

Problem Statement and Recommendations for CPUC-Track 2 Working Group (T2WG) in response to D.16-08-019 Resolutions (Custom process review & ISP Guidance Update)

A Summary of High-level Issues on the existing ISP Guide (V1.2A, April 2014) and Recommendations for revising the ISP Study Guide

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1. Background

Industry Standard Practice (ISP) has been defined as: ISP represents the typical equipment or commonly used current practice absent the program.¹ The existing ISP Guide indicates that an ISP study is an investigation as to what is presently the Industry Standard Practice for a technology/measure in a given application/market segment. The existing ISP Guide focuses on prescribing the process of conducting ISP studies geared toward applications in a given market.

The concept of Industry Standard Practice (ISP) was originally used as a risk-mitigation tool to support and validate a decision to sunset an existing energy efficiency measure (EEM) that has already been in the program. The risk-mitigation study concept was proposed by SCE (Pierre Landry) and accepted by CPUC (Kay Hardy) to help identify EE measures that needed to be sunset. CPUC Energy Division staff later extended the use of this concept to seek and determine baselines (e.g., counterfactuals) for custom projects, out of understandable concern that “as-is” pre-existing condition) was not always the appropriate baseline, particularly for replace on burnout (ROB), and normal replacement (NR) projects.

1.1 Statement of Problems

The experience of applying the ISP concepts to custom projects and programs has been mixed. The existing ISP Guide provides detailed guidance on how an ISP study should be done for a technology/energy efficiency measure in a specific application/market segment. These ISP studies are based upon market assessments of commonly adopted technologies and a literature research of relevant regulations. These market-based ISP studies can be used for establishing broad market segment baselines. But most custom projects with large savings estimates are often unique (or semi-unique). These larger projects have site-specific or customer-specific characteristics that are not repeated across broader markets. It is not possible to develop or use an ISP baseline that is based on a market assessment study for such projects.

We have learned that designing, expecting, or augmenting market-based ISP studies for unique custom projects is inappropriate. The existing ISP Guide needs to be revised to provide guidance on how to develop accurate baselines to use for such unique, typically very large and complex, custom projects.

¹ Per the CPUC, D.12-05-015. Page 351: For purposes of establishing a baseline for energy savings, we interpret the standard practice case as a choice that represents the typical equipment or commonly-used practice, not necessarily predominantly used practice.” It also said, “Industry standard practice baselines are established to reflect typical actions absent the program.”

The mixed experience with the ISP Guide is partly due to ambiguity in the purpose of conducting an ISP study (e.g., where/when to apply an ISP study and with what approach), disparity of ISP definitions and understanding, misinterpretation of the ISP concept and its applicability, absence of a tangible list of qualifiers for determining standard practice, confusion in custom process reviews, and subjectivity in deciding what qualifies as an ISP or non-ISP. For example, the term ISP and baseline are often used interchangeably by CPUC staff, implementers and reviewers, generating unnecessary confusion. Such confusion often resulted in convoluted issues in custom processes and review inefficiencies. In addition, the existing Guide describes common technology adoption curves and includes a number of market saturation diagrams in section 2 to explain the ISP concept. These diagrams, while interesting, imply that ISP determination is based upon market saturation/penetration rate. This has two major drawbacks: 1) It is unclear at what saturation/penetration rate a measure should be considered ISP; and 2) If you assume ISP at less than 100% saturation/penetration, then you are saying that market laggards are not allowed to benefit from the program, even though they are very unlikely to be free riders. This would reduce the uptake of the measure across these laggards, resulting in lower savings.

Commission staff often contended that the ISP determinant isn't market saturation rate (historical or in-situ adoption), instead ISP determinant should be today's trend of measure procurement and installation, yet again, no specific metric or threshold is recommended as the determinant. In either case, the absence of quantifiable metric or threshold for determining ISP in the existing Guide results in increased uncertainty and difficulties in implementation of ISP baselines and lends outcomes from an ISP investigation to subjective judgment.

