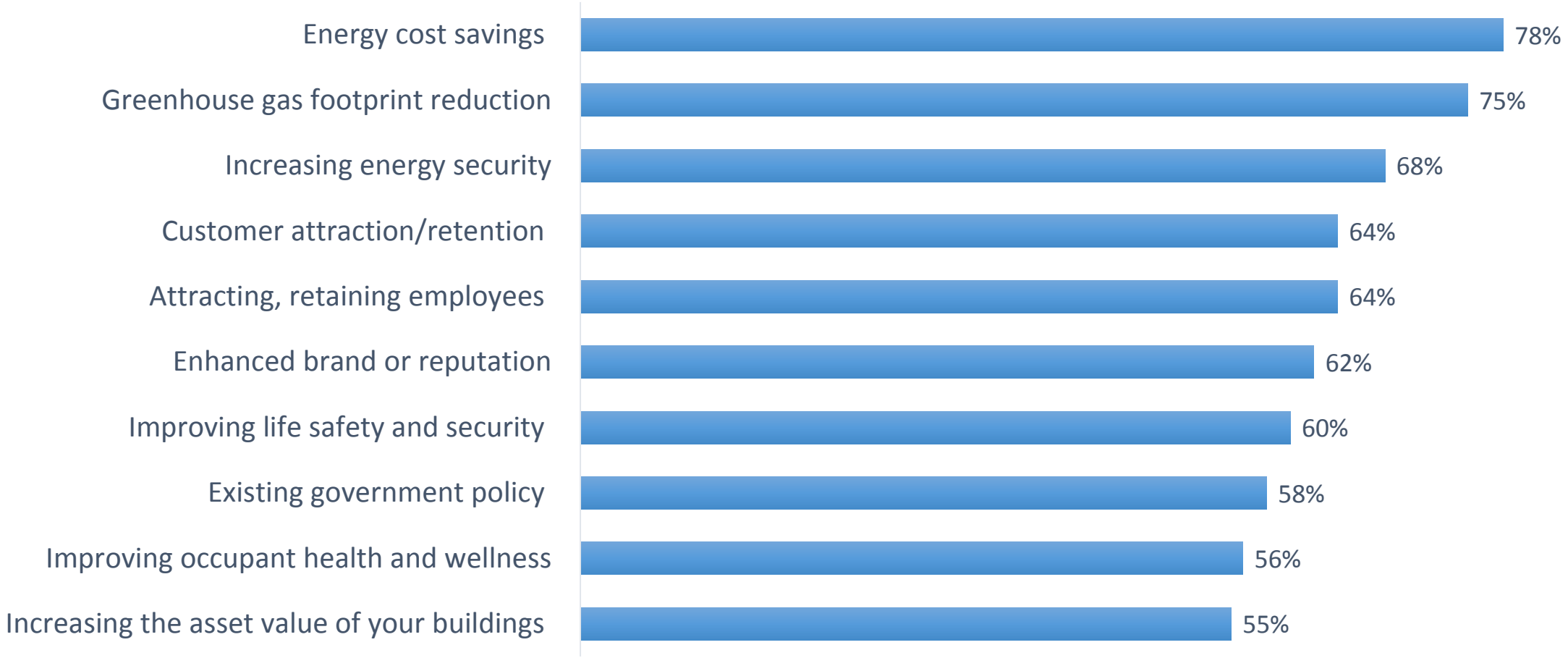
Industrial Energy Management

The role of policies, systems, programs, processes and technology

Clay Nesler
VP, Global Sustainability and Regulatory Affairs

Energy cost savings is the most important driver in energy efficiency investments in the manufacturing sector

