Technology Resource Incubator Outreach Program

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ABSTRACT

In the 2009-2011 program cycle, the California Investor-Owned Utilities ("IOUs"), Southern California Edison Company ("SCE"), Pacific Gas and Electric Company ("PG&E"), and Southern California Gas Company/San Diego Gas and Electric Company ("Sempra") have proposed a new program component, the Technology Resource Incubation Outreach ("TRIO") program. The TRIO program focuses efforts in two areas: 1) It aims to draw a greater number of innovative technologies into utility energy efficiency programs by providing training workshops for potential program candidates; and 2) It supports the transition from a promising technology, to an investment-worthy energy efficiency opportunity.

Prospective technologies for the TRIO program will be qualified through screening criteria designed to maximize effectiveness of program budgets and energy impacts. The proposed activities represent a movement in the involvement of the utilities to nurture newer technologies into the IOUs' existing energy efficiency rebate programs.

The program attempts to pull more technologies into utility energy efficiency portfolios by providing training and investor-networking workshops, which discuss:

- Working with the utilities;
- Preparing the necessary technical documentation; and
- Investor roundtable discussions.

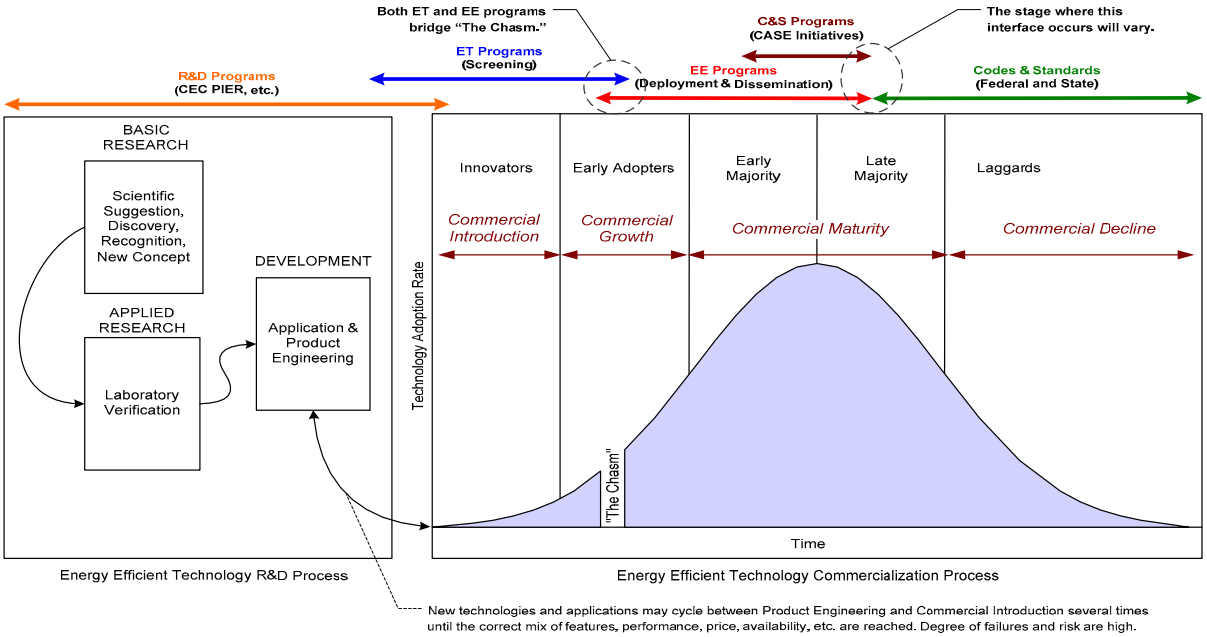
The program also facilitates the drive of promising energy efficient technologies from universities, investor deal flows, and entrepreneur networks, by assisting in networking opportunities and business partnerships to procure funding or other needed resources. Target partners may range from the investment community to corporate entities, to Public Interest

Energy Research ("PIER"), a grant program provided by the California Energy Commission ("CEC"). By educating entrepreneurs and investors on available, cost effective energy efficiency opportunities, the IOUs want to help raise the value of energy efficiency and streamline the technologies evaluated by the utility Emerging Technology ("ET") programs.

Introduction

In the past, technology developers (i.e., universities, investor deal flows, the investment community, Public Interest Energy Research ("PIER"), and other entrepreneur networks) have often failed due to lack of infrastructure, financial capital, social capital, and networking. **Figure 1** displays "the chasm" concept, which demonstrates that during the early adopter/commercial growth stage many technologies fail due to funding and other vital support issues. This chasm reveals a need to understand the support issues that are failing to bring promising new technology to commercialization. The TRIO program will provide the structure and education to nurture new technologies for success in the marketplace.

