

Introducing... Emerging Technologies! Evaluation of Vendor Partner Solicitation Efforts

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ABSTRACT

This paper describes the results of a recent process evaluation of a sub-program of the California investor-owned utilities' (IOUs') Emerging Technology Program¹ meant to introduce emerging technologies to the market on a limited scale. The Technology Introduction Support (TIS) subprogram solicits delivery concepts from third party implementation contractors, and transfers winning projects and funding to the IOUs' Third Party Programs. This paper examines ways to improve how the IOUs engage with third party vendors to introduce innovative technologies to their portfolios. Two of the four California IOUs chose to fulfill the TIS requirement by creating a separate Technology Resource Innovation Program (TRIP) solicitation while the other two utilities used either the existing ongoing Innovative Designs for Energy Efficiency Approaches (IDEEA365) solicitation or issued a one-time emerging technology-focused IDEEA365. Our comparison found there are pros and cons to the various approaches being used by the IOUs, with no one superior approach. Through in-depth interviews and documentation review, Evergreen found that each IOU approach achieved the goals of striking an appropriate balance between encouraging a robust market response with new vendors and innovative technologies while achieving cost-effectiveness, moderating risk and ensuring effective implementation. This was the first program cycle during which this concept was tested; though efforts were fairly modest, the findings reveal opportunities for improvement in the solicitation process including approach, communication and clarity of intent. If IOUs attempt to scale up TIS and allocate more budget to third party programs, both TRIP and IDEEA365 approaches may need to incorporate suggested improvements.

Introduction

California IOU Program Administrators (PAs) are encouraged to accelerate adoption of new technologies to meet increasing savings goals. Third party (3P) vendors offer the potential to help with this effort by partnering with PAs to test the market's appetite for emerging or underutilized technologies.

In this paper, we compare strategies used by each of the four California IOUs— Pacific Gas and Electric Company (PG&E), Southern California Edison (SCE), Southern California Gas Company (SCG), and San Diego Gas & Electric (SDG&E) — in order to advance adoption of emerging technologies by partnering with 3P vendors that have innovative products or projects. The paper highlights the successes and challenges the IOUs faced in trying to engage with both experienced implementers and less-experienced vendors (firms that lack energy efficiency (EE) implementation experience to solicit innovative new delivery strategies and products and generally have a technology

¹ Evergreen Economics, 2015, a

focus). We offer lessons learned that are useful for PAs and policymakers across the country that want to expand partnerships with vendors and tap every promising source to deploy new technologies.

Background

The Emerging Technologies Program (ETP) is tasked with assessing, developing, and introducing new technologies at each of the four IOUs. The IOUs share work through the Statewide Emerging Technologies Coordinating Council, which is a collaborative forum that aims to achieve the state's strategic energy savings goals outlined in the California Energy Action Plan and is partly funded by IOU ratepayers.²

The California IOU ETP began in the late 1990s³ with the goal of performing technical assessments of technologies. While this remains a focus of ETP today, the program has gone through various modifications in subsequent years. In the 2004-2005 program years, ETP transitioned from a sole focus on assessing and showcasing technologies to include the acceleration of the adoption of new technologies into EE programs.⁴ This period also brought the development of a formal technology selection process that evaluates technologies based on specific criteria.⁵

In 2008, the California Public Utilities Commission (CPUC) adopted the state's first Long Term Energy Efficiency Strategic Plan, which created an integrated framework of goals and strategies for saving energy.⁶ In the Strategic Plan, emerging technologies are explicitly identified as critical for achieving aggressive energy savings goals. In addition to technology assessment, ETP relies on technology introduction support and technology development support to identify technologies that can help the utility resource programs meet these aggressive goals.⁷ In 2010-2012, the Program was organized with six components, which have since been re-organized into three subprograms for 2013-2014.⁸ Figure 1 on the next page depicts the three subprograms and their place within the utility structure.

Our research focused on the Technology Introduction Support (TIS) subprogram. For the 2013-2014 program years, TIS had a budget close to \$16.8M across all four IOUs, which was 44 percent of the overall ETP budget. This particular subprogram's focus is thematically focused on first-hand experience and market exposure rather than evaluation and spurring technology development (as is done in the first two subprograms).⁹ TIS seeks program delivery concepts from implementation contractors (also known as 3P or 3P vendors) through solicitations, and transfers winning projects and funding to the IOUs' 3P programs for the remainder of each project's contract.

