## SCE 2022 PSPS PUBLIC BRIEFING

### AGENDA

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Readiness Overview

Shinjini Menon
Vice President
Asset Management & Wildfire Safety
2022 BY THE NUMBERS

READY TO GO

3,500+ miles of covered conductor installed to date

≥69% targeted reduction in PSPS scope on 50+ circuits

60% of eligible customers received a free battery through the Critical Care Backup Battery Program

100+ virtual and in-person meetings to solicit feedback and provide information

All 346 PSPS IMT members have been trained and participated in readiness exercises

More than 700 Public Safety Partners registered on Portal

All customers sent a PSPS seasonal newsletter

Customer notification automation launched
8 CCVs, pop-up CRCs and 67 contracted CRCs available to quickly respond to community needs

Enhanced PSPS notifications planned for implementation later this year

Conducted 4 functional, operations-based exercises from May 16-19 – Public Safety Partners participated on May 18-19 as players and observers

Conducted ~80 informational PSPS briefings with local governments and tribes in High Fire Risk Areas

Provide detailed data on preparedness metrics for upcoming PSPS season
Grid Hardening

Shinjini Menon
Vice President
Asset Management & Wildfire Safety
GRID HARDENING METRICS AND PROGRESS
ADDITIONAL SYSTEM HARDENING TARGETS OUR MOST IMPACTED CUSTOMERS

2022 GRID HARDENING METRICS

<table>
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<th>Outage Reduction Goals (%)</th>
<th>Mitigation</th>
<th>Current Scope (planned for 2022)</th>
<th>YTD Completed (as of 6/30/22)</th>
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<tr>
<td>14% reduction in <strong>frequency</strong> for PSPS-impacted circuits</td>
<td>Covered Conductor</td>
<td>150+ miles</td>
<td>114 miles</td>
</tr>
<tr>
<td>≥39% incremental reduction in <strong>frequency</strong> on 50+ targeted circuits</td>
<td>Underground Scope</td>
<td>3 miles</td>
<td>0 miles</td>
</tr>
<tr>
<td>17% reduction in customer minutes of interruption (<strong>CMI</strong>) for PSPS-impacted circuits</td>
<td>Automated Switches</td>
<td>8 switches</td>
<td>2 switches</td>
</tr>
<tr>
<td>≥60% incremental reduction in <strong>CMI</strong> on 50+ targeted circuits</td>
<td>Weather Stations</td>
<td>19 devices</td>
<td>15 devices</td>
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</table>

EXPEDITED GRID HARDENING ON 50+ CIRCUITS IMPACTED BY PSPS

- **Outage Reduction Goals (%)**
  - 14% reduction in **frequency** for PSPS-impacted circuits
  - ≥39% incremental reduction in **frequency** on 50+ targeted circuits
- **Outage Duration**
  - 17% reduction in customer minutes of interruption (**CMI**) for PSPS-impacted circuits
  - ≥60% incremental reduction in **CMI** on 50+ targeted circuits
- **PSPS Scope Reduction**
  - Removing an additional 8,165 customers from PSPS consideration in 2022 through **circuit exceptions** process
  - Reviewing 24,000 additional customers
  - 25% reduction in **customers impacted** by PSPS
  - ≥69% incremental reduction in **customers impacted** on 50+ targeted circuits

MICROGRIDS

- **Behind the Meter** microgrids pilots:
  - #1 completed in 2020,
  - #2 to be completed in 2022

TEMPORARY GENERATION

- Planning 2 500kW generators on Dartmouth circuit serving Hemet and San Jacinto
- Successful preliminary field test of Mobile Battery Energy Storage System for Energy circuit serving Chatsworth, Santa Susana and Simi Valley in June 2022

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1 In 2022, SCE is targeting over 50 circuits for grid hardening based on PSPS impacts.
2 The 8,165 exempt customers includes 2,250 customers exempted due to switching protocol updates; exceptions to be reviewed annually.
Operational Update

Tom Brady
Principal Manager
PSPS Readiness Lead
500 new machine learning models help us better understand actual weather behavior at a weather station by referring to past real-weather observations and using them to adjust forecasts. These more accurate forecasts improve our ability to predict PSPS conditions ahead of time.