Figure 1. The Chasm



Source: Henry Lau - Southern California Edison

In order for these technologies to continue to flourish during the Commercial Growth stage, it is necessary that the IOUs begin to nurture and increase implementation of these cost-effective energy-efficient technologies. The TRIO program will provide the efforts necessary for innovative technologies to be shaped and provide the IOUs' Emerging Technologies ("ET") program targeted technologies to assess. TRIO will help move investment decisions to energy efficient solutions.

The goal of the Program is to bridge "the Chasm" and support the commercialization process of new technologies through marketing, education, outreach, networking opportunities, fostering business partnerships, and IOU guidance throughout the energy-efficiency industry. The anticipated result will be the implementation of energy-efficient technologies into IOUs' existing energy efficiency rebate programs. The IOUs will bring social capital as a funding option between entrepreneurs and innovation developers.

TRIO is a statewide program that aims to draw a greater number of technologies into existing energy efficient ("EE") programs. The program will identify new technologies and enhance existing technologies to improve their uptake and use through education and outreach. TRIO will generate new innovative program ideas through outreach and non-traditional methods. The non-traditional methods include energy efficiency workshops and round table meetings.

Meeting the Big Bold Initiatives outlined in the California Long-Term Energy Efficiency Strategic Plan will require a robust pipeline of new and innovative EE technologies. By engaging a range of participants (e.g., the entrepreneurs, incubators, investors, manufacturers, and universities), the IOUs can pull forward new technologies and facilitate paths-to-market.

The research for this program began in November 2007. Upon approval by the California Public Utilities Commission ("CPUC"), the IOUs anticipate a full-scale rollout in the 2009-2011 portfolios.

Ideation

Historically, the outreach to find, fund, and field test new technologies has been through various channels including customer-facing representatives at the IOUs, trade shows, speaking engagements, university partnerships, and industry conferences. The EE divisions of the IOUs are committed to making California's businesses, homes, and appliances more energy efficient.

TRIO's ideation efforts will generate new, targeted innovative program ideas through **enhanced outreach** to investor community deal flows. A deal flow is the stream of offers or opportunities (as a collective whole) that the IOUs will access to find new, innovative energy efficiency technologies. An organization's deal flow is considered "good" if it results in enough revenue- or equity-generating opportunities to keep the organization functioning at peak capacity.

Another outreach effort is to attend university poster board competitions and Clean Tech Open ("CTO") national events to search for more innovative EE technologies, which the IOUs will nurture and educate through workshops.

PIER energy efficiency grant winners may also be involved in the TRIO process and use the program to continue the transition from lab to commercialization. This program supports energy research, development, and demonstration projects that help improve the quality of life in California by bringing environmentally safe, affordable, and reliable energy services and products to the marketplace.

Methodology/Incubation

Many researchers and small entrepreneurs are developing innovations of great promise, but do find it difficult to map the IOUs' internal landscape and understand the technology evaluation criteria. The purpose of the TRIO incubation process is to:

- Engage entrepreneurs, primarily at or affiliated with universities, to identify technologies for screening;
- Advise entrepreneurs to seek verification testing/studies to validate energy savings claims. This verification work will be done as an ET assessment; and
- Assist entrepreneurs in networking and pursuing business partnerships that could possibly lead to a funding agreement with outside investors.

During the incubation process, the IOUs will conduct workshops that provide information on 1) how to work with the IOUs, 2) history of energy efficiency in California, and 3) IOU EE program needs. Through this process the IOUs hope to increase the number of incoming EE technologies. The goal is that these incoming technologies will become part of the statewide EE offerings with the IOUs' assistance in moving these technologies through their internal filters.

Round table discussions will occur during the incubation process that includes investors and utilities. The goal of these meetings is to find energy efficiency technologies inside the investor deal flows.

Innovative technologies from PIER, university competitions, and the CTO will showcase annually to the investment community.

Workshops

In a statewide effort, the IOUs will provide quarterly workshops that address the following areas:

(1) How to work with utilities and participate in utility programs
(2) How to prepare technical documentation related to work papers, the E3 calculator, etc.

These statewide workshops will educate by providing definitions of demand-side management areas including energy efficiency and demand response. The workshops will provide an explanation of how a utility measures and defines a promising technology, an understanding of why the utility is interested in saving electricity, and how to prepare the necessary documentation to participate in utility energy efficiency programs.