² Emerging Technologies Coordinating Council. 2015

³ Hornquist et al, *The Power of Ten: A Decade of Growth for Emerging Technologies Programs in California*, 2014 ACEEE Summer Study, 2014.

⁴ ECONorthwest, 2007

⁵ ECONorthwest, 2007

⁶ California Public Utilities Commission. 2015

⁷ Evergreen Economics, 2015, b

⁸ Energy Efficiency Statistics. 2015

⁹ Energy Efficiency Statistics. 2015

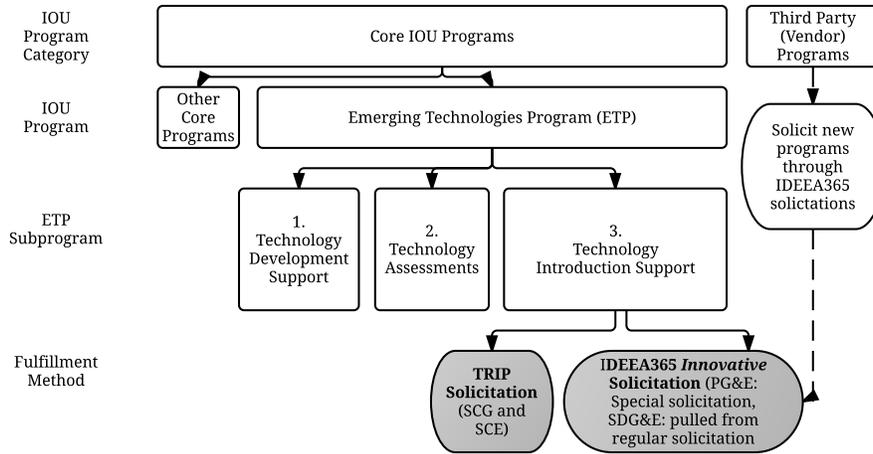


Figure 1. Overview of Program Structure and Objectives

The final row in the above figure shows the two ways in which the utilities we studied chose to fulfill the TIS subprogram. As shown in the graphic, two utilities use an existing solicitation process that is run under 3P Programs called IDEEA365. One of the two utilities pulls any innovative ideas that may be submitted through IDEEA365 to review as part of the ETP TIS subprogram, and the other utility runs a special emerging technology-focused IDEEA365 solicitation. The remaining two IOUs utilized a solicitation process called TRIP, which is modeled after IDEEA365 but is run as a separate process. Table 1 compares the two processes and shows differences across utilities in how they have chosen to fulfill TIS.

Table 1. Program Comparison Summary, by Fulfillment Method and IOU

		Fulfillment Method			
		IDEEA365		TRIP	
		PG&E	SDG&E	SCE	SCG
Solicitation Traits	Format	Ran a special <i>innovative</i> IDEEA365 solicitation	Pulled innovative concepts out of existing IDEEA365 solicitations	New solicitation process done within ETP using IDEEA365 as a template	
	Focus	Seeking innovative delivery methods for technologies (more broad than TRIP)		Seeking innovative technology with a specific focus on energy-efficient technologies in the commercialization phase.	
	Number of Stages	2		1	2
	Maximum per Project Budget	None specified		\$300K	\$150K
	E3 (Energy+Environmental Economics) Calculations Required	No		Yes	No
	Sum of ETP budget awarded for TRIP (to 3Ps)	NA		\$2.1M	NA
	Number of Bids Received	16	Unknown, 4 bids flagged for ETP consideration	53 (over four rounds)	NA
	Number of Bids Awarded	2	2	4	NA

There are substantive differences between the two solicitation vehicles. While TRIP solicitations are intended to be issued periodically and focus only on emerging technologies, IDEEA365 accepts proposals year round (until funding is exhausted), and seeks proposals for innovative program delivery methods for existing, proven energy efficiency measures. The IOUs solicit proposals from third parties for innovative EE programs that penetrate difficult-to-reach markets and drive the greatest energy savings for the long term. The use of emerging technologies in IDEEA365 is not required nor expected.

