



2011 Utility Energy Forum
Asilomar, CA

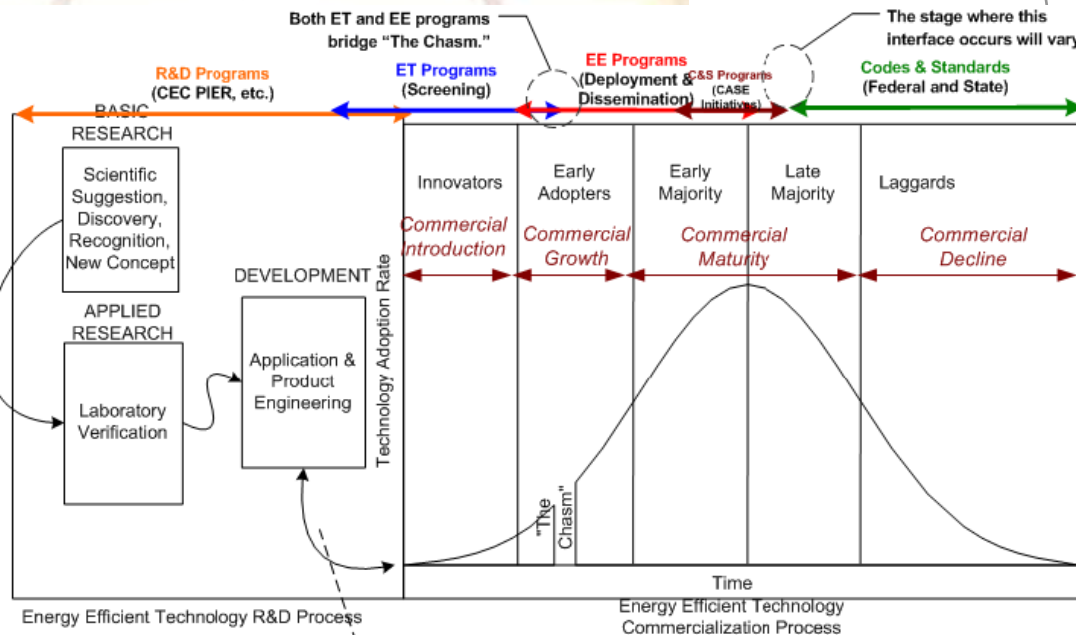
2010-2012 Emerging Technologies Program

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Program Mission

Emerging Technologies Program seeks to accelerate the introduction of commercially available or “near market ready” energy efficient technologies and innovations that are not widely adopted by utility customers in California



New technologies and applications may cycle between Product Engineering and Commercial Introduction several times until the correct mix of features, performance, price, availability, etc. are reached. Degree of failures and risk are high.

Program Objective I

Market Demand

- **Conduct market and behavioral research/studies**
- **Perform technology assessments**
- **Transfer measures to EE programs for adoption**
- **Demonstrate viability of EE measures to increase traction**
- **Increase adoption of EE measures (increased market demand)**

Program Objective II

Technology Supply

- **Share insights through collaborative technology development support efforts**
- **Assist universities, inventors, VCs/investors in understanding the Utility landscape through business incubation (TRIO) program**
- **Utilize technology testing capabilities to support assessment efforts**

Program Objective III

CLTEESP

- **Support of California's Long term Energy Efficiency Strategic Plan's (CLTEESP) Big, Bold Goals and related solutions, including Zero Net energy (ZNE)**
- **Advance innovative measures and/or strategies**
- **SCE Technology Test Centers activities including create ZNE test facility**