TRIO will also provide a high-level overview of IOUs' energy efficiency programs offered in the 2009-2011 program cycle. The belief is that providing utility transparency will promote the development of energy efficient technology. Developing technologies armed with this information have the potential to become integrated with these programs and implemented for kWh/kW savings.

These workshops will include entrepreneurs, manufacturers, university students, PIER winners, and the investor community. The goal is to develop networks of EE players creating the necessary advantage to commercialize new cost-effective energy efficient technologies.

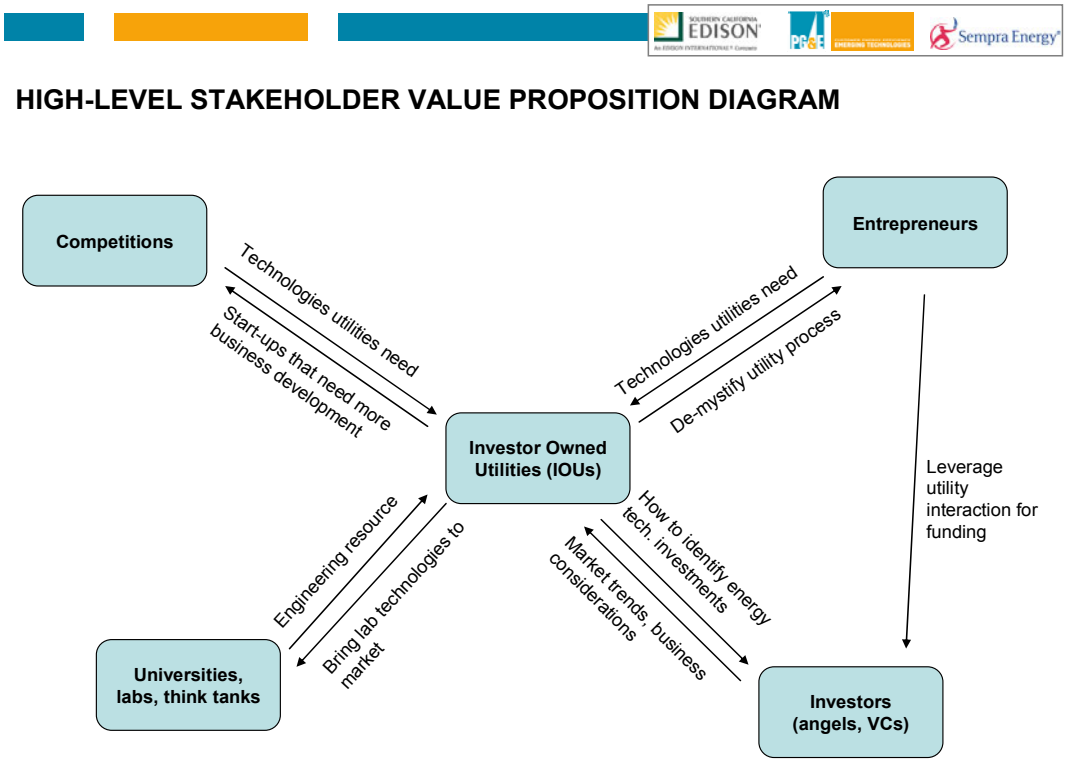
The workshops will provide the skills necessary to engage the utility Emerging Technology Programs or other innovation channels with the necessary technical documentation and work papers in line with utility program evaluation criteria.

During these workshops, the networks developed will accomplish the following:

- De-mystify how utilities do business;
- Educate stakeholders on the utility's definition of energy efficient technology;
- Search for energy efficient technology at national competitions;
- Develop a utility evaluation criteria filter for incubators, think tanks, and investors; and
- Optionally create a hand-off process between PIER winners and IOU EE programs.

Figure 2 represents the high-level value proposition for the TRIO program. The diagram explains the relationships between the various stakeholders (e.g., IOUs, universities, investors, manufacturers, and entrepreneurs).

Figure 2. Value Proposition



Source: Joanne Medvitz, Pacific Gas & Electric

Roundtable Meetings

Statewide quarterly roundtable meetings with investors will include discussion of energy efficient technologies currently hitting their "deal flow." At roundtables, stakeholders will discuss filtered technologies, the energy efficient marketplace, commercialization, and other potential ways the utilities can add value to the process.