Evaluation Goals and Methods

The IOUs hired Evergreen Economics (Evergreen) to conduct a process evaluation on the effect of the solicitation processes on the quality of the submissions, with objectives to:

- Determine the pros and cons of the two solicitation processes—TRIP and IDEEA365—in meeting ETP’s objectives;
- Conduct comparative analysis in regards to each IOU’s differing needs and how they choose to fulfill the ETP objectives; and
- Seek opportunities to offer suggestions for improvement.

Evergreen conducted several research tasks to assess the study objectives:

Program data and documentation analysis.

An early project task was to review existing background materials on the TRIP and IDEEA365 programs, including program implementation plans (PIPs) and current and past solicitation requests for proposals (RFPs). This review provided information on the types of projects that have been funded and the persistence of these technologies, all of which provided useful context for the in-depth interviews.

Program staff interviews

Evergreen conducted interviews with the IOU program managers who are involved with the TRIP and IDEEA365 programs. These interviews included the managers of ETP at each IOU, plus other efficiency program managers who have a significant interaction with either the TRIP or IDEEA365 programs. The program manager interviews covered a range of topics that helped the evaluation team understand how the solicitations are implemented.

3P vendor interviews

A key element of this evaluation was to talk with vendors who have submitted proposals to the TRIP and IDEEA365 programs. This included interviews with those vendors that were awarded funding along with those that were not selected for funding. Additionally, for IDEEA365 solicitations, Evergreen only targeted those projects that are relevant to ETP. Questions in these interviews emphasized the solicitation process (e.g. the effectiveness of marketing, clarity of solicitation materials, openness of the process) and solicited suggestions for improvement.

Review of submissions

An important element of the evaluation was to understand how submissions have been scored and how winning proposals are selected for funding. To address this, Evergreen reviewed proposals submitted in response to TRIP and IDEEA365 (ETP related) solicitation events. Evergreen also reviewed the scores and interviewed those involved with the scoring to understand how the scoring criteria were applied and how the final award selections were made.

The number of items reviewed for each of these research elements are shown by utility and solicitation process in Table 2.

Table 2. Program Comparison Summary, by Fulfillment Method and IOU

		Fulfillment Method			
		IDEEA365		TRIP	
		PG&E*	SDG&E	SCE	SCG**
Research	Solicitation Rounds Reviewed	1	1	3	-
	Number of Bids Reviewed	0	3	45	-
	Program Staff Interviews	3	3	1	3
	Vendor Interviews	0	1	3 awarded vendors 6 rejected vendors	-

*Bids and bidder interviews will be included in a later iteration of research. **Had not issued a solicitation at the time this research was performed. Will be included in a later iteration of research.

Findings

In this section, we present our overarching findings and present supporting research from in-depth interviews and bid reviews.

The IOUs were successful in identifying concepts featuring ETs.

As described in the introduction, the four CA IOUs took two different approaches to solicit concepts. In this section, we describe the success of each of the four utilities. SCE used TRIP and received a broad range of bids, covering many different customer segments, measure types, and technologies from a broad pool of vendors. SCE was able to meet its program goals and brought in two new vendors that had not implemented energy efficiency programs for the California IOUs (including one from the fourth solicitation) of the total of eight awarded bids. One of the programs has since been cancelled since it did not meet its goals, but in the process, SCE staff indicated that they learned a lot about how to approach the target market going forward. Ultimately, SCE staff envision using the TRIP solicitation approach to add more innovative measures to the portfolio—promoting more flexibility and transparency among the IOUs and 3P vendors. The other utility that used TRIP (SCG) did so after the initial research period and will be included in a later iteration of research.

Both utilities that used the IDEEA365 format were able to bring in new concepts. SDG&E successfully identified two program concepts from the IDEEA365 solicitation that were appropriate for technology introduction and may be scalable for the Core programs (as a contrast to more technical measures that are brought through Custom program processes. The combination of Core program staff screening concepts and bringing in ETP staff to review the validity of potential measures savings claims was an efficient and effective approach for SDG&E. If a work paper gets developed and the measure or program concept gets moved into the Core program for either or both of the concepts SDG&E is testing, it envisions that the technologies could go into a 3P direct install or midstream program, which would likely go out to bid. SDG&E mentioned that using a bidding process added competition and leverage, and could possibly speed up the process as compared to staff soliciting vendors one by one for concepts outside a competitive bid process.

