NPD&L

New Product Development & Launch

Product Development Process
NPD&L Key Functions and Responsibilities

Effectively and efficiently deliver new customer products, programs and services, and assess existing solutions that achieve Demand Side Management (DSM) energy savings, improves customer satisfaction, and enhances SCE operational excellence.

Key Functions:

- Product Management
- Solutions Management & Governance
- Applied Innovations
- Solutions Development & Launch

Key Responsibilities:

- Portfolio Governance
- Solution Analysis and Quality Assurance
- Rates & Programs
- R&D Program Management
- Codes and Standards
- Project Management
- Regulatory Compliance and Support
- 3rd Party Solicitation and Evaluation
Scope of Products and Services We Review

SCE reviews and tests new and existing programs, products and services in the following areas:

**Energy Efficiency and Demand Response**
- HVAC and Controls
- Lighting and Controls
- Plug Loads and Electronics
- Agricultural and Process Loads
- Whole Building Systems/ZNE
- Energy Storage

**Pricing and Rates**
- Enhancement to Existing Rates
- New Rate or Rate Closure
- Regulatory Compliance Basic Rates (CARE, FERA)
- Variable Pricing (PTR, CPP, TOU, RTP)
- “Clean” Rates (NEM, Green, PEV)
- Energy Services (OOR, Non-Energy billing)

**Customer Engagement and Energy Management Tools**
- Tools/Analytics
- Billing & Payment
- Bundles (includes pricing, DR, EE)
- Business
- Data Privacy
Programs & Services Lifecycle and Governance
Establishing a Standard Process

**Portfolio Governance Benefits:**
- Enables alignment to strategic goals and objectives
- Creates uniform method and transparency of intake and evaluation
- Informs other departments of upcoming launches and their impacts and prepare appropriately
- Enables gate management through the product development life-cycle
- Allows tracking to goal based launches

**Standard Product Development Life-Cycle:**

<table>
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<tr>
<th>Strategy</th>
<th>Planning</th>
<th>Idea Review</th>
<th>Initiation &amp; Evaluation</th>
<th>Build &amp; Test</th>
<th>Launch &amp; Stabilize</th>
<th>Operations</th>
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<tbody>
<tr>
<td><strong>Gate 0</strong></td>
<td>Ensure products are aligned with regulatory strategy and plans and/or corporate initiatives.</td>
<td><strong>Gate 1</strong></td>
<td>Vetting process to reduce volume of ideas to those with highest potential and technical feasibility.</td>
<td><strong>Gate 2</strong></td>
<td>Ensure proof of concept, cost effectiveness, and readiness for development.</td>
<td><strong>Gate 3</strong></td>
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- The standard product development life-cycle provides classic stage gate process driven by statistical data and clear strategic value.
- Functional Integration - Strategically focused product development lifecycle requires broad view and integration with a large number of internal and enterprise functions including Product Management, Technology Management, Policy Management, Project Management, Change Management, Marketing & Communications, etc. This ensures alignment moving away from silo’ed initiatives.
Governance Includes All Levels of SCE Management

Note: Alignment with CS Business Planning, Program Management & Planning, in progress
NPD&L 2014 Intake Process Summary

2014 Total Intake: 292
- Existing Projects (2013 & Prior): 39
- New Submissions (2014): 253

Gate Activity 2014

Gate 0 Reviews: 207
- Accepted: 73% (151)
- Rejected: 27% (56)
- Idea/Intake Form
- Prelim. Cost/Benefit
- Estimated Budget & Funding

Gate 1 Reviews: 157
- Accepted: 84% (132)
- Rejected: 16% (25)
- Test Results
- Charter
- Business Case
- IT approval (SCE)
- Revised Budget & Resources
- ScoreCard (SCE)

Gate 2 Reviews: 80
- Accepted: 94% (75)
- Rejected: 6% (5)
- Pilot/Test Results
- Solution Codes
- Workpaper
- Policy/Procedure Documentation
- Project/Launch Plan

Gate 3 Reviews: 49
- Accepted: 98% (48)
- Rejected: 2% (1)
- Launch Report (SCE)
- Stabilization Criteria (SCE)

Gate 4 Reviews: 18
- Accepted: 100% (16)
- Rejected: 0
- Operation Report (SCE)
- Handoff Criteria (SCE)

Total Projects Approved: 52%
Total Projects Rejected: 30%

2014 Totals: 52% Approved, 30% Rejected, 17% Pending, 1% Completed/Closed
From Idea to Launch

Intake Process overview for new customer programs, products, and services.
Working with Industry Partners

Have an idea to help us save energy, reduce demand, or improve operations?

