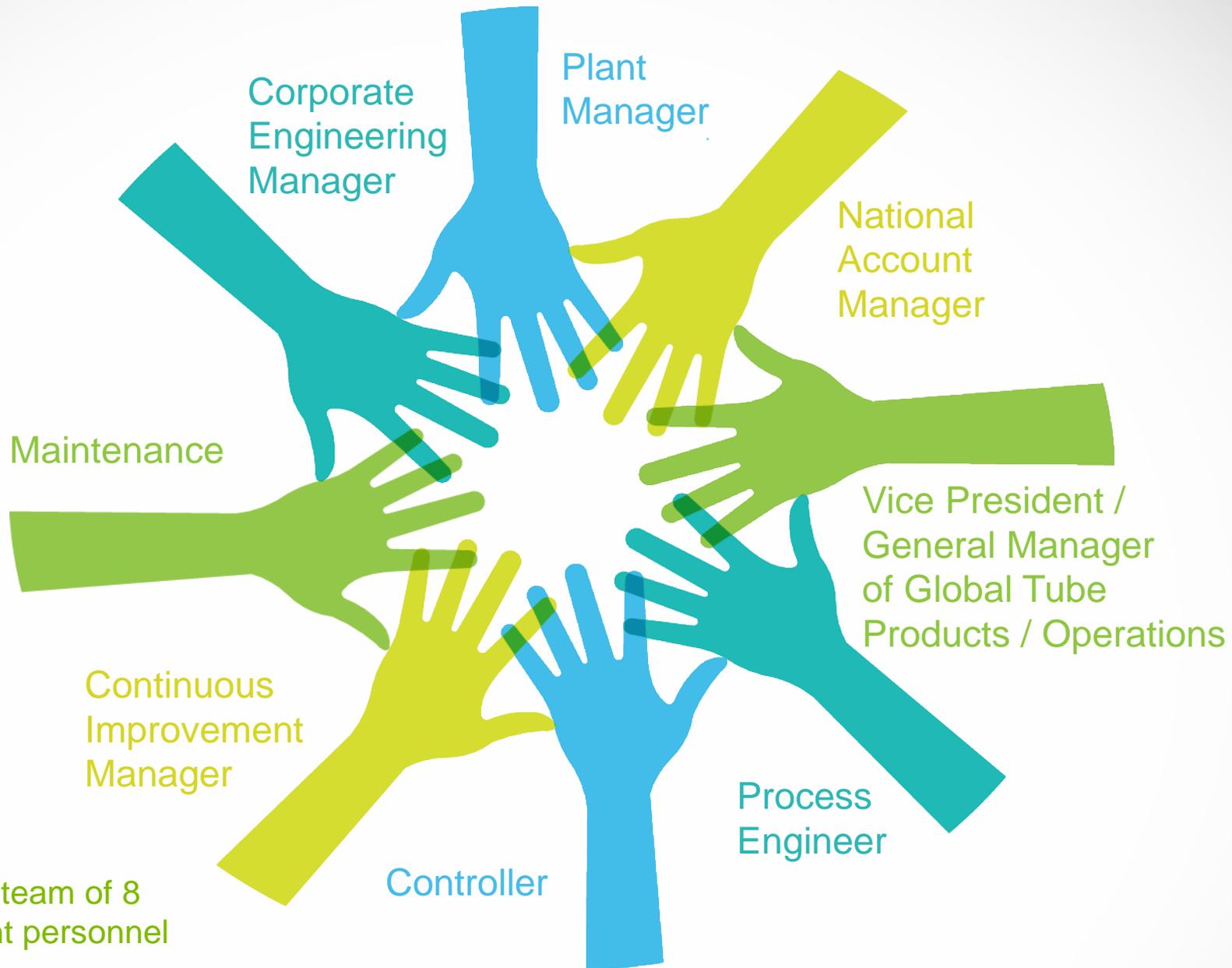


36 Year-old
Manufacturing
Facility

CARBON
DISCLOSURE
PROJECT
Supply Chain
Responder
Since 2009

CORE TEAM

Energy Hunt Participation



Engaged core team of 8 Wolverine plant personnel



What they achieved

CASE STUDY: WOLVERINE TUBE



COMPRESSED AIR SYSTEM

- Discovered that 40% of compressed air was lost in leaks
- Conducted employee training to increase awareness
- Institutionalized a leak tag program
- Made one compressor redundant

RESULTS:

3% Electric baseline
SAVED



TURN IT OFF PROGRAM

- Conducted employee training to increase awareness
- Addressed lighting, fans, HVAC and process equipment
- Installed occupancy sensors in offices

RESULTS:

1.5% Electric baseline
SAVED



WATER LEAKS

- Conducted employee training to increase awareness
- Created a “Water Leak Chart”

RESULTS:

1% Water baseline
SAVED



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
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LET'S
TALK

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