Stemming the Tide of Industrial Opt-Outs: A Flexible, Attractive and Effective Option for Utility-Sponsored Industrial Energy Efficiency

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ABSTRACT

The industrial sector accounts for the largest proportion of end-use energy consumption in the U.S. (over 30%), amounting to annual energy costs of $200 billion. Many utilities offer industrial energy efficiency programs, often as part of state-mandated requirements to reduce energy consumption. These programs cut costs for industrial facilities and the overall energy system. But while industrial programs can produce some of the most significant energy savings of any sector, they are currently under threat. Opponents of utility-sponsored efficiency have been increasingly successful at getting legislation passed that allows industrial customers to opt out. These efforts lead to poor sectoral efficiency performance. To stem this rising tide, it is critical to offer industrial customers attractive alternatives. While self-directed efficiency is a viable option, efficiency advocates continue to explore alternatives that provide industrial facilities the flexibility they seek, while ensuring that their efficiency potential is fully captured and the resulting savings are robust and verifiable. This paper explores one such promising alternative that combines elements of ISO 50001 and DOE's Superior Energy Performance program, to create a middle ground that is flexible, ambitious, and produces verifiable savings. Such a hybrid could permit industrial customers to self-direct their efficiency, and in states where opt-outs are imminent, the hybrid could help prevent complete industrial exodus from efficiency programs.

Executive Summary

This paper explores the ***opportunity*** to harness the significant untapped potential of energy efficiency savings from the industrial sector through utility-sponsored programs, while also addressing the growing ***problem*** of industrial opt-outs. One ***solution*** is a utility-sponsored program that combines elements of ISO 50001 and DOE's Superior Energy Performance (SEP) program, to create a hybrid approach that is ambitious and produces verifiable savings—while attractive enough to reduce industrial exodus from efficiency programs. Our central premise is that a successful utility program that is flexible and valuable enough to appeal to customers, while generating sufficiently large savings to engage utilities' interest, could be an effective solution to the increasing prevalence of industrial op-outs.

The Opportunity: At an average of 2.8 cents per kWh, energy efficiency has proven to be the least-cost energy resource—one-half to one-third the cost of new electric generation (Molina 2014). Importantly, investing in efficiency helps utilities and ratepayers avoid both the expense of building new power plants and the harmful pollution that plants emit (Id.). And industrial programs yield some of the most cost-effective energy savings available; this sector saves more energy per program dollar than any other customer class (SEE Action 2014).

Given this dynamic, it is not surprising that the industrial sector harbors tremendous potential for significant energy savings through efficiency. At over 30% of the total energy consumption by end-use sector in the nation (EIA 2015), manufacturers pay annual energy costs of over $200 billion (SEE Action 2011). But these costs can be substantially reduced with investments in energy efficiency. National studies estimate that implementing cost-effective efficiency projects would reduce the industrial sector's end-use consumption by as much as 18% by 2020, cumulatively saving up to 3,650 trillion BTUs (McKinsey & Company 2009). This is the equivalent of taking 53 million passenger cars off the road (EIA 2009) and cutting over four times as much carbon pollution as is currently displaced by wind energy in the U.S. (Environment America 2012).

Utilities offer some form of industrial efficiency programming in 28 states across the nation (SEE Action 2014). However, these programs vary widely in their design, effectiveness, and attractiveness for industrial customers. Recent surveys of industrial efficiency strongly suggest that the most effective industrial programs are utility-sponsored, in which customers achieve energy savings via prescribed program requirements and incentives (Chittum 2011). A second level of programs allows customers to "self-direct" their efficiency efforts. These programs give industrial customers the flexibility to develop their own energy-saving measures. However, structured self-direct options still typically include some degree utility oversight and evaluation, measurement and verification (EM&V) of savings, ideally at equivalent levels to those achieved under utility-sponsored programs. These two approaches ensure that utilities and industrial companies work together to develop the most cost-effective efficiency measures in the most flexible way possible, thereby capitalizing on untapped opportunities and ensuring the necessary EM&V to truly deliver cost-effective energy savings over the long term.