For PG&E, the IDEEA365 approach was successful in identifying two promising concepts that are currently being tested. The utility staff feels that the IDEEA365 framework is efficient and taps the existing process, which is very robust and tested, and that doing a separate TRIP solicitation would consume too many resources. They feel that vendors that are registered on PEPMA (the California Statewide IOU and Energy Efficiency Solicitation website) and have gone through the IDEEA365 solicitation process are tried and tested, established implementers.

A TRIP solicitation process may entice more new vendors than the existing IDEEA365 to submit proposals but this comes at the cost of attracting new vendors who require more training.

Vendor interviews and analysis of bids confirmed that new vendors who do not typically submit project concepts to the IOUs are enticed to submit project concepts when there is a different submission process (TRIP). Based on the research hypothesis, this may result in a broader, more innovative pool of relevant technologies, though we could not test this assumption since comparisons across approaches were limited by the available data.

Based on our observation of lower scores for less-experienced vendors and our review of their bids, less-experienced vendors are less likely to submit a solid implementation plan. In addition, less-experienced vendors require more training on how to respond adequately, based on these scores as well as on 3P vendor interview results and SCE program staff feedback. We noted a relatively lower bid acceptance rate for less-experienced vendors, and a decline in bids by less-experienced vendors since the first of SCE's TRIP solicitations; less-experienced vendors may not want to keep submitting proposals if their win rate is very low based on their lack of implementation experience.

However, a pre-existing solicitation process (IDEEA365) may yield projects with less risk and more commercial viability.

With pre-existing solicitations, vendors who have experience with the solicitation are more likely to respond with technologies that are proven. It is much harder to attract new vendors with innovative concepts who lack IOU program implementation experience, as evidenced by the lack of awards from PG&E and SDG&E to new vendors and as revealed during SCE program staff interviews, when using pre-existing solicitations.

PG&E staff reported they may be missing innovative ideas from new vendors, but staff are concerned that new vendors would not be able to deliver energy savings in a timely manner under the constraints in which the IOUs administer their portfolios.

Vendors are less influenced by budget size than is perceived by utility staff.

IOUs that utilized the IDEEA365 solicitation process had a maximum per project budget of \$1,000,000, larger than the maximum per project budget for TRIP (\$300,000 per project for SCE and \$150,000 per project for SCG). SDG&E felt that the IDEEA365 solicitation process, with its larger budget of \$1 million per program, enticed a larger audience to submit proposals and they later negotiated down the awards to under \$100,000 per project. We asked four 3P vendors that had only submitted a proposal under the TRIP solicitation whether a budget increase to \$1 million (similar to the IDEEA365 solicitation) would change how they approached future bids; three of the four responded that it would not impact their bid.

The presence or tolerance of risk in a given submission was a strong consideration on the part of both utilities and vendors.

By issuing a TRIP solicitation rather than the existing IDEEA365 solicitation, SCE anticipated getting a broader, more diverse vendor response, including from new vendors, with more innovative technologies. By setting a lower budget than IDEEA365, SCE felt that it could better manage the risk associated with testing a technology that lacks a work paper or Database for Energy Efficient Resources (DEER) savings values. Staff opted to require cost-effectiveness calculations to ensure that savings are

already proven, since by definition the target technologies lack work papers. In contrast, SDG&E opted to address its objectives through its IDEEA365 solicitation process (on an trial basis) since it only allocated \$100,000 per concept for a total of two concepts; SDG&E felt that \$100,000 per concept was an appropriate budget that allowed for testing of the concepts while managing the risk.

Two vendors we interviewed complained that they had to bear too much risk. For example, SCE set up the contracts such that 20 percent of the budget could be billed as time and materials, with the remainder fixed fee based on performance. This approach is fairly consistent with other 3P programs, but the two vendors felt that for an emerging technology-focused solicitation, an approach that would spread the risk more evenly would be more conducive to encouraging a more robust market response.