There are policy, reporting, and claim elements relevant to ISP studies. For example, there is a need to convey that the baseline option used for a custom project must meet the customer's minimum technical, functional and economic requirements, and that the proposed measure must be the more costly, more efficient option which exceeds the minimum requirements. ISP investigations in site- or custom-specific projects need to address multiple viable options meeting the minimal needs before a reasonable baseline can be derived. In addition, ISP studies have been conceived unfortunately by some to have limited values as they are perceived to increase the baseline thus reduce claimed savings; yet roles of ISP studies in contributing to savings aren't fully recognized, if at all, when compared to the roles of Codes and Standards(C&S). For example, both PG&E and SCE's 2017 goal filing indicates significant C&S contribution to savings goals (40~50% for energy savings); yet there is effort or no means to track how ISP work's contributed to savings, especially net savings. Using ISP study outcomes for baseline implies that the savings estimated from that baseline are NET savings, and should not be adjusted by the results from a NTGR survey. This would align ISP baselines with how C&S baselines are used to estimate savings. In the Guide update, it may be helpful to recommend/create a process for which every measure or application that utilizes ISP studies or goes into ISP investigation is credited formally to the "standards" aspect of codes and standards.

ISP studies that followed the existing ISP Guide and CPUC staff directions in recent years can be time-consuming due to confusion and gyration with custom process reviews.

1.2 Purpose

In order to enhance the usefulness of ISP studies, it is necessary to update the existing ISP Guide document to clarify the above issues. In particular, the existing Guide need a major revision as

it's necessary to provide the study approaches applicable to various measures or applications, and to provide guidance on how and when an applicable ISP investigation should be performed, especially for custom measures being included in on-going custom projects subjected to custom reviews. Clarifying roles and responsibilities, incorporating timelines to carry out and finalize dispositions around ISP baselines, and an independent dispute resolution process and entity, would resolve many of the issues and reduce the costs of ISP studies, while ensuring they are used appropriately to develop more accurate savings estimates and help programs stay relevant in markets.

2. Essential Issues for Inclusion in the New/Updated ISP Guide

In order to develop a clear framework and focus T2WG conversations on key areas to improve, we propose to review the following questions first to reach a consensus of what needs to be worked on, and clarify what we will seek to accomplish from the revision effort. Clarifying the intended purpose will affect how the guidance document will be written, what is in scope for the T2WG, and what should be addressed in other forums.

2.1 Confirm the fundamental purpose of ISP studies

Some preliminary examples of potential use cases for ISP studies for T2WG to explore are listed below:

- 1) Determine if a measure still warrants program support. i.e., study today's market trend for possible measure sunset
 - 2) Determine if measures which have not been previously supported by ratepayer funds should be supported, i.e., study today's market trends for a new or existing measure(s) that would have broad market applications.
 - 3) Investigate and develop information needed to determine the appropriate counterfactual baseline for a specific application of a measure (for custom project), i.e., for one-off, unique or semi-unique measures applicable to a very limited market/application.
 - 4) Describe how ISP study results should be used in baseline selection (e.g., how would an ISP result affect the baseline selection for a laggard or early adopter in high and low market penetration scenario, respectively)?
 - 5) Provide guidance on how to identify appropriate baseline absence of a code, existing ISP study, or disposition.
- In the case of item 2), ISP studies will advance industry's understanding of today's market trend and standard practice. The outcomes of such ISP studies will advance our understanding of the market trends, and provide information to guide portfolio/program design and influence.
 - In the case of item 3), when ISP studies are used to support the development of appropriate counterfactual baselines in specific projects, then T2WG needs to address at least the following:
 - In customer projects, establish and document measure type & eligibility, measure options, and provide evidence of some program influence, before an ISP study is

initiated. What data (i.e., today's market trend) do PAs need to collect to support an ISP counterfactual baseline determination?

- Do broad market studies suffice?
- What secondary research suffices?
- What primary research suffices?
- Develop specific core questions to ask if interviews/surveys involved?
- o Who collects the data and does the analysis?
- o Who is involved in the development of the research plan? What process is followed?
- o How is the data analyzed and interpreted?
- o If stakeholders disagree on the results, who do they go to for dispute resolution?
- o Establish timelines for each step.

As mentioned, there are policy, reporting, and claim elements relevant to ISP studies. In the update, clarifications should be made to address issues enlisted in 1) through 5), including custom process reviews. Items 1) through 3) focus on study approaches and study processes; Items 4) and 5) focus on policy and may be relevant to custom process review.