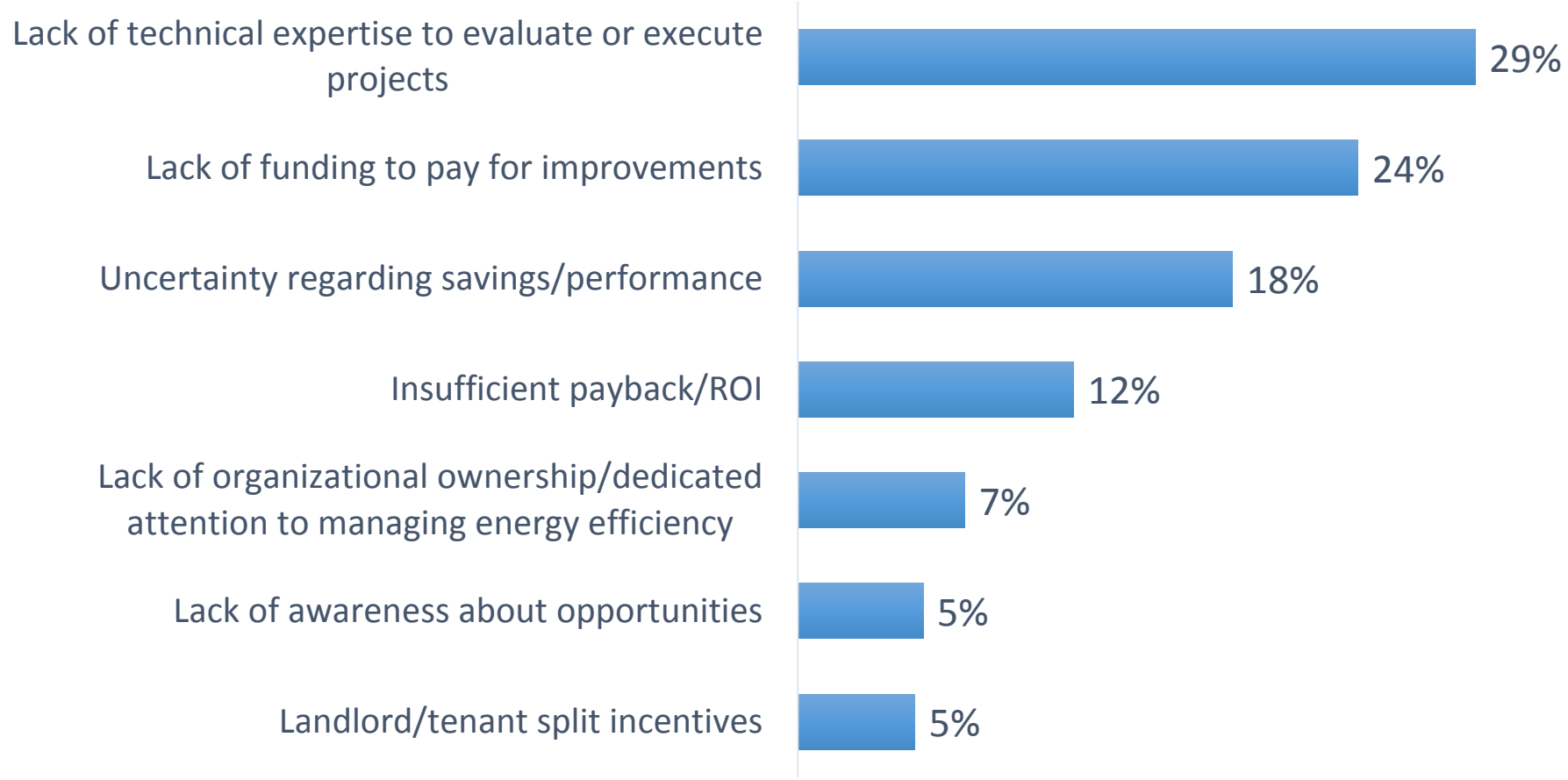
Organizations rating as very or extremely important



Johnson Controls Energy Efficiency Indicator Study (n = 282)

Lack of technical expertise to evaluate or execute projects is the biggest barrier to energy efficiency investments in the manufacturing sector