Let us know!

visit on.sce.com/ideas to share your idea
NPD&L Demand Response (DR) Activities
Reaching the Customer

- SCE must be able to create plans and programs utilizing both the “utility” and “3rd Party” pathways to reach customers. This will ensure customers have the ability to choose the tool or solution that meets their needs.
- Leveraging both pathways provides SCE with additional functionality that can enhance energy reliability, reduce the time required for DR events, and can help improve power quality for the consumer.

Diagram:
- Utility Path (one way) from Edison SmartConnect Meter to Proprietary Protocol to Customer Router or Device.
- IoT Path (two way) from Customer Router or Device to 3rd Party Cloud to Open Protocol.
- ZigBee / SEP Interface is also connected to Open Protocol.
Architecture

SCE DRAS Server

3rd Party Server

WWW

OpenADR 2.0 (To/From SCE)

Calls DR Event

IOU

Controls

HVAC System

Thermostats

Wi-Fi Router

Home Automation Gateway

Controls

HVAC System

Proprietary internet (To/From server to thermostats/gateway)
Mass Market: Third Party Load Control

- **Objective**
  - 2014: Evaluate residential load reduction, leveraging cloud service connection with Smart Thermostats
  - Increase cost effectiveness of existing programs such as SCE’s Save Power Day
  - Reduce load per SONGS Demand Response (DR) mitigation (CPUC A.12-12-017)
  - Enable 3rd parties to evaluate potential of residential DR aggregation market

- **Business Drivers**
  - Utilize existing customer base to eliminate equipment & installation costs
  - SCE leverages its existing commercial OpenADR event notification process
  - Leverage SmartConnect meters to enable pay-for-performance incentive

- **Costs**
  - Customer: $100-$249 for Smart Thermostat with connected cloud service
  - 3rd Party performs all marketing for a nominal $20 management fee per customer
  - Customers receive $1.25 per kWh reduced during DR events
  - Estimated SCE cost < $80/kW and a Total Resource Cost ratio of over 1.5*

- **Benefits**
  - Provide up to 0.75kW peak shaving per customer using current rate structure
  - Each dollar invested could return 2-3 times kWh reduced vs. similar driven programs
  - Over 10% take rate after a single touch point
  - Supports SCE’s stated goal to promote open standards (i.e. OpenADR)
  - Additional cost effectiveness identified through modification of current tariff

* 0.9 TRC or greater is typically required – this anticipated rating is the highest of all SCE’s residential DR programs
Opportunities: Large / Commercial Customers

Looking at New Ways to Provide Savings (C&I). Energy efficiency and savings potential is expanding beyond the traditional areas of opportunity.

- **Energy Management**
  - EMS & HVAC
  - Retrofits
  - Lighting
  - Zero-net Energy
  - Building Efficiency

- **Transportation Electrification**
  - Work Place Charging
  - Vehicle to Grid – Demand Response & Energy Storage

- **Data & Analytics**
  - First Fuel
  - Enhanced Energy Advisory and Audit Tools

- **Quality & Reliability**
  - Renewable Energy
  - Energy Storage
  - Power Quality

New technologies have created new opportunities
Small Commercial Study

Why Small Commercial?

• Historically underserved market
  ▪ No assigned account managers
  ▪ Programs focused on large C&I and Residential

• Defaulted to Time of Use (TOU) rates last year

• Moving to Critical Peak Pricing (CPP) in 2017

• More than 400,000 small business customers in SCE territory

• Large concentration in SONGS mitigation area
Small Commercial Study

Objectives:
• Identify low cost, easy to understand solutions
• Demonstrate viability of cloud based solutions
• Determine existing technology that may be leveraged
• Test DR parameters (response time, event duration, locational dispatch, etc.) to define a future cost effective program that balances grid needs with customer impact
• Utilize OpenADR 2.0b
Questions?
New Program Development & Launch