2.2 Reality Checks and PG&E Recommendations

The strength of the existing ISP Guide (V.1.2A) is that it provides key steps for a typical market-based ISP study. The ISP Guide needs to be rewritten to make it clearer, more concise, and resolve current confusion that results in subjective interpretations and unnecessary disputes.

PG&E recommends that the T2WG focus on the above issues first (i.e., purpose, scope, and approaches). Once the T2WG agrees on the core conceptual terms and the types of study activities needed to carry out, PA should address issues such as where the budget is coming from to do the ISP studies, where the IOU ISP lead should reside (e.g., Program, Engineering, Tech Review, or EM&V) to foster impartiality. The T2WG can then decide/confirm:

- if there are several levels and approaches of ISP research (e.g., application types, sizes of the sample, small to very large, levels of rigor)
- what triggers an ISP study
- who can request one
- the detailed process to carry these out
- how much stakeholder input is required and when, timelines, approval processes, etc.

2.2.1 Reality Checks – What's problematic or missing in the existing Guide?

- ISP concept, definitions & applicability (specific market) – The existing Guide presents murky definitions, often conflicting within the text. The term ISP is often perceived as market penetration in the document. Market saturation graphs in the existing document, while interesting, imply ISP determination is based upon penetration rate; however, the ISP Guide does not indicate any penetration or market saturation metric or threshold that would define a measure as ISP.
- Clarification of relevance & difference of market saturation/penetration vs. ISP.

- The existing Guide is too long and lacks clarity in important aspects affecting custom project ISP issues. For example, the ISP Guide doesn't provide guidance on designing effective surveys (e.g., design of questionnaires and samples).
- **[Currently Missing or Insufficient, section 2.1 items 1 through 3]** What type of ISP study should be used/developed for which situation?
 - Market-based (sector/measure) vs. One-off/Exception vs. sunset
 - Purposes of ISP studies (deemed and custom projects)
 - Types of ISP study
 - Pre-ISP vs. early opinion vs. market-based ISP vs. one-off (custom-specific)?
- Process/reviews/stakeholder roles throughout the process of an ISP study
 - Request form for scope of work
 - Survey instrument and review
 - Sample selection and recruitment
 - Survey administration
 - Data compilation and analysis
 - Literature reviews
 - Draft report
 - Stakeholder/ED review
 - Final publication (venue) current: <http://www.cpuc.ca.gov/General.aspx?id=4133>
- Turn-around time for each step
- Level of Rigors – low vs. high (does existing division make sense? If yes, how can each level bring the most cost-effective values other than who would be eligible to request an ISP study of high or low rigor? Would it be more appropriate to distinguish based upon the study approach?)
- **[Recommendation related to Section 2.1 item 3)]**: A clear guideline needs to be developed in this update, in sync with the custom review process, to avoid review process delays or wasted efforts. We recommend the T2WG to work out a synchronized process between the ISP study and custom review process to minimize project delays due to absence of an ISP study. For additional info, refer to PG&E's Collaborative Review (CR) Protocol.
- Essentials for developing an ISP study
 - Understand the trigger (e.g., savings: kWh, therm, \$)
 - Determine purpose and scope
 - Determine the type of ISP study and approach
 - Determine sample and rigor level
 - Who design the questions
 - Who leads/performs the study or investigation and analysis
 - When/How to use the study outcomes
 - Who reviews and approves the study report
 - How to identify if customers have already adopted the measure as standard practice.
- **[Currently Missing or Insufficient, related to Section 2.1 item 4)]** How to address ISP for laggards (late adopter in the market of high-penetration) vs. ISP for leaders (early adopter in market of low-penetration)?
 - Differentiate by market sub-segmentation?
 - How, e.g., by size of business, financial status, location, ...