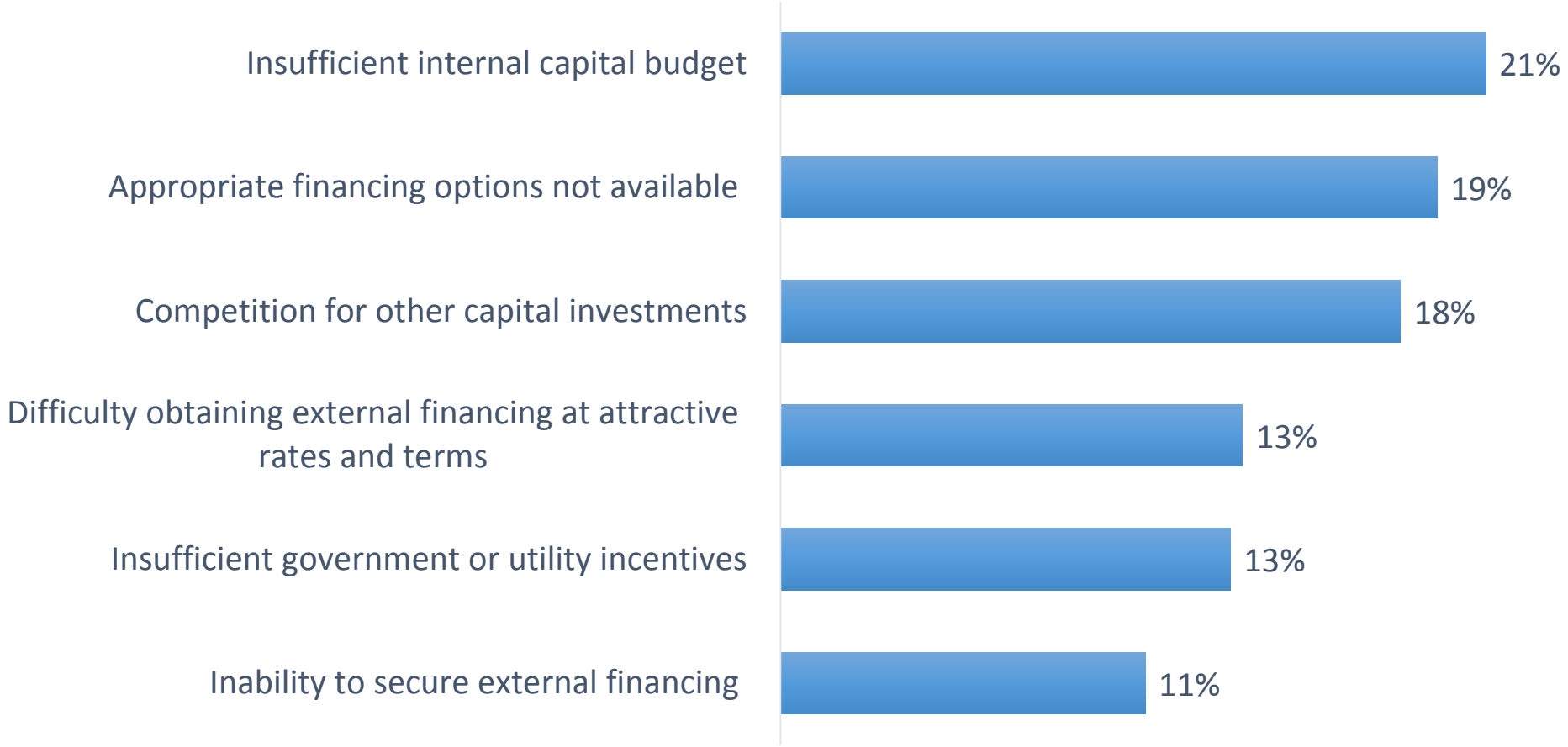
Organizations rating as the top barrier to investment



Johnson Controls Energy Efficiency Indicator Study (n = 282)

Insufficient internal capital budget is the top financial barrier to energy efficiency investments in the manufacturing sector

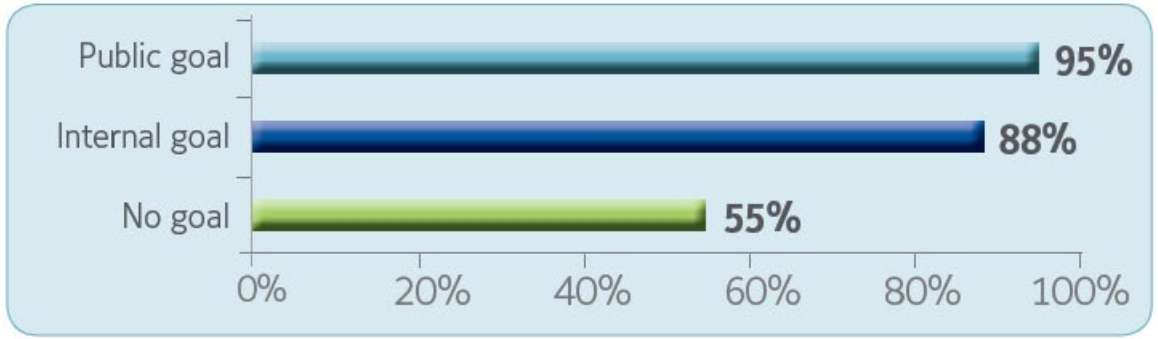
Organizations rating as the top financial barrier to investment