On the other side of the spectrum are less structured self-direct policies, and complete opt-out from programs—both of which deliver little, if any, verifiable energy savings (Chittum 2011). These policies are ineffective at harnessing the kinds of robust energy savings available. While unstructured self-directed programs may provide flexibility to develop efficiency projects within some utility-sponsored framework, they often have little utility oversight and little assurance of achieving meaningful performance. Opt-out policies permit industrial customers to exit entirely from utility-sponsored programs, leaving utilities with no formal role or knowledge of the efficiency investments (if any) made by that customer.

<u>*The Problem*</u>*:* While industrial programs can produce some of the most significant energy savings of any sector, they are currently under threat. Opponents of utility-sponsored efficiency have been increasingly successful at getting legislation passed that allows industrial customers to opt out or self-direct in an unstructured manner. This increasing prevalence severely diminishes the degree to which the industrial sector can tap its deep well of energy efficiency potential, leading to poor sectoral efficiency performance. Moreover, it leaves the rate base vulnerable to more costly utility decisions (such as new power plants) in order to meet energy needs.

In the last two years, opt-outs have passed in Indiana and Ohio (SEE Action 2014), and are currently threatened in other states in the Midwest and the South (ACEEE 2014). Nine states currently have opt-out statutes.[1] Conversely, ACEEE estimates that there are 23 states that have some form of self-directed energy efficiency programs nationwide.

<u>The Solution</u>: This paper proposes one promising alternative to this opt-out trend, designed to maximize three primary policy objectives:

- ***Real flexibility and value for the customer:*** Providing industrial customers with a range of options to accommodate the complexity of large-scale efficiency projects is essential to

[1] These include Arkansas, Indiana, Kentucky, Maine, Missouri, North Carolina, Oklahoma, Ohio, and Texas.

capturing the potential of this energy-intensive sector. At the same time, this flexibility must be coupled with savings that matter to both the industrial customer and the utility.

- ***Nurturing an effective and lasting partnership between the company and the utility:*** Meeting the first objective helps to establish the utility as a trusted energy efficiency resource for the customer, while also helping the utility to develop stronger customer relationships (IIEC 2006). Creating a lasting partnership with the utility during several stages (discussed later) of planning and implementation is an essential factor to ensure that the energy management process proceeds smoothly, is cost-effective, and is successful. Importantly, it helps defray costs that a company might otherwise incur retaining technical experts or hiring new staff.
- ***Generating significant, verifiable energy savings that meet or exceed utility savings targets:*** Effective energy efficiency programs have clear and enforceable targets that generate real savings. It is also essential to monitor and verify energy savings, helping to improve program offerings and industrial engagement. Capturing meaningful operational and behavioral data on energy efficiency measures also allows for utilities to generate increasingly effective iterations on existing program designs, contributing to continuous energy improvement.

This paper describes a well-structured self-direct approach, based on these three policy objectives, as an alternative to traditional inflexible or otherwise impractical utility programs. The mechanics of this approach would combine elements of ISO 50001 with elements of DOE's SEP program. In states where opt-outs are imminent, this middle ground could help reduce—and even prevent—industrial exodus from efficiency programs. Utilities will find this hybrid attractive because it keeps industrial facilities in the programs enabling this highly energy-consumptive sector to drive savings over time that actually benefit all sectors of the economy. Industrial companies will find this approach attractive because it is flexible and provides real value—some of the key factors for success.

The Building Blocks of a Hybrid Approach: Discussion of the Elements of ISO 50001 and Superior Energy Performance

In this section, we identify the main elements of the ISO 50001 and SEP standards, as well as the current uptake rates of these standards and cost savings reported to date in the U.S.

Comparison of ISO 50001 and Superior Energy Performance

ISO 50001 was developed in 2011 by the International Organization for Standardization (ISO). It establishes a framework for integrating energy performance into management practices that industrial, commercial, and governmental facilities can use to manage and reduce their energy use. Entities seeking ISO 50001 certification would meet the parameters by developing and implementing an energy management system (EnMS) (ISO 2011). ISO 50001 is implemented via a cyclical four-phase "Plan-Do-Check-Act" process (DOE 2015a). It is a voluntary standard—companies that implement it are not required to have their system independently certified for compliance, though certification is an available option. As of May 2014, more than 62 sites in the U.S. had achieved ISO 50001 certification, which is a marked increase from 2013 participation.