- **[Currently Missing or Insufficient – related to Section 2.1 item 5)]** Custom measure ISP investigation approach. How to address baseline assumptions when there is no market-based ISP study or code or disposition available? This is particularly true and needed for custom projects that include unique or semi-unique measures, or measures applicable to limited market applications. The existing ISP Guide does not address these cases in detail (see Section 4.5 on one-off or exception) and has resulted in confusion on how to treat these situations. The Guide doesn't clarify approaches applicable for different types of ISP investigations (e.g., sunset vs baseline). This has led to confusion and wasted resources in the custom review process.
- **[Currently Missing or Insufficient, also related to section 2.1 item 5)]** How-to's if there is no ISP trigger (kWh/therm), --- what requirements and options can be used to establish appropriate baselines for customer projects with savings lower than the threshold triggering ISP study.
- **[Currently Missing or Insufficient] – Also relevant to policy issues needed for discussion and update.**
 - o How ISP study results should be used (deemed vs. custom?)
 - o Things to avoid when applying ISP study outcomes for deemed vs. custom projects
 - o Avoid treating market-based ISP study as a cookbook for single handily qualify a custom project

2.2.2 PG&E Recommendations based upon lessons learned (For classifying the study types, process, method, and effort to improve the existing Guide)

ISP Guide should address at least three distinct situations enlisted in the following table. For each situation, define roles and responsibilities (who does what), the investigation approach (including samples).

ISP Study Type & Approach	Samples	Rigor
Measure sunset for deemed program	Customer (participant & non-participant) Vendors/suppliers/manufactures Designers Sample size: small	Low-rigor
Market-based ISP (sector-wide, or specific measure that has broad market application)	Customers (participant & non-participant) Vendors/suppliers/manufactures Designers Sample size: moderate to large	High-rigor or low-rigor
Custom- or site-specific ISP investigation	Vendors/suppliers/manufactures Designers	Low-rigor Large

	Sample size: small Collaborative Review (CR) with the customer (applicant) when necessary	project requires in-depth CR
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3. Proposed Solution

In summary, the current Guide is confusing as it mixes 3 distinct uses and expectation of an ISP study. We need a new Guide that addresses each distinct use of ISP study and provides guidance on how to carry out research to establish and implement ISP study for each of these. ISP initially meant to be used as another piece of evidence to corroborate a hunch by PA/PI that a measure in a specific market was becoming the norm and therefore, was ripe to be sunset from our portfolio of offerings. ISP was extended by CPUC to be used to establish the counterfactual baseline for custom projects where no code/standard could be used and allowed for once-off exceptions but lacked clarity on how to address these instances. The new Guide should probably include policy elements related to custom process.

PG&E staff believes that the existing Guide needs a major revision to improve its clarities, conciseness, readability, and usefulness. The overarching purpose of this updated guidance document is to draw upon the latest experience to improve practices and policies to make the ISP studies more cost effective and valuable. We would be happy to provide straw-person proposal for the T2WG to start with and refine during the course of update per the Decision.

Goals of ISP studies are:

- Support risk mitigation in program design, development and implementation
- Support compliance and improve program cost-effectiveness
- Support responsible administration of ratepayers funds
- Advance statewide collaboration and knowledge sharing of current sectoral and end-user practices

The updated guide shall explain the concepts of Industry Standard Practice (ISP) clearly and consistently; the types of ISP studies for three different applications (see the above table); and to describe the processes for establishing ISP studies and implementing Industry Standard Practices. This document should refer to relevant CPUC policies, the terminology, the process of technology adoption, factors that likely indicate technologies becoming Industry Standard Practice, and process for developing and implementing an Industry Standard Practice study. The new guide should cover the following topics:

- Definitions of Industry Standard Practice (ISP) and ISP study
- Types of ISP studies and their triggers
- Process of requesting and performing an ISP study
 - Prescreen of ISP study
 - Submit a request for an ISP study
 - Review and determine purpose and scope of an ISP study
 - Perform ISP study/investigation (design, review, and administration of survey instruments, review and data analysis)
 - Report, review, and publish ISP study findings
- Address policy, reporting, and claim elements relevant to ISP studies, such as
 - Implementation and appropriate use of ISP study findings

- o Using ISP study outcomes for baseline implies that the savings estimated from that baseline are NET savings - align ISP baselines with how C&S baselines are used to estimate savings.
- o How and when to integrate the study and outcomes into the custom project review process in compliance with the resolutions
- o Develop a viable custom protocol so that absence or incompleteness of a market-based ISP study doesn't present itself as the stopper for new project development (See PG&E's project development (PD) protocol)

4. References to Decision and existing ISP Guide

R.13-11-005 ALJ/JF2/lil PROPOSED DECISION, Page – 38 (Verbatim in Decision)

Another issue to be addressed in a collaborative setting is the development and application of Industry Standard Practice (ISP) determinations, as suggested by SCE in its comments on EM&V.