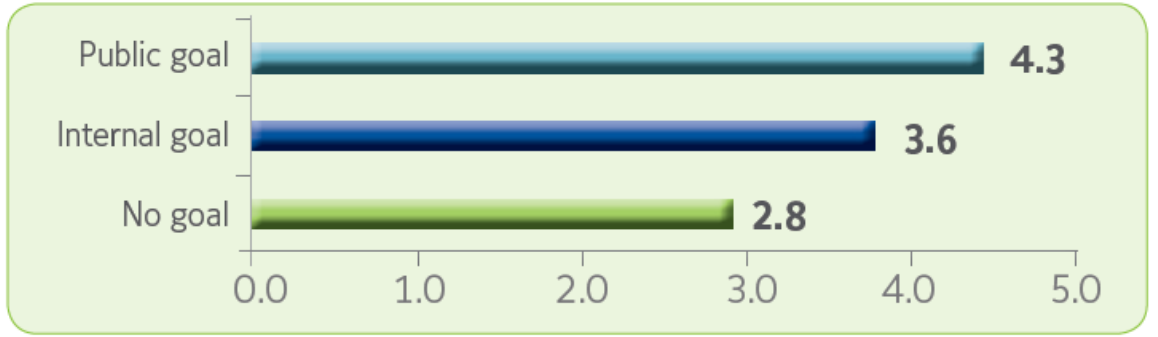
Johnson Controls Energy Efficiency Indicator Study (n = 282)

Policies

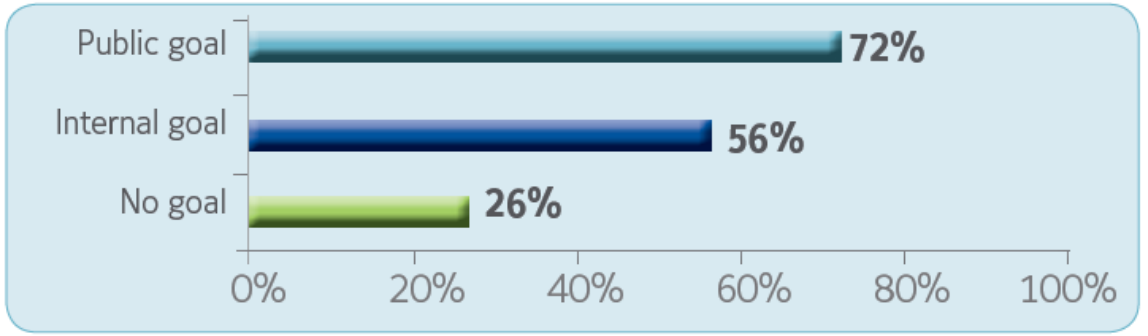
Percent that have invested in energy efficiency or renewable energy in past 12 months:



Average number of energy efficiency measures adopted in the last 12 months:



Percent that plan to increase investment in energy efficiency or renewable energy in next 12 months:



Johnson Controls Energy Efficiency Indicator Study

Policies

EP 100

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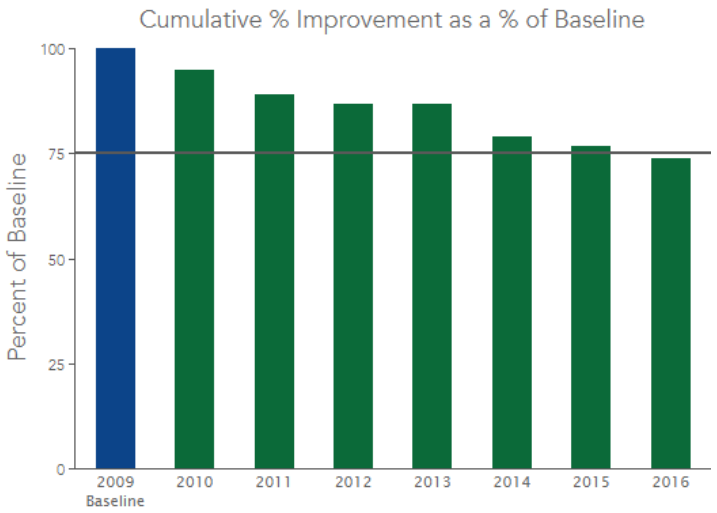
ENERGY PERFORMANCE

PORTFOLIO ENERGY PERFORMANCE

Better Buildings, Better Plants Challenge partners strive to decrease portfolio-wide source energy use intensity (EUI) from a baseline year. Johnson Controls' portfolio consists of 59 facilities, encompassing approximately 12 million square feet of floor space, as of 2017. They achieved their challenge of 25% energy intensity reduction in 2016, which is above a 25% EUI reduction achieved between 2002 and 2008. Johnson Controls is committed to continuing its reduction efforts, and anticipates announcing a new goal in 2018. Their Energy Hunt initiative has uncovered hundreds of energy efficiency opportunities and millions of dollars in savings, and will continue pursuing

