

Capturing Co-Benefits of Industrial Energy Efficiency in U.S. DOE Programs

IEA Roundtable on Industrial Productivity
and Competitiveness Impacts

Paris, France

January 27, 2014

Robert Bruce Lung – Industrial Energy
Efficiency Advisor

Introduction DOE Programs: Better Plants and SEP

- Better Plants:
 - Corporate commitment to save 25% (energy intensity) over 10 years
 - ~120 U.S. companies enlisted
 - Design and implement energy efficiency action plans (discrete projects)
 - Technical assistance from DOE to baseline energy use only
 - DOE-sponsored training and recognition
 - Energy savings data collected to determine impact on national energy use
 - Energy savings data used to estimate power plant emissions reductions
 - Co-benefit information not systematically collected
 - If co-benefits achieved, BP partners can submit them voluntarily

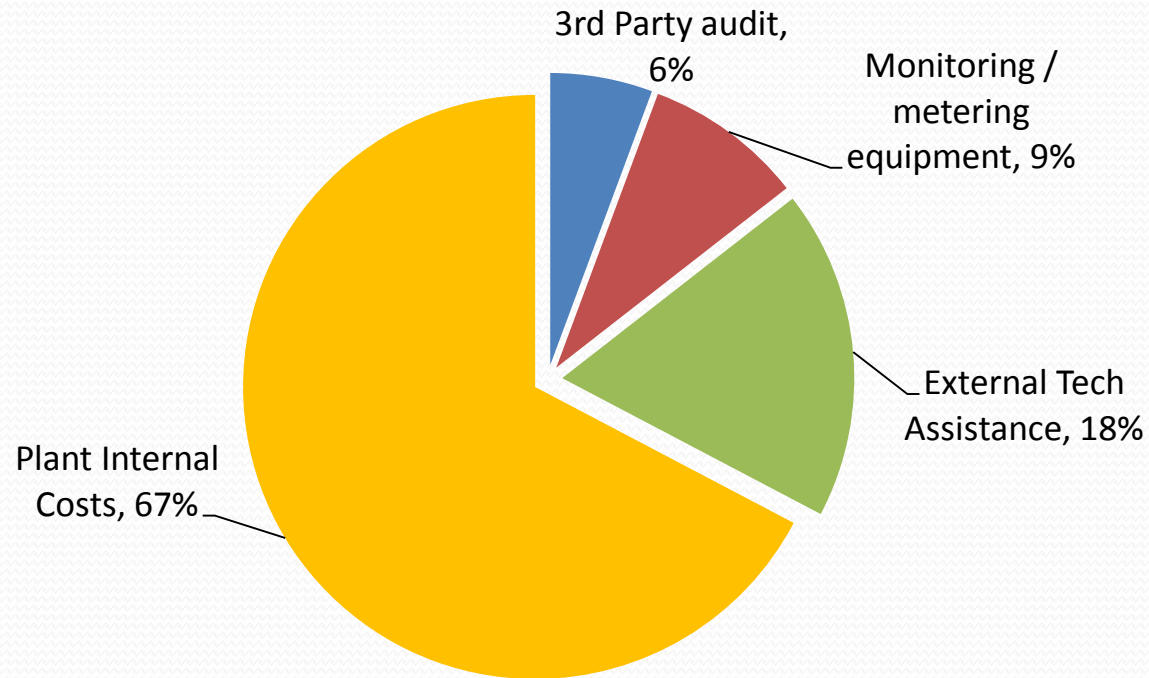
Better Plants Co-benefits Examples

- Nissan North America new paint plant construction project:
 - Avoided purchase of commodities (wood, metal, concrete) through recycling of construction materials
 - Landfill cost savings by recycling materials
 - Diverted 4,060 yards² of materials that would have been sent to landfill
- Saint-Gobain compressed air system optimization:
 - Purchased water savings from installing closed-loop cooling system
 - Reduced sewerage fees due to reduction in discharge of spent cooling water to local sewer system
- Cost savings were not quantified

Introduction DOE Programs: Better Plants and SEP

- Superior Energy Performance:
 - Plant-level program intended to certify energy performance
 - Developed with input from manufacturers (U.S. CEEM)
 - Requires conformance to ISO 50001 and attainment of minimum savings levels
 - Energy savings are validated using M&V protocol
 - Significant workforce training accompanies implementation
- In depth interviews conducted to discern business value of SEP implementation
- Co-benefits of energy efficiency not collected during demo phase
- Starting 12/13 interview process include qualitative questions on co-benefits

Superior Energy Performance Costs



- Internal costs include staff time to implement EnMS
- External technical assistance includes help with ISO 50001 & energy audits
- Third party audit includes ISO 50001 and performance verification

Superior Energy Performance

- Expected benefits of SEP implementation:
 - Significant improvement in energy performance
 - Third-party validation of energy savings (better transparency)
 - Permanence of energy management system (better corporate culture)
 - Brand enhancement (prove commitment to sustainability)
 - Employee engagement (energy management expertise)
- The latter two benefits are important co-benefits that could be quantified

Conclusions

- Most industrial energy efficiency programs do not uncover and quantify co-benefits of industrial energy efficiency efforts
- For many programs, quantifying co-benefits may be desirable to justify implementation costs
- Energy assessments need to be integrated with quality/competitiveness assessments to:
 - Properly estimate co-benefits of energy efficiency measures
 - Account for energy savings from measures intended to improve productivity

Contact Information

Robert Bruce Lung

industrialeeadvisor@gmail.com

202-262-7897