Evaluation criteria will be provided to the investor community that explains how to identify an energy efficient technology. This filter will provide a quick assessment whether or not the technology or service is a viable energy efficient measure for the California utilities and within CPUC rules and regulations. This quick assessment may be completed with a preliminary market assessment and other criteria the investor uses to open the door to product development.

The IOUs' contribution to the roundtable meetings will include a review of technical information forms submitted by the entrepreneur directly to the IOUs. In order for a business case to be developed, this form will at a minimum include the following:

1. Description of technology value proposition to a targeted customer base;
2. Proven field testing of technology, including approach and results;
3. Timeline to commercial availability;
4. Estimate of final development cost;
5. Market strategy plans (including national and international market potential);
6. Competitive advantage over similar product offerings (near-term and long-term)
7. Other players in the market;

8. Additional advantages and issues/risks associated with the technology; and
9. Any potential significant changes in the market related to the technology.

Another contribution of the IOUs is the presentation of PIER grant winners for review in the roundtable discussions. This may provide these grant winners a next step in the product development process.

The workshop and roundtable activities are noteworthy as they represent IOU involvement in stages of the technology development process that occur earlier in the product development life cycle compared to traditional IOU involvement.

Implement/Introduce

Upon CPUC approval of the IOUs' 2009-11 program filing, the IOUs may introduce their TRIO internal process differently. Each utility will have a different path for the introduction of new technology. At this time, we are prepared to discuss the implementation plan of SCE.

SCE's Approach

"The strategic injection of the utilities social capital into development of new energy-efficient technologies proposes to raise the value of energy efficiency in the investment chain."
Robyn Zander – SCE TRIO Program Manager

SCE will introduce TRIO technologies through the Innovative Design of Energy Efficient Activities (IDEEA) program and other core programs that may fit the specific technology. The IDEEA program is a third party implemented program that finds, funds, field tests best new energy efficient activities in the nation. The goal of the SCE TRIO commercialization path is to have kWh/kW savings within 18 months from investor funding development to implementation in an SCE program.

The Innovative Design for Energy Efficiency Activities (IDEEA) solicitation process is a comprehensive and multi-faceted approach that draws from the skill, experience, and creativity of the energy efficiency community. The process is designed to help ascertain newer methods or program designs for capturing cost effective electric energy savings (kWh) and peak demand reduction (kW) for both the short and long-term.

This approach is consistent with the California Public Utilities Commission ("CPUC") direction to conduct a competitive bid "for the purpose of soliciting new ideas and proposals for improved portfolio performance." Although these newer program approaches may be unproven in the marketplace, SCE believes these programs are necessary to help sustain cost effective energy efficiency for the longer-term.

As part of SCE's implementation of the TRIO program, entrepreneurs must deliver an IDEEA program abstract to SCE for evaluation in SCE's IDEEA program. This abstract is scored with current statewide criteria and ranked for implementation in the IDEEA program. In the case where the entrepreneur lacks the sufficient funding to implement a program, the high-ranking abstracts will be presented to the investors at the roundtable discussions for potential funding.

The following are examples of the metrics used to measure the programs effectiveness:

- # of products/technologies adopted into SCE IDEEA program and other IOU EE programs
- # of TRIO participants successfully completing ETP evaluation with positive findings and work papers
- Measured level of satisfaction with the usefulness of workshops and roundtables
- # of TRIO participants becoming ready for program consideration
- # of candidates from Universities, think-tanks, PIER screened and accepted into an IOU program

Conclusion

Utilities will outreach to universities, competitions, and investor deal flows to find technologies with potential cost effective energy savings that, once developed and produced, can participate in an IOU solicitation process or current core program.

The basic TRIO steps to commercialization are as follows:

- The workshop will educate the entrepreneur and investor on "how to do business with utilities";
- Provide a networking opportunity between entrepreneur, investor and previous third party implementers;
- The roundtables will discuss the current energy efficient market and potential energy efficient technologies in the investor deal flow; and
- Entrepreneurs can leverage information from the TRIO program to attain outside investor funding.
- Annual showcase of innovative technologies for the investment community

TRIO will provide utility transparency via workshops, roundtables, and innovation forums for university researchers, entrepreneurs, angel investors, and venture capitalists. TRIO will seek to employ non-traditional methods and greater outreach to generate new innovative program ideas and identify newer technologies for capturing cost-effective electric energy savings, with the goal of increasing the energy efficient technology pool for EE programs. The TRIO program will allow an entrepreneur to leverage the IOU interest in the technology to achieve potential funding. "**Other people's money**!"

References

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