A two (rather than single) bid stage approach may encourage more bidders to submit proposals in the future. 3P vendors would prefer to complete cost-effectiveness requirements after passing an initial acceptance phase.

A two-stage approach allows bidders to be accepted or rejected on a first round of information before investing time in submitting a bid with a higher level of detail. This may attract a greater number of bids since an abstract requires less vendor effort and requires less IOU staff time at least in the initial round. A one-stage approach requiring a robust proposal with cost-effectiveness calculations such as SCE has used frustrated some of the vendors, and may lead to a less robust vendor response in the future. A drop off in response to TRIP over successive solicitation phases was observed by researchers, and some vendors corroborated the finding, revealing that they may not respond to future solicitations because of the difficulties experienced by vendors in preparing a complex proposal.

SCE admitted that requiring vendors to provide cost-effectiveness data on new technologies was a challenge for many vendors. SCE attempted to address this issue by providing training during the solicitation process. Staff reported that in general, vendors needed help with the E3 calculator and meeting the cost-effectiveness criteria. SCG plans to use a two-phase approach to its TRIP solicitation; staff hope that this approach may attract a more robust vendor response, with less effort required from bidders. PG&E staff thought that had they conducted a TRIP solicitation using a single-phase approach, bidders may not have been able to successfully develop the E3 calculations. They also felt that requiring cost-effectiveness calculations and using it as a major criterion was inconsistent with encouraging innovation. SDG&E feels that the two-phase IDEEA365 process will attract more bidders.

Five vendors responded to Evergreen's request for feedback on TRIP versus IDEEA365. These vendors submitted a similar concept under both SCE's original IDEEA365 solicitation and the subsequent TRIP solicitation; four of the five said they preferred the easier two-stage approach of IDEEA365, based on it requiring less up front work, though one of these four admitted that the extra work would not impact their decision whether to bid again.

Vendors mentioned that it was difficult to develop savings claim information and/or that trying to be innovative while adhering to strict cost-effectiveness criteria was incompatible. PG&E did not use such strict criteria for cost-effectiveness. PG&E and SCG use a two-stage bid approach that does not require data in the first stage, which would also address the issue of lack of robust data. Two vendors said the bid and award process was very lengthy. One thought that TRIP was addressing a gap in the portfolio and was a solid concept with good execution.

Evergreen asked vendors whether they would consider submitting another proposal to the California IOUs, and three of nine said they would, while an additional two said they would submit proposals in response to an IDEEA365 solicitation only, but would not in response to a TRIP solicitation. Three vendors (all with rejected bids) said they would not and the final vendor said it was uncertain. Comments that were provided mostly echoed previous comments related to cost-effectiveness concerns, a preference for a list of desired technology types, and issues with the bid process. Staff would

like to train vendors on how to provide the appropriate cost-effectiveness calculations. SCE will be discussing this issue with the ETP Peer Review Group¹¹ (PRG) and is open to revising how it approaches cost-effectiveness in future TRIP solicitations.

Both vendors and utility staff benefit from clear definitions of innovation and eligible technologies.

The bidder perspective is often different from the IOU perspective regarding the barriers to acceptance of the technology. In general, the bidders' perspectives did not match any utility opinions. Feedback from the utilities to 3P vendors may help to improve the quality of bids submitted by repeat bidders in the future. Another interesting note from the analysis is that two firms expressed that they were told they could not do both energy efficiency and demand response together. Clarifying this in the next solicitation may help avoid this confusion and save both parties from time spent on ineligible proposals in the future.

The average score given by sampled vendors (n=9) on whether the TRIP solicitation had clearly defined innovation was 3.3 on a scale from 1 to 5, where 1= not at all clear and 5 = very clear. Notably, one of the vendors that had a bid accepted (and that had high overall scores) felt that the definition was not very clear.¹² This vendor was an experienced implementer that partnered with a less-experienced firm as a subcontractor, so it may be that the less-experienced vendors had enough of an understanding of the bid requirements to get high scores and ultimately awards. Only one vendor in our sample with no accepted bids rated the clarity less than a 3. Three of the four vendors with rejected bids that rated the clarity highly (as a 4) had problems with the technologies they included in their bids from the utility perspective. These vendors' responses are inconsistent with their bids—they thought the requirements were clear but they included technologies that did not meet the specifications.