Machine learning aligns better with what actually happened than standard model output.
Initial automation is performing well and will continue to be refined based on ongoing testing and lessons learned from activations. All PSPS IMT members have undergone rigorous training and multiple readiness exercises on the new system.
Communication with Agencies and Partners

Tom Brady
Principal Manager
PSPS Readiness Lead
Building on feedback to better communicate, coordinate and share information

10 Community Meetings

13 PowerTalk Meetings

9 County Emergency Management Meetings

11 Critical Infrastructure Provider Workshops

8 PSPS Working Group and Advisory Board Meetings

Engaging with all local and tribal governments in HFRAs
- Provided PSPS Resiliency Guides to all tribal and local governments in HFRA
- Soliciting input on areas including CRC/CCV locations, AFN engagement, notification protocols and community safety
- Increasing in-person education and outreach on PSPS Readiness, Medical Baseline program, income-qualified programs, and offerings for batteries and generator rebates
- Engaging partners through tours of our Emergency Operations Center (EOC) and meetings on our PSPS protocols

2021 Survey of Local Governments in High Fire Risk Areas

94% Familiar with or heard of SCE’s work to reduce wildfire risk
98% Familiar with or heard of SCE’s PSPS Program
63% Support SCE’s PSPS Program
IN-EVENT BRIEFINGS

3 daily briefing calls - have streamlined and automated data to improve consistency and timeliness
- Statewide Executive Briefing
- County Coordination
- Critical Infrastructure

REPORTING: DATA COLLECTION AND MANAGEMENT IMPROVEMENTS

- Increased accuracy and efficiency of PSPS Post-Event Reporting process through automation
- Developed data definitions, reporting methodologies and supporting business logic to automate PSPS post-event reporting tables based on SED’s final post-event reporting template
- Worked with consultant to validate post-event data definitions and associated methodologies
PUBLIC SAFETY PARTNER PORTAL
INFORMING PARTNERS AND CRITICAL INFRASTRUCTURE CUSTOMERS

750+ registered users
• Host bi-weekly office hours to troubleshoot user issues and solicit feedback

Additional functionality in 2022
• ZIP code to circuit mapping
• Direct access to past PSPS event data
• Consolidated GIS information layer
CRITICAL FACILITIES/TELECOM
STRENGTHENING PARTNERSHIPS WITH COMMUNICATION SERVICE PROVIDERS

Working directly with communication service providers*: 
- Assisting providers in assessing their backup power needs by identifying circuits and equipment locations that are at risk for PSPS
- Providing one-on-one Public Safety Partner Portal trainings
- Engaging providers in PSPS and All-Hazard exercises

*AT&T, Verizon, T-Mobile, Charter, Frontier, Cox Communications
Communication with Customers and the Public

Sandra Labib
Senior Advisor
Outage Communications
NOTIFICATION IMPROVEMENTS
LISTENING AND FOCUSING ON THE CUSTOMER EXPERIENCE

Listening to our customers first
• Conducted 2 large PSPS-related surveys: PSPS Tracker and PSPS Notifications
• Other completed 2022 PSPS-related surveys include In-Language Wildfire Mitigation, Communications Effectiveness Pre/Post Surveys and PSPS Voice of Customer

New email channel available for address-level (non-customer) alerts

Improved communication of estimated restoration ranges
NEW FEATURES IN 2022

- Improved mobile user experience
- More dynamic outage information
- Search by Meter Number or Outage Number

New interactive weather and fire map including real-time weather station information and location of active fires (Q4 2022)
REACHING PARTNERS AND CUSTOMERS
TAILORING OUR OUTREACH TO ENGAGE OUR DIVERSE COMMUNITY

MEDIA

- Using paid and earned media to reach customers through digital and traditional channels
- Increasing community-based engagement to amplify coverage and increase engagement opportunities

Contacted 100 journalists and 80 outlets

DIRECT MAIL

- PSPS preparedness newsletter mailed to all 5 million SCE customers in 2022
- Separate version for HFRA and non-HFRA customers

67% of surveyed customers say that SCE takes proactive measures to protect communities from wildfires

COMMUNITY MEETINGS

10 community meetings in 2022 for PSPS-impacted counties and individuals with AFN

68% of participants felt better informed about PSPS and wildfires

ADVERTISING

- Reaching wider audience through research-based channel mix
- All PSPS advertising is meeting or exceeding recall goals
AFN and MBL
Customer Outreach

Dani Anderson
Senior Manager
PSPS Customer Experience

Katie Sloan
Vice President
Customer Programs & Services
ACCESS AND FUNCTIONAL NEEDS
INCREASING RELATIONSHIPS, PROGRAMS, SERVICES AND AVAILABILITY TO OUR AFN POPULATION

EXPANDING PARTNERSHIPS TO BETTER SUPPORT CUSTOMERS
- Providing food support
- Keeping paratransit agencies and health care partners informed

STRENGTHENING CBO COORDINATION
Amplifying SCE CBO coverage by ~40% - 60%

SUPPORTING COMMUNITIES WITH INDIVIDUALIZED EMERGENCY PLANNING
- Care Coordination in partnership with 211 launched in March 2022
- 2,567 Care Coordination contacts completed to date