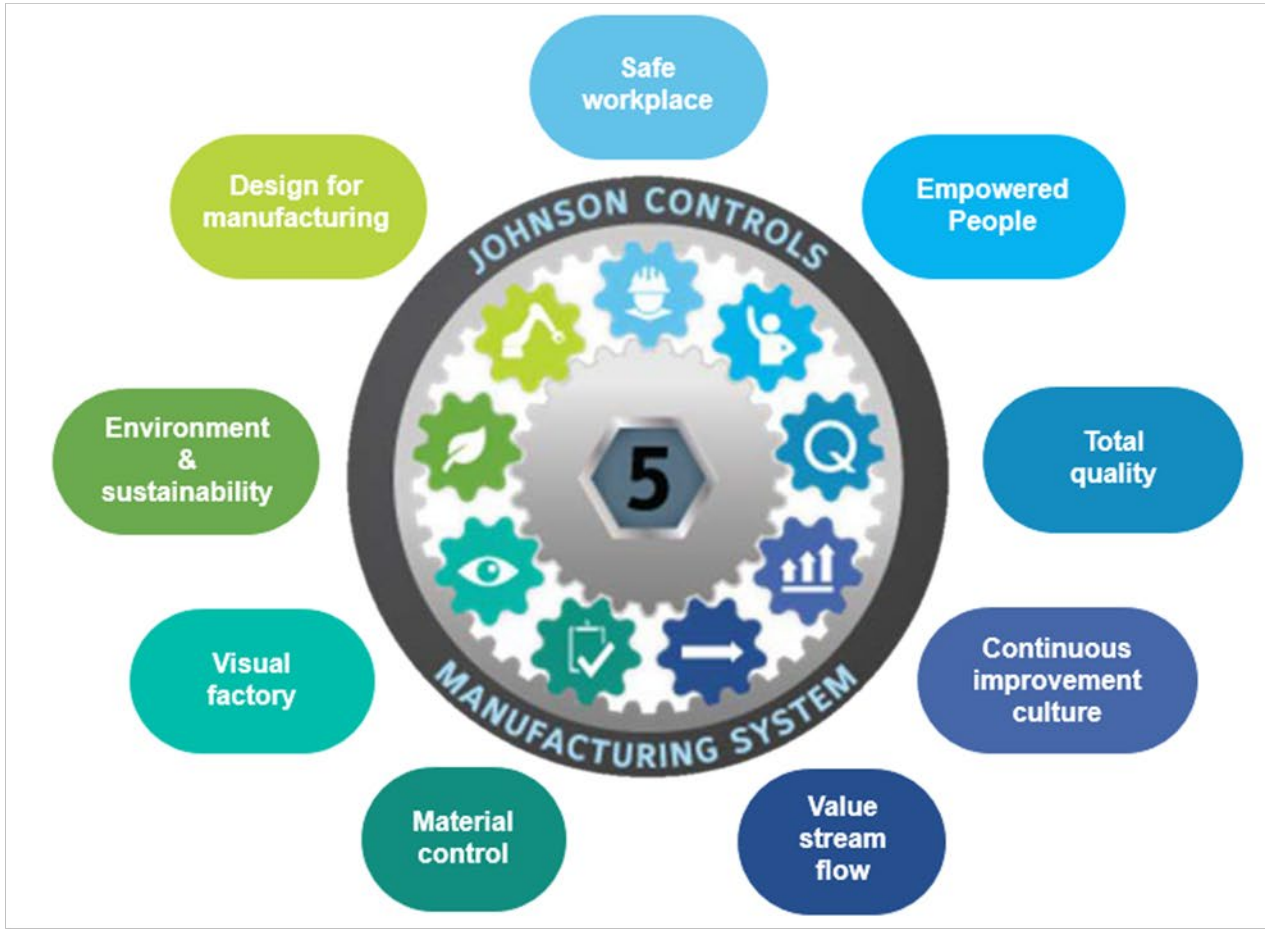


Johnson Controls

Systems

Environment & Sustainability
We promote the safe, efficient, and responsible use of global resources and our employees actively support their communities.