We asked vendors a similar set of questions related to the clarity of the definition of eligible technologies. SCE staff further educated bidders on the definition of eligible technologies at trainings and SCG provided a list of technologies that they considered appropriate for TRIP in their request but also allowed vendors to use additional measures. The average score provided by vendors that submitted concepts under the SCE's TRIP solicitation was 3.3. The same two vendors with accepted bids (both experienced implementers) gave the lowest scores about the clarity of the eligible technology requirements. Evergreen also observed that vendors that highly rated the clarity of eligible technologies in the RFP had their bids rejected due to either possessing and offering a technology that was not sufficiently tested or one that was already in the marketplace, consistent with the disconnect described above.

Both vendors and utility staff benefit from processes that that facilitate education and communication.

Vendors and utility program staff acknowledged difficulties with communication and training during the solicitation process, and the IOUs have plans to address them. SCE would like to further streamline the RFP and make it more concise and would also like to improve communication of bid review progress including notification to vendors of the award status. Staff acknowledge they have to work with SCE's procurement department and that there is opportunity for ETP staff to complement the process by communicating award status to vendors. SCE's communication and training to vendors about the solicitation process included a mandatory bidder's conference, workshops, training and networking

¹¹ An advisory group that includes CPUC staff and others with energy efficiency expertise that serve as peer reviewers.

¹² One of them was the SDG&E bidder that responded to the IDEEA365 solicitation.

provided through the TRIO program and a formal question and answer period. Staff reported that in general, vendors needed help with the E3 calculator and meeting the cost-effectiveness criteria. Because providing cost-effectiveness data on new technologies was a challenge for many vendors, SCE attempted to address this issue by providing training during the solicitation process. SCE staff felt that the TRIP solicitation process improved with each solicitation round as a result of training provided to vendors.

Many of the 3P vendors' bids were rejected because they failed to identify the appropriate stage of technology commercialization that TRIP was aiming for. Though there were vendors in the sample that have additional ideas that they might pitch to the IOUs, they may need further training on the solicitation requirements.

Education is desired on the bidder side as well. Two vendors with rejected bids mentioned lack of feedback during the process and after learning about the award status. SCE program staff agreed this was an area that could be improved, and are working to address a few obstacles to improving the process. One 3P vendor complained that the IOUs said they wanted new vendors, but once the awards were made, it was clear that they wanted implementation experience. That may be an area to address, or at least improve communication about, such as encouraging less-experienced firms to partner with experienced implementers.

Evaluation of responses can take a varying degree of utility staff resources.

Two of the IOUs utilize a process that is already in place (IDEEA365), which means that they do not need to add as many staff as they would if they created a somewhat parallel solicitation process. Screening that involves Core/Third Party program staff may make it easier to spot valid implementation strategies. SCG is leveraging SCE's TRIP scoring criteria and scaling it back slightly due to smaller contract size (expecting two contracts at \$150,000 versus SCE's contracts at \$300,000 each).

ETP staff involvement varies by IOU after the award phase, with SCE staff having more involvement during the initial program implementation period. SCE ETP staff set up the contract and monitor implementation. If the program is successful, it is shifted to 3P or core programs. (If unsuccessful, SCE cancels the program.) SDG&E and PG&E ETP staff more immediately shift the programs over to 3P program staff, who prepare the contracts and oversee program implementation.

The IOUs find different ways to integrate input from 3P program staff regarding what would make a valid implementation approach during the selection phase. SCE has the same staff person who implements IDEEA365 implement TRIP. When using IDEEA 365, Core/3P program staff flag items for ETP as "TRIP-appropriate."

Vendors that partner with other vendors have a better chance of winning bids than those that submit solo bids.

We investigated differences in bid scores based on whether the vendor was an experienced energy efficiency program implementer or was not. Those that have not implemented programs were typically less-experienced firms—vendors that have developed and are selling technologies.

