Putting Customers at the Center of the Energy Transition

Project Summary Presentation
October 20, 2021

Mark Martinez, SCE
Min Long, EPRI
mlong@epri.com
Ram Narayanamurthy, EPRI
rnarayanamurthy@epri.com
Tanya Barham, Community Energy Labs
tanyab@communityenergylabs.com

Following
Ameren
Con Edison
FortisBC
Xcel Energy
Customer Relationship to a Changing Grid

The lines between customer and utility are blurring.

How do we take advantage of end-use technologies in a way that is easy and minimally disruptive to customers?
Merging the Physical & Psychological TARIFF 2 LOAD SHAPE 1

HUMAN CENTERED DESIGN

- Stated Preferences
- Choice Paths
- Survey
- Physical Devices
- Demographic Data

What’s the most important benefit for you?
- My Health
- Max Comfort
- Save Money
- Save Time

FLEX PROFILE 1
Project Scope at-a-Glance: Customer Centric Workshops

Demonstrate how personas + DR/DERs can be integrated into SCE’s emerging client facing programs for demand flexibility.

**Milestones**
- Install & Document CEL;
- Design customer surveys;
- Perform outreach & observations;
- A/B test user interfaces with different personas;
- Videos & Visios for how personas fit SCE’s emerging DR/DF/GEB programs;
- Final report.
Listening to Customer Needs & Perspectives 😊
Deep Dives 🐳 With Customers

6—How can you reduce the cost of energy in a typical day?

- Charge Electric Buses at low cost times
- Partner with the MISO staff
- Improve HVAC efficiency
- Energy Audit
- Better insights into energy usage, schedules, usage, activities
- Customized energy savings opportunities
- Energy costs over threshold come out of principal’s budget
Linking Tariffs 🌍, Tech 🤖 & Customer Goals ✌️

HINT: SMART CONTROLS ARE IMPORTANT!

DEMAND CHARGES

- Charge Ready Schools
- Summer Discount
- Emergency Load Reduction Program (ELRP)
Co-Creating Solutions Alongside Customers

TIME-BASED COSTS

PEAK COST

ENERGY

MORNING

EVENING

COSTS

SCORE BOARD

CREATE YOUR SOLUTION

SEARCH FOR POTENTIAL SOLUTIONS

DRAG YOUR SOLUTIONS HERE

- Upgrade electrical control panel
- Standard Energy Audit recommendation for E3 SuCoRiN
- M2M and IoT programs for 2021
- Use for boxes
- Outdoor Lighting controls
- Automated thermostatic control adjustment
- SMS Controlled appliances
- SMS Controlled schedules
- Save time
- Save money
Market Transformation (aka Having Fun)

If your HVAC were a generation which one would it be? 🎉🎉

<table>
<thead>
<tr>
<th>GENERATION</th>
<th>BORN YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Greatest Generation</td>
<td>1901–1924</td>
</tr>
<tr>
<td>The Silent Generation (Aka: Traditionalists)</td>
<td>1925–1945</td>
</tr>
<tr>
<td>Baby Boomers</td>
<td>1946–1964</td>
</tr>
<tr>
<td>Generation X</td>
<td>1965–1979</td>
</tr>
<tr>
<td>Millennials (Generation Y)</td>
<td>1980–1995</td>
</tr>
<tr>
<td>Generation Z</td>
<td>1996–2009</td>
</tr>
<tr>
<td>Generation Alpha</td>
<td>2010–2025</td>
</tr>
</tbody>
</table>
Tech That Bridges Utility + Customer 🖤

What's the most important benefit for you?

- My health
- Max comfort
- Save money
- Save time
- Save the planet

Here's the deal for 10/19/2021
Let’s Move Forward Together 🚀

**Phase 2**

Commercial installation to test CEL controls with dynamic signals, TOU prices. Quantify customer value.

**Phase 3**

Pilot emerging tariff, programs & turnkey offerings with rates & CEL’s smart controls.
Customer Engagement is Critical to Your ✨ Future ✨

Contact Ram Narayanamurthy & Tanya Barham to engage in the Phase 2 & 3 supplemental projects. We will look at ways CEL’s tech can enable your customers to participate in emerging time varying rates, decarbonization and demand response programs without impacting occupant happiness. 😊
Our Team

Utility Representative 🌪️
Mark Martinez, Senior Portfolio Manager, Emerging Markets and Technology Program

Startup Representative 🚀🚀
Tanya Barham, Community Energy Labs

EPRI Representative 🏕️
Min Long, Engineer, Customer Insights
Ram Narayanamurthy, Program Manager, Advanced Buildings

Cat Herders 🐱‍🐱
Anne Haas & Christina Lawson, EPRI IEL Managers