Maturity Model
1) Energy Champion & Training
2) Energy Plan
3) Energy Hunt
4) Energy Metering System
5) ISO50001



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Programs

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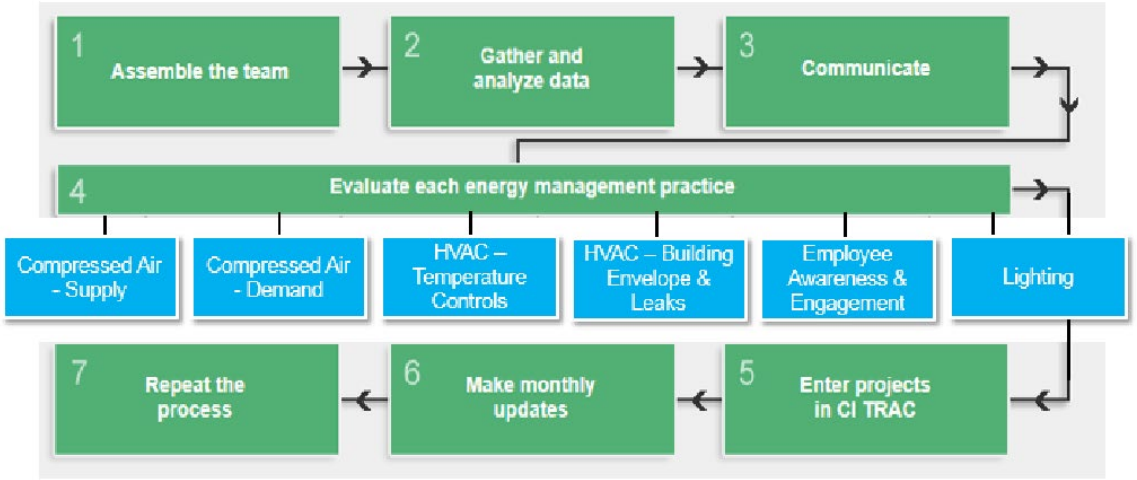
ABOUT BETTER BUILDINGS | ANNUAL REPORTS | EVENTS & WEBINARS | NEWSROOM | PARTNER MAP

JOHNSON CONTROLS: ENTERPRISE-WIDE ENERGY HUNT PROGRAM

Johnson Controls is a global diversified technology and multi-industrial leader with 118,000 employees serving a wide range of customers in more than 150 countries. In 2013, the company joined the Better Plants Challenge and set an energy-reduction goal for its 97 manufacturing facilities located in the U.S. The goal: 25 percent reduction in energy intensity in 10 years, using a 2009 baseline. Between 2002 and 2014, Johnson Controls reduced energy intensity globally by 42 percent and knew it would be a challenge to continue improving energy efficiency at the same rate. Thus, the Challenge partner established an "Energy Hunt" program with the objective of empowering local sites to have the necessary knowledge, procedures, and tools to identify and implement energy savings projects on a continuous improvement basis.



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Programs

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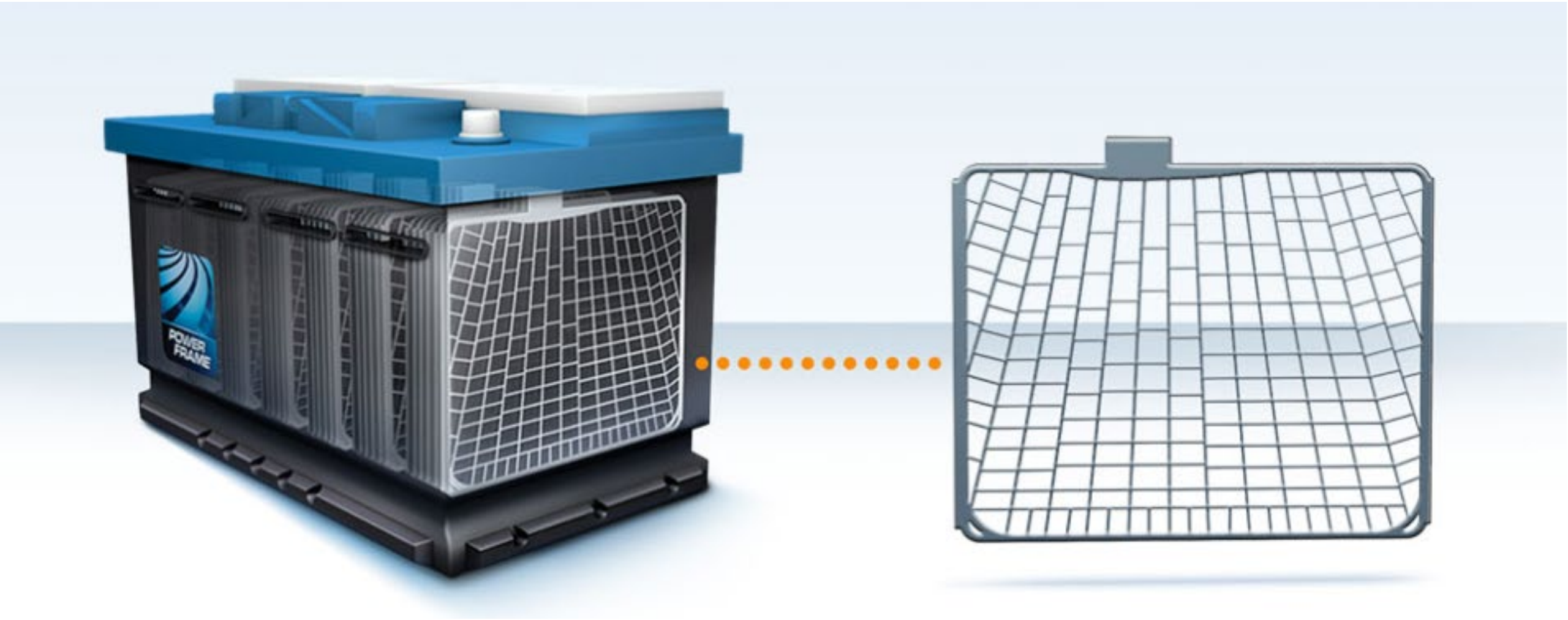
JOHNSON CONTROLS: SUPPLIER EFFICIENCY PROGRAM