One feature—and perhaps drawback—of ISO 50001 is that it does not require ambitious energy savings. The voluntary standard includes no prescribed minimum performance criteria, energy reductions, or verification of savings. Rather, organizations set their own targets and timeline for achieving their energy goals.

The SEP program is U.S. DOE-led and may be succinctly described as a rigorous approach to implementing ISO 50001.The basic requirements of SEP start with ISO 50001, but then build on the ISO elements by establishing specified targets for energy performance improvement and requiring third-party verification of savings, among other elements. To achieve SEP certification, a facility needs to have an audit completed by ANSI-ANAB accredited SEP verification body that ensures the facility's EnMS meets ISO 50001 and SEP requirements, along with confirming that the facility meets prescribed EM&V protocols and achieves specified levels of energy savings. SEP certification has three levels based on efficiency performance (DOE 2015c). In addition, achieving SEP compliance requires specific documentation procedures and target setting. As of July 2013, 28 facilities had completed SEP Training (Therkelsen and McKane 2013), and to date 17 are certified (Dahlgren 2014). SEP facilities are required to renew their certification every three years.

Table 1 below compares the main elements of ISO 50001 to the SEP program, according to the four-phase "Plan-Do-Check-Act" process.

Table 1. Comparison of ISO 50001 and SEP Elements

	Element	ISO 50001	***Additional*** SEP Requirements
PLAN	Top Management Commitment	**Requires** written commitment from management to supply necessary resources to carry out process.	**N/A**
	Defined Scope	Up to company	**Requires** boundary be set at the facility level. **Requires** scope includes the entire area occupied by the organization and manages each energy source that enters the boundary. Must cover 95% or more of total energy consumption.
	Energy Management Team	**Requires** development of a cross-functional energy team that includes an energy management representative.	**N/A**
	Energy Policy	**Requires** written policy that states company committed to achieving continued energy performance improvement and the availability of resources to support and achieve energy efficiency goals.	Written policy must also include commitment to comply with SEP requirements.
	Legal Requirements	**Requires** compliance with legal requirements.	**Requires** compliance with additional SEP requirements
	Energy Review Process	**Requires** facility to complete an evaluation of past and present energy use and future energy needs, identify significant energy users (SEUs), and evaluate current system/equipment performance.	**Also requires** facility collect energy data on each energy sources that crosses the facility boundaries, measure energy consumption at the facility's physical boundaries, and keep a up-to-date list of facilities, equipment, systems, and processes that account for the majority of energy consumption
	Energy Baseline and Indicators	**Requires** facility establish a baseline of use and establish energy performance indicators. Up to company how metrics determined and updated. **Must** determine conditions for adjusting baseline	**Must** have a facility wide energy performance indicator (SEnPI) *that accounts for all relevant variables*. **Need to meet** the statistical and data quality requirements in SEP M&V protocol.
	Energy Objectives/Goals	**Requires,** but chosen goals and timeline up to company.	**Must** include a SEP level of energy performance improvement and show energy improvement over 3 years.

	Energy Action Plan	**Requires** plan developed that identifies goals and prioritizes actions to achieve goals**,** but format up to company.	**Must** include estimated energy savings, show how company will achieve SEP performance standard, track the SEnPI, and include a SEP-conformant way to verify savings.
DO	Communication Process	**Requires** internal communication procedure.	**Also requires** external communication procedure.
DO	Operational and Maintenance Controls	**Requires** facility develop operating criteria and thresholds for equipment and SEUs**.** Equipment must be operated and maintained according to criteria.	**N/A**
DO	Purchasing and Design Controls	**Requires** facility incorporate energy policy into all equipment, energy, and service purchasing decisions, as well as new design construction.	**N/A**
DO	Staff Training	**Requires** facility has process in place to identify and address staff training needs.	**Must** keep record of personnel training needs and when training was delivered
DO	EnMS Documentation	Only a few documents required.	Additional documentation, including those related to training, corrective action, communication, and the SEnPI.
CHECK	Monitoring and Measurement	**Require** facility to develop a monitoring and analysis plan**. But** M&V procedure up to company.	**Must also** track SEnPI and meet SEP M&V protocol.
CHECK	Internal Audits	**Require**s facility staff perform preliminary audit**.**	**Must** meet SEP M&V protocol and cover the SEnPI and overall energy performance improvement of entire facility.
CHECK	Control of Records	**Requires** maintenance of records to verify savings.	**N/A**
CHECK	Performance metric	**None.**	**Yes.** Must achieve 5%, 10%, or 15% improvement over 3 years OR have achieved 15% over the last 10 years *plus* scored 35, 61, or 81 points (out of 100) on best practice score card.
CHECK	Corrective Action Process	**Requires** facility has a process for corrective action, but no documentation required.	**Must** have a documented procedure for corrective action.
ACT	Top Management Review	**Requires** top management reviews internal audit results and energy savings	**N/A**
ACT	Opportunities for Improvement	**Requires** facility identify additional opportunities for improvement.	**N/A**
ACT	External Certification	**Optional.** Can be certified with any ANAB auditor.	**Requires**. Must be ANSI-ANAB accredited. Will certify that EnMS meets ISO 50001 and SEP criteria *and* verify performance savings. Must be renewed every three years.