We decline to stop reliance on ISP determinations entirely at this time, as suggested by CEEIC in their comments. Informal ISP studies were initiated by the utilities as a method of risk assessment for individual projects. Those studies can still be helpful in determining whether an implementer has achieved incremental energy savings by convincing the customer to go beyond the usual type of equipment purchased in that customer's sub-segment, and for identifying larger ISP market studies that should be carried out by the program administrators.

- We agree with SCE that the current ISP Guidance Document should be revised.
- This should be a topic to be addressed in the collaborative working group convened by Commission staff and/or utilizing an existing collaborative forum.
- We also agree with the CEEIC's contention in its EM&V comments that broader ISP studies should be used as an approach to market assessment.
- How these studies should be designed and carried out should be clarified in the revision to the existing ISP Guidance Document (i.e., "Industry Standard Practice Guide, Version 1.2A," Final Living Document, April 2014, <http://www.cpuc.ca.gov/General.aspx?id=4133>).

Industry Standard Practice Guide, Version 1.2A (Verbatim in existing ISP Guide)

2.1 A basic definition for Industry Standard Practice: Industry Standard Practice (ISP) represents the typical equipment or commonly used current practice absent the program.²

2.7 ISP by Code or Regulation. Codes and regulations enacted by federal and local governments, and regulatory agencies can mandate a particular technology to be utilized and therefore force it to be ISP. This is also referred to as Code Baseline. During an ISP study investigation, the technology or measure must still be fully evaluated because even though codes and regulations mandate its use, the industry may be installing a technology that is above and beyond the code baseline as standard practice. This can occur when code standards have been long standing that are outdated, and new technology innovations have been adopted by the industry on its own volition.

2.8 ISP by Default. There are some applications where only one technology is available; no alternatives are commercially available. This can occur when the Industry Standard Practice of one technology is well established over time and all other alternative technologies have died out and became obsolete. Since only one technology is available, it is ISP by default. This also implies that there is only one level of efficiency available for the technology. No incentives will apply.

2.8 No ISP. It is also possible for an Industry standard practice not to exist. This occurs when there is no common practice; where end users are installing more than one technology with none of them typically preferred.

2.10 ISP Risk Assessments. The purpose of an "industry standard practice" (ISP) study is not to assess the potential energy savings that a proposed custom measure can achieve when compared to the existing old equipment. Rather, the purpose is to recommend the appropriate baseline for calculating the potential energy savings. The methodology may not always be intended to provide statistically significant measurements of market penetration rates; a preponderance of evidence of ISP would suffice most of the times. The intent is to collect enough data to make an informed decision and to mitigate Program Administrator and Implementer's risk that the claimed energy savings for the proposed project will be discounted or disallowed by the CPUC impact evaluation studies.

² Per the CPUC, D.12-05-015. Page 351: For purposes of establishing a baseline for energy savings, we interpret the standard practice case as a choice that represents the typical equipment or commonly-used practice, not necessarily predominantly used practice." It also said, "Industry standard practice baselines are established to reflect typical actions absent the program."

2.11 What ISP Studies Don't Do? Industry Standard Practice Studies do not evaluate how much energy will be saved by its implementation. Nor do they survey installed market penetration, since this is not a good indicator of ISP.

3.1. What is an Industry Standard Practice Study? An ISP Study is an investigation as to what is presently the Industry Standard Practice for a technology/measure in a given application/market segment.

When ISP studies to support baselines are not conducted, strong evidence or prior and currently valid ISP study must exist to waive the need for an ISP study when baseline considerations require it.³ Strong evidence, subjective but must rely on multiple sources/evidence that could draw from the some of the following:

1. Years since the proposed technology has been introduced; secondary sources on market share
2. Years the proposed technology has been in the program
3. Literature to demonstrate that the proposed solution is not mature
4. Demonstrated evidence of the IMC not meeting typical payback requirement of about three years
5. Evidence of lack of widespread availability
6. No regulatory or industry standard driving technology or process solution selection
7. Equipment performance concerns as demonstrated by customer conducting due diligence to reduce risk.

³ See section 4.5 for One-off or Exceptions.