A larger proportion of bids led by less-experienced firms did not partner with other firms when compared to bids led by an experienced implementer.

Of the five SCE winning bids, all awards went to vendors that had partners or to a vendor that is an experienced implementer and also develops its own technology products.) All of the bids that lacked the combination of experienced implementer with less-experienced firm were rejected.

Having a partner made a major difference in the cost-effectiveness scores for both vendor types. A bid's cost-effectiveness was scored based primarily on the energy savings it offered,¹³ since the budget for most bids was at or very near the limit. Many of the bids that received a low cost-effectiveness score that were submitted without a partner either were lacking sufficient data to support their savings claims or the technology was already being used in a Core program. For bids led by experienced implementers, having a technology partner (generally less-experienced with program implementation) may increase the chances that sufficient data are available. For bids led by less-experienced firms, partnering with an experienced implementer may make it more likely that they prepare a complete bid with valid savings estimates, leveraging experienced implementers' prior IOU bidding experience and their knowledge of valid savings calculations and assumptions.

Many vendors would submit proposals to the IOUs even if there were not a TRIP solicitation.

We asked vendors if they would have submitted ideas in the absence of TRIP. Seven of eight vendors said they would have submitted bids in its absence, likely through IDEEA365. Evergreen notes that the TRIP solicitation vehicle was successful in attracting bids from less-experienced firms that have not worked with the IOUs in the past. But for experienced implementers, the TRIP vehicle may not be needed since most say they would find a way to pitch concepts that include emerging technologies. Among our sample, the experienced implementers were not completely convinced that submitting a proposal through TRIP was worth the effort, and it may be hard to encourage them to submit bids again.

Lessons Learned To Date

In this section, we review preliminary lessons learned based on our findings and offer some suggestions to program administrators. The research is continuing, and these suggestions and findings may change after we gather additional data.

There are multiple ways to fulfill the IOU intentions to bring new measures into their portfolios. Soliciting vendors for program concepts featuring innovative measures and/or delivery mechanisms can be a productive method for expanding opportunities for featuring emerging technologies in programs. The solicitation processes presented in this research help to supplement existing IOU efforts to find and test new technologies. The IOUs actively engage their 3P program managers in the review of submitted bids, tapping their expertise in identifying successful program strategies and implementers. This process necessitates striking a balance between getting novel ideas and risking increased time and money spent on ramping up staff resources for these efforts. Below we share the tradeoffs associated with the solicitation processes and where possible, we share the implications of choosing one trait or strategy versus another.

- Program administrators will need to consider the tradeoffs between risk and reward when developing solicitations—putting too much risk on contractors will lead to fewer responses. Such considerations may include:
 - Budget
 - Contractor payment approach (fixed price versus time and materials, or a hybrid)
 - Documentation required to substantiate measure savings
 - Resources needed to educate vendors about documentation
 - Extent the measure is emerging versus commercialized
 - Desired implementation experience

¹³ Only bids that have a TRC of at least 1.0 pass the threshold evaluation and are scored and ranked.

- With solicitation processes (that vary from the more established IOU solicitation process) new vendors who do not typically submit bids to the IOUs are enticed to submit program concepts. Tradeoffs associated with bringing in a new pool of vendors include:
 - Pros:
 - Expanding the pool of measures that may be considered
 - Bringing in more competition
 - Training new vendors on how to implement programs and building energy efficiency infrastructure
 - Cons:
 - More training required
 - More staff time to review proposals, a significant fraction of which may not be applicable due to vendor's lack of experience working with utilities
 - Lack of proven experience implementing programs, so less certainty of success
 - Vendor burnout; if the processes and training are not well developed when solicitation(s) are issued, the vendors might not want to work with the utility in the future if they feel let down by the process
- There are also tradeoffs associated with the extensive documentation required to support the savings claims of emerging technologies. Many innovative technologies may lack data to support sufficient savings calculations, but for those promising bids that do not provide adequate data, there is the possibility of being selected for testing to substantiate energy savings claims.
- Program administrators may consider recommending that vendors form teams that combine an experienced energy efficiency program implementer with an inexperienced vendor that features emerging technologies to capitalize on each vendors' specialization, maximizing the pros and minimizing the cons stated above.

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