Costs and Benefits of Achieving the Standards

Lawrence Berkeley National Laboratory (LBNL) recently surveyed the costs and energy savings realized by nine SEP-certified facilities, finding that implementing the program costs on average $319,000 per facility (Therkelsen and McKane 2013). Figure 1 below breaks these cost components into four categories: internal staff time, external technical assistance, metering and monitoring equipment, and the third-party audit.

The single largest cost was internal staff time—accounting for over half of total expenditures (67%). It is important to note, however, that the majority of the energy team is typically composed of existing staff; thus these costs would have been borne regardless of the facility's decision to pursue SEP. Since a SEP-compliant EnMS builds heavily off of ISO 50001, we assume that much of these internal costs would have been incurred even if a facility opted to pursue only ISO 50001.

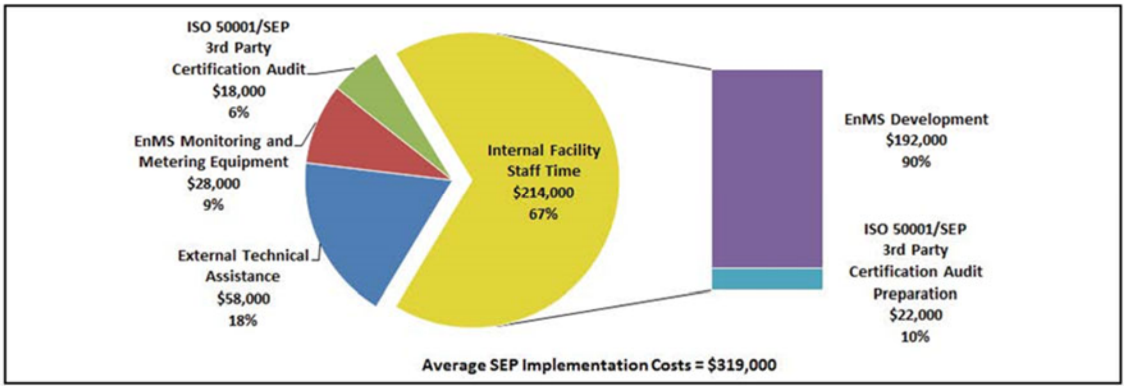

Figure 1. Breakdown of SEP Implementation Costs. *Source*: LBNL 2013

Also illustrated in Figure 1, the second largest component in achieving the ISO 50001 and SEP standards is external technical assistance (18%). While neither standard explicitly requires hiring third-party assistance, many facilities opted to do so, indicating that this element was critical for their success. While facilities did indicate that external technical assistance was crucial for SEP certification, it is likely a one-time cost. No facility believed that they would need to hire external technical assistance when re-certifying for SEP.

Notably, the actual installation of equipment to achieve the energy savings was not a significant cost driver (typically less than 10%). SEP and ISO 50001 are both data-driven processes, requiring facilities to meter, monitor, and record energy consumption for all significant energy uses. But most facilities had adequate monitoring equipment already in place, and did not need to make additional investments.

The final component is third-party certification, averaging around 6% of costs. All surveyed facilities indicated that the cost of certification was not prohibitive. In fact, facilities indicated that the SEP third-party verification process provided significant value to their energy management system—providing top management with confidence in reported energy savings and leading to a greater willingness to provide additional resources for further efficiency efforts.