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 Projectsupply 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.

Johnson Controls

Processes

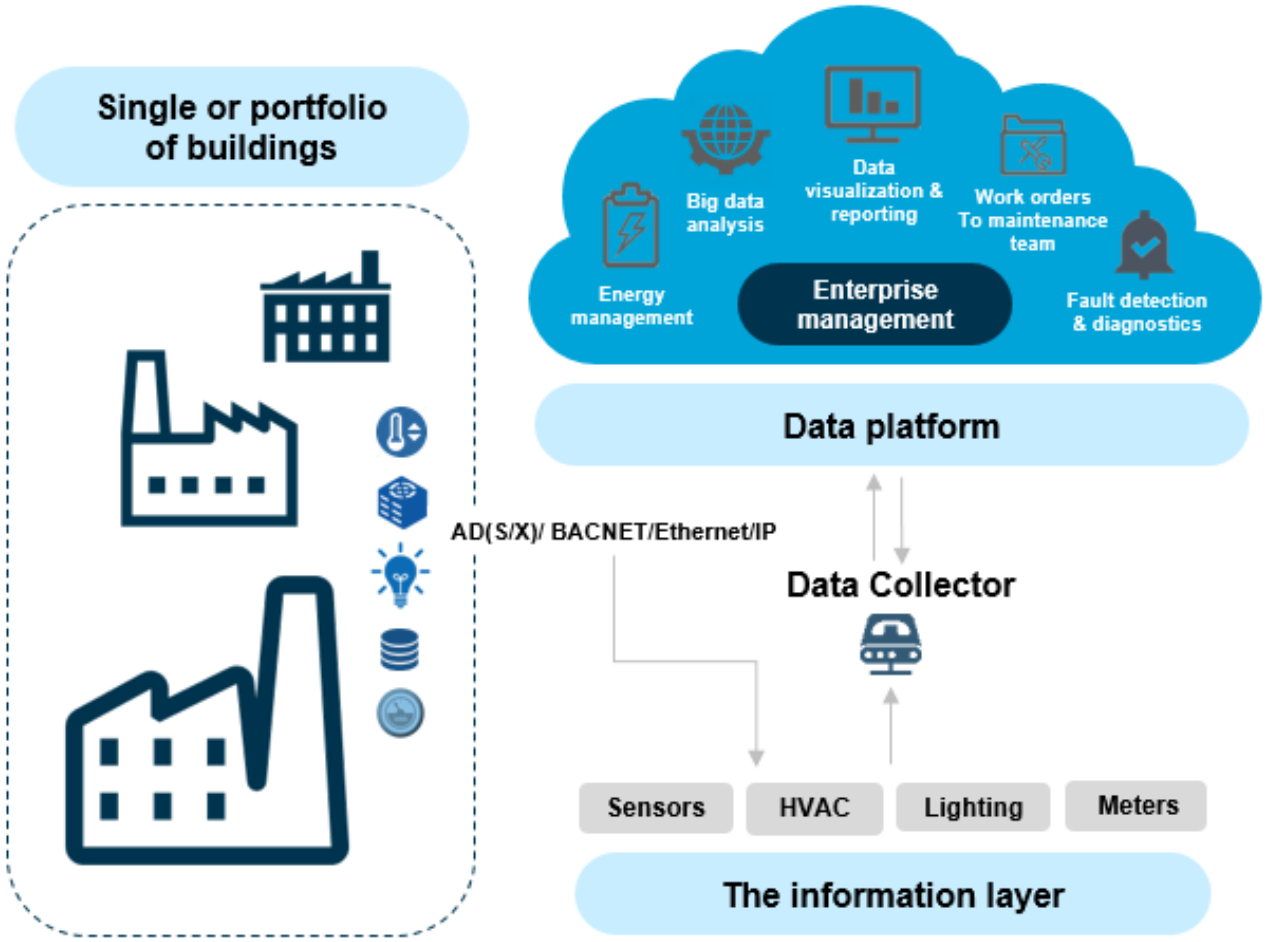


Johnson Controls

Technology