Core Program Elements

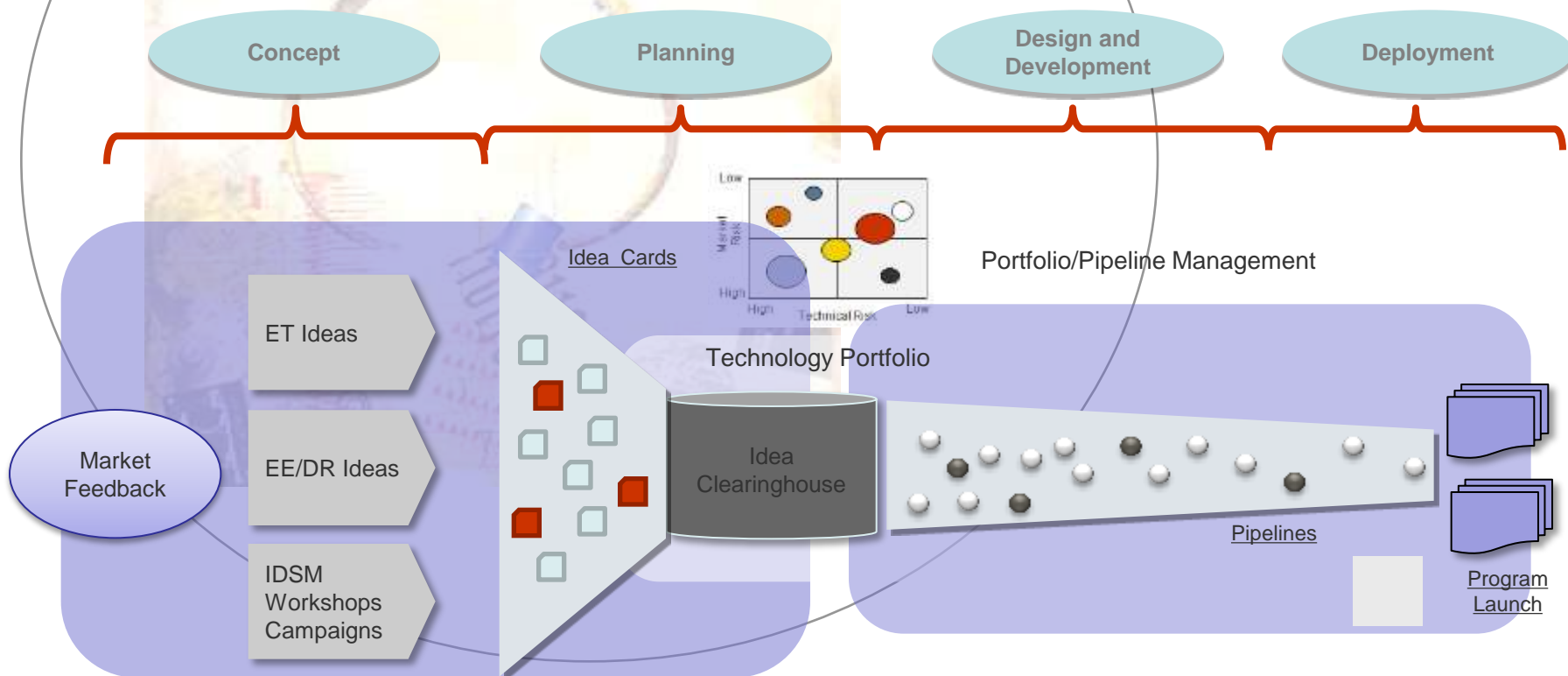
- 1. Technology Assessments**
- 2. Demonstration Showcases**
- 3. Scaled Field Placements**
- 4. Market & Behavioral Studies**
- 5. Technology Development Support**
- 6. Technology Test Centers (incl. ZNE TTC in 2012)**
- 7. Technology Resource Incubation & Outreach**

Technology Assessment

- **Scan/Screen to identify new technologies for all customer segments to reduce energy consumption and demand**
- **Conduct literature search, laboratory evaluations and field studies to assess manufacturer's claims**
- **Analyze and compile findings and forward recommendations for adoption**

Adoption Process

The goal is to ensure a continual flow of quality ideas to replenish the portfolio



Assessment I

Low Pressure Blower

Savings due to replacing high pressure compressed air usage, with VSD motor and low pressure blower. This replacement can be used for parts drying, cleaning and other manufacturing processes.

Results (13HP compressor replaced with 2HP blower):

- Peak demand reduction = 9 kW
- Electricity savings = 52,280 kWh
- Installed project cost = \$20,000
- ~ 3 year payback @\$0.14/kWh



Other Assessments

- **Electronic dimming ballasts with control down to 80% of full output**
 - Ballast can be manually dimmed to respond to DR event or receive auto DR signal via internet.
 - Demonstrates integrated approach (IDSM)
 - Target markets: office space, retail, hospitals, restaurants, etc.
- **LED backlit menu boards and signs (at restaurants, big box retail, airports, strip malls, etc.)**
 - >56,000 of these signs in Southern California with annual Consumption of 50,391, 000 kWh; 9,897 kW (on-peak=45,486 kWh; 7,307 kW)
 - Average demand savings per sign is 164 watts (compared to T-8 fluorescent) and 1,054 kWh savings/year
 - Can be set up for DR events (dimmable)

Demonstration Showcases

- Identify target market sectors based upon pre-defined criteria (e.g. ZNE potential, replicability, program needs, etc.)
- Drive Policy Decisions, adoption of proven integrated ZNE Solution Packages
- Exposure to key decision makers and influencers to improve market traction (allows customers to gain hands-on experience with comprehensive EE solutions)

Demo/Showcase I

ZNE Rec Center at UCSB

- Three three-building complex serves students, staff, and faculty
- ZNE Design Charrette (performance goals, boundary conditions, process, blue-sky thinking)
- Renewable Energy Referendum (PGC fund limitations)
- Future tasks: baseline development, EUI, energy audit, identify EE and renewable measures, M&V plan, communication strategy



Q&A



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