While upfront investment is inherent in ISO 50001 and SEP, the savings documented by facilities have been significant and cost-effective. LBNL found that facilities participating in SEP cut their energy use by an average of 3.8% in the first year and 10.1% in the second year (2.8% and 9% attributable to SEP, respectively). Implementing ISO 50001 with SEP targets saved facilities an average of 0.174 TBtu and $503,000 on energy bills annually. The average payback was 1.7 years, with larger facilities seeing payback of less than one year (DOE 2015b). Of note, there were differences in the paths to SEP certification taken by the surveyed facilities, with many facilities gaining substantial savings from operational improvements (on average three-quarters of the savings), while others found savings in capital projects.

Facilities reported other benefits in addition to direct energy savings. Often the EnMS process uncovered overlooked and low-cost operational energy efficiency opportunities. In fact, facilities such as HARBEC were able to achieve SEP certification through operational changes alone (HARBEC 2014). In addition, the requirements to develop communication and documentation processes helped facilities more effectively impart the value of improved energy performance to both end-users and upper management.

Driving Towards Flexibility, Value, Performance and Verifiability

ISO 50001 and SEP are well-constructed frameworks effective at tapping the deep well of energy efficiency potential in the industrial sector. However, not all of their elements provide equal value (or even sufficient perceived value vis-à-vis associated resource needs). There is also a risk that, if offered as currently structured, some elements may be overly rigid and could actually hasten the rising tide of industrial opt-out from utility-run programs. Flexible, rigorous and thoughtful program design for industrial energy efficiency is essential to capturing this tremendous potential. In contrast, inflexible and/or unambitious programs leave customers frustrated and fail to seize on valuable energy savings opportunities.

Below we review participant comments on ISO 50001 and SEP and select the most essential elements for the hybrid approach, while removing certain requirements that are cumbersome or more appropriately left to the company's discretion. We then recommend two levels of commitment for the hybrid that a utility could offer:

- **Option A** (*low intensity*, for less experienced facilities); and
- **Option B** (*higher intensity*, for more experienced or those facilities looking to achieve more stringent savings targets)

Evaluating the Four-Phase Process

The ISO 50001 and SEP planning and implementation phases (the PLAN and DO phases) received the majority of criticism from surveyed participants. The development of internal procedures and policies was cited as a main barrier for facilities with less mature (or previously non-existent) energy management programs. Even those that had previous energy efficiency experience noted that securing the necessary resources to develop and implement a SEP-compliant EnMS was a major challenge (Nissan 2013, 3M 2012). Much of this difficulty appears to stem from an initial lack of staff resources and organizational support that—once in place—is relatively simple and inexpensive to maintain (Wood and Almaguer 2011). Companies reported having to obtain managerial support, develop energy policies and establish energy as a company priority, invest in infrastructure, generate staff engagement, and create energy teams and front office support (DOE 2011).

ISO 50001 requires intensive use of data and monitoring, along with detailed documentation of core elements of the energy management system (HARBEC 2014). Those with significant ISO and energy management system experience (i.e. ISO 9001 and ISO 14001) had fewer challenges in transforming previous systems to be ISO 50001 and SEP-compliant (3M 2012). However, companies that lacked this internal expertise found the amount of data and documentation challenging (Nissan 2013).

In addition, SEP requires documentation of plant-wide training and competency determinations. Several companies reported that this element placed significant demands on resources (3M 2012). Several companies also needed outside assistance to work through the ISO 50001 and/or SEP process. Surveyed participants report that dedicated personnel (3M indicated about 3/4th of a person for 1.5 years) is essential to complete SEP.

Once staff expertise had been built up, the other common barrier was the development and use of operational controls and indicator measurements (GD-OTS 2014). SEP requires that performance improvement measurements include adjustments for changes in production level, production mix, weather, etc. Developing the values for these parameters, and the set point and alarms to ensure that equipment was operating most efficiently, took time and could be contentious and challenging (HARBEC 2014, GSEWP 2014).