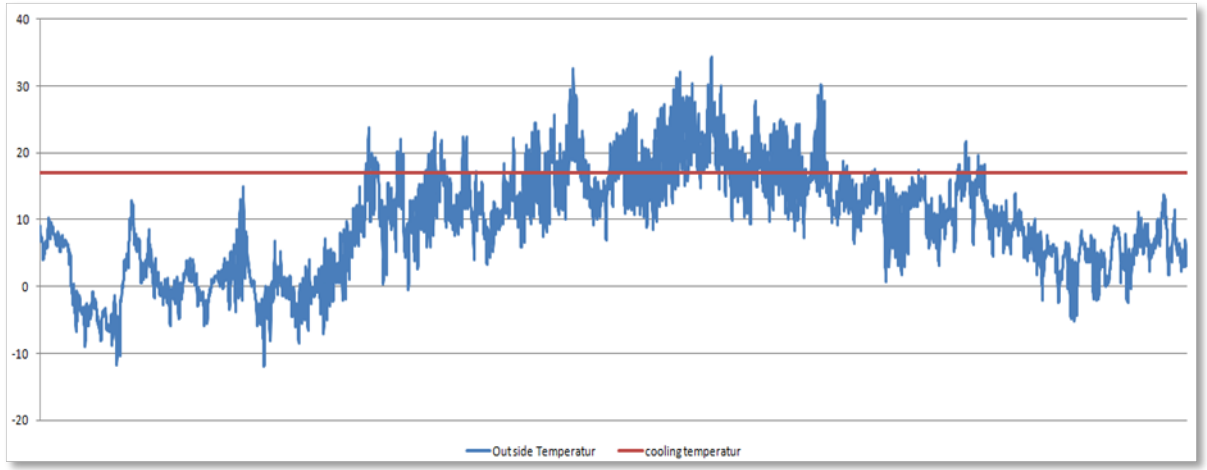
Energy Savings:

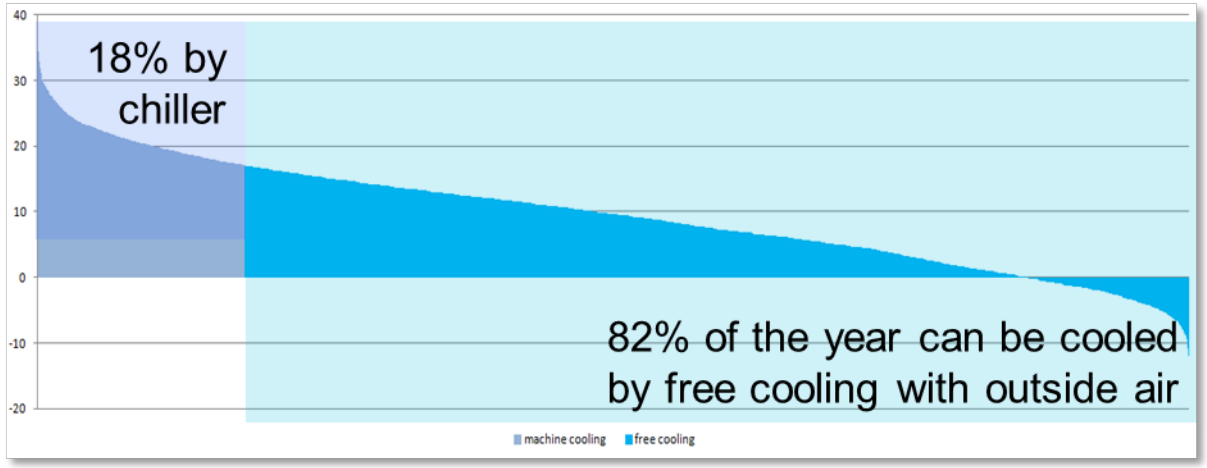
39%*



Johnson Controls

Technology





$10,000 per year waste

35% savings potential

Johnson Controls

…and People

Johnson Controls