But the planning and implementation process also received positive feedback, particularly in the energy management implementation phase. One of the ISO 50001 required elements is to develop an energy team and ensure communication between plant level staff and higher management. This step requires companies to change the way that they look at energy—from a static fixed cost to a manageable element of their business. Several companies found this essential to incorporating energy management into everyday business decisions (DOE 2011). In addition, by going through the EnMS process, companies often identified correctable, overlooked energy losses that led to significant energy savings at little cost (HARBEC 2014). Companies also reported that the ISO 50001 process led to increased cooperation between staff, such as between the accounting department (who often had misconceptions that energy management would be too costly) and facilities staff (GSEWP 2014, DOE 2011).

In contrast to the first two phases, the monitoring & measurement and verification (CHECK and ACT) phases received primarily positive comments in the ISO 50001 and SEP participant survey, particularly with respect to increasing levels of transparency and credibility. One of the most commonly cited benefits was related to SEP's third-party verification requirement and its EM&V protocols. Though ISO 50001 does not require specific performance metrics or EM&V measures, when these elements were implemented via the SEP process companies experienced increased visibility and levels of beneficial communication on energy use within the plant (3M 2012). In addition, required EM&V protocols increased facility and management confidence in the savings, which helped staff justify their expenditures (Pierett 2012). The certainty achieved through verified savings also provided both external and internal recognition of energy and sustainability progress (Nissan 2013, HARBEC 2014). As General Dynamics said, "people know we are not just 'greenwashing;' rather, they know that our words and corporate energy policy are actually backed up by our actions" (DOE 2015d).

The other oft-cited praise was for the continued energy performance elements required in the SEP. Most companies commented that the savings from prior efficiency investments often dissipated over time, particularly with operational improvements (3M 2012). By requiring participants to develop a formal framework for maintaining and reviewing the EnMS and reported savings, participants committed themselves to a "roadmap for achieving continual improvements in energy efficiency" (HARBEC 2014).

Program Recommendations

The demonstrated value of the four phases of ISO 50001 and SEP must be balanced with the need for flexibility and net-value generation. As one utility—Pacific Gas & Electric—observed with its Continuous Energy Improvement Program, flexibility is paramount and is "a key factor for success: not all facilities are the same and the business of our customers regularly changes. The ability of the [program] to be adjusted to current needs and circumstances of our customers has allowed supporting them effectively" (Cheng 2012). The critical factor to ensure this balance is heightened utility involvement during these phases, particularly in designing an energy plan, identifying the savings target and ensuring that the savings are real.

We took the following approach in developing Options A and B, outlined in Table 2:

For all phases of ISO 50001 and SEP, we categorized the elements required for each standard according to how critical they are for achieving energy savings. Elements that are essential to success were either recommended or required for the different levels of program options. Several of these elements are relatively low-cost to get done, or involve fewer hurdles, such as securing the commitment of top management to get the necessary resources to carry out the process, and developing a written energy policy.

We then identified which elements could benefit from utility assistance. We paid particular attention to areas where heightened utility involvement could help defray costs or where the utility could even cover the upfront investments for the industrial facility, thereby increasing the attractiveness of the program. For example, the utility could play an advisory and technical role, such as assisting in the development of an energy action plan, performing initial audits, and advising on best management practices for operation and maintenance. This would allow the industrial facility to forego the costs of external assistance—which, at an average of $58,000, is the second most costly component identified in achieving the ISO 50001 and SEP standards (see Figure 1 above). In addition, the cost of audits can be substantial, from $0.12 to $0.50 per square foot. These elements have clear opportunities for the utility to participate and create lasting partnerships with a facility, contributing to the cost-effective and successful implementation of a facility's energy efficiency efforts. Utilities can also offer perspective or custom rebates for capital improvement projects, as well as monetary incentives for implementing and maintaining O&M changes.

Another area essential to success—but that also has a clear role for the utility—is target-setting and EM&V. While ISO 50001 allows facilities to choose their own targets, SEP includes specified performance metrics. According to Volvo, the lack of explicit savings metrics in ISO 50001 renders that standard of little merit (Pierett 2012). On the other hand, some evidence suggests that the SEP metrics are too aggressive. To address this, program options identified in Table 2 strike a balance between the two standards, requiring that the facility's energy management system achieve savings equivalent to the utility's statutory energy savings target for that year. Both Option A and B also require a facility to meet the utility's current EM&V protocol. This provides both rigor in target-setting and verification of the savings, while creating an additional opportunity for the utility to work with the facility as it moves down the path to success. The utility can also offer technical support during the EM&V process, which can defray anywhere from 3 to 5% of total project costs. In addition, the program options either recommend (Option A) or require (Option B) that top management be involved and review verified savings to get further buy-in, improve company energy awareness, and increase the chances of lasting energy savings.

The remaining elements are either left up to the company's discretion, or are recommended but not required. This imparts flexibility, leaving the facility free to tailor their actions to best meet their needs.

Table 2. Program Proposal for Option A (low intensity) and Option B (high intensity)

	Element	Option A – Low Intensity	Similar to		Option B – High Intensity	Similar to		Utility Role
			ISO	SEP		ISO	SEP	
PLAN	Top Management Commitment	Recommend written management commitment			Require written management commitment	✓	✓	
	Defined Scope	Up to company	✓		Recommend scope covers large percentage of energy use (>90%)		✓	
	Energy Management Team	Require. Either a team or lead, depending on company.	✓	✓	Require. Either a team or lead, depending on company.	✓	✓	Advisory Role. Help craft a strong, cross-functional team.

	Energy Policy	Recommend written corporate energy policy			Require written corporate energy policy	✓	✓	
	Legal Requirements							
	Energy Review Process	Require.	✓	✓	Require.	✓	✓	**Technical Role**. Assist with initial audit.
	Energy Baseline and Indicators	Require. Must meet utility's data quality standards	✓		Require. Must meet utility's data quality and statistical modeling standards		✓	**Technical Role.** Assist with development of metrics.
	Energy Objectives	Require. Objectives up to company	✓		Require. Objectives up to company.	✓		
	Energy Action Plan	Require. Elements included up to company.	✓		Require. Elements included up to company.	✓		Advisory Role. Guidance on low-cost, effective measures to include in plan.
DO	Communication Process	Up to company. No documentation required			Up to company. No documentation required			
	Operational and Maintenance Controls	Recommend.			Require.	✓	✓	Advisory Role. Inform on best management practices.
	Purchasing and Design Controls	Up to company			Recommend.			
	Staff Training	Up to company. No documentation required.			Up to company. No documentation required			
	EnMS Documentation	Only require documents utility determines necessary for verification of savings	✓		Only require documents utility determines necessary for verification of savings	✓		Standard Setting Role. Set documentation requirements.
CHECK	Monitoring and Measurement	Require company follows utility's M&V protocol		✓	Require company follows utility's M&V protocol		✓	Technical Role. Help company meet M&V standards .
	Internal Audits	Up to company			Recommend company does preliminary audit before utility verifies			
	Control of Records	Only require record-keeping necessary for utility M&V			Only require record-keeping necessary for utility M&V			Standard Setting Role. Set record-keeping requirements
	Performance metric	Require company to meet utility's energy efficiency savings target		✓	Require company to meet utility's energy efficiency savings target		✓	Standard Setting Role. Set energy savings target.
	Corrective Action Procedure	No documentation required.	✓		No documentation required.	✓		
ACT	Verification	Savings externally verified annually			Savings externally verified annually			Auditory Role. Utility does an external verification of savings.
	Top Management Review	Recommend actions taken and verified savings reviewed by management			Require actions taken and verified savings reviewed by management	✓	✓	
	Opportunities for Improvement	Recommend			Recommend			Advisory Role. Help identify cost-effective, energy saving opportunities

Summary of Policy Proposal

We have proposed two options for structured self-direct programs that could flexibly create value for customers, and generate meaningful and verifiable savings that utilities can rely on, while strengthening collaborative working relationships between utilities and their customers.

Low-intensity Option A would be geared towards companies less experienced with energy management. It would require a small number of the core elements of ISO 50001 and SEP, with the majority left to the facilities' discretion. Of the 22 substantive elements of the Plan-Do-Check-Act process, only seven would be required and five recommended.

High-intensity Option B would be targeted towards facilities more sophisticated in the context of energy-management, or those companies motivated to seek larger savings in an accelerated fashion. It would require a larger proportion of the elements of ISO 50001 and SEP, but would still allow considerable company discretion. Of the 22 substantive elements of the Plan-Do-Check-Act process, 11 would be required and four recommended.

By partnering on these tailored program options, utilities and facilities may better harness the significant untapped potential for savings from the industrial sector, while also addressing the growing problem of industrial opt-out with an attractive and viable solution.

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