EVALUATING CUSTOMER EXPERIENCE
- Data and customer experience are the basis for programs and expansion
- **New**: AFN Self-ID pilot and customer surveys
- AFN Heat Map

INCREASING ACCESSIBILITY OF PSPS COMMUNICATIONS
- Will be offered this year in American Sign Language accompanied by English voice-over and accessible text
Outreach to **100k customers/month** in MBL email campaign

Ran **40 newspaper ads** targeting seniors and diverse communities

Ran digital ads in **6 languages**

Issued **63 $500 generator rebates** to MBL customers

**Recent Outreach Efforts:**

- **Ongoing through December:** Running digital MBL ads in English, Spanish, Chinese, Korean, Tagalog and Vietnamese
- **July 13:** Sent mailing to nearly 117k enrolled MBL customers to provide resources and emergency preparedness tips for PSPS and request updated customer contact information on SCE.com
- **Mid-August:** Launching automated ongoing campaign to increase MBL enrollment

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**2022 Digital Advertising**

If you **rely on medical equipment** in your home, we can help you reduce your energy costs. Find out if you qualify.
Since launching Critical Care Backup Battery (CCBB) program in July 2020, have contacted **100% of eligible customers** and provided over **7,500 free portable backup batteries**, representing deployment to **more than half** the eligible population

- Newly eligible customers contacted monthly
- Increasing enrollment through:
  - “Doorbell rings” for hard-to-contact customers
  - Amplifying education and outreach through Community-based Organizations (CBOs)
- Using customer effectiveness surveys and benchmarking on best practices with other utilities to inform marketing approach

**2022 Participation:**

- Enrolled **1,063** customers and deployed **1,015** batteries
- Continuing outreach to all eligible customers, including repeated attempts when customers do not respond
- 2022 newly eligible customer population is shrinking: 460/month in 2021 vs. 245/month in 2022
Customer Support

Katie Sloan
Vice President
Customer Programs & Services
SAFETY FAIRS
Fairs in HFRA communities of Malibu, Santa Clarita and the tribal communities of Morongo, Soboba, and Pechanga helped 800+ customers in to be more prepared

ENHANCED ACCESS & FUNCTIONAL NEEDS (AFN) SUPPORT
• Device charging Leave-behind Pilot
• Offering reusable thermal insulated bags for medication
• Providing privacy screens
• Offering water bowls and snacks for service animals
• Continuing to offer on-site translation service for 120+ languages including American Sign Language

2021 CRC CUSTOMER FEEDBACK
• 8.3 customer rating on 1-10 scale
• Visitors have generally been satisfied with the service they have received
• Grievances are typically related to inconveniences resulting from de-energizations (rather than services)
Recent PSPS Events

Shinjini Menon
Vice President
Asset Management & Wildfire Safety
2022 PSPS EVENTS SUMMARY
EVENTS 1 & 2

JUNE 2022

JULY 2022
Fast Curve Settings

**Shinjini Menon**
Vice President
Asset Management & Wildfire Safety
Utilities use protection settings on circuits to reduce damaging impacts caused by excessive current and fault energy during a fault condition, such as a tree branch falling on the line or a downed wire.

Since 2018, we have been using faster and more sensitive protection settings ("fast curve settings") in HFRAs as part of a suite of ignition risk mitigation measures.

We initially selected moderate fast curve settings to balance wildfire risks and reliability concerns. We are evaluating risk reduction and impacts to refine and adjust these settings. We are also deploying fast curve setting capability on additional circuits in HFRAs.

**PROTECTION SETTINGS ANALOGY**

<table>
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<tr>
<th>Without protection settings</th>
<th>With protection settings</th>
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Protection settings, including fast curve settings, are similar to ground fault circuit interrupters (GFCI) in high-risk areas like kitchens and bathrooms.

**FAST CURVE-RELATED OUTAGES VS PUBLIC SAFETY POWER SHUTOFFS**

<table>
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<tr>
<th>Activation Criteria</th>
<th>FAST CURVE SETTINGS-RELATED OUTAGE</th>
<th>PUBLIC POWER SAFETY SHUTOFF (PSPS)</th>
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<tr>
<td>Red Flag Warning¹, Fire Weather Threat, Fire Climate Zone Threat (typically peak wildfire season in certain zones), Thunderstorm Threat (dry lightning)</td>
<td>Fire Potential Index and windspeed thresholds are exceeded</td>
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<table>
<thead>
<tr>
<th>Outage Criteria</th>
<th>Outage Duration</th>
<th>Customer Notifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unplanned outage; occurs after a fault is detected</td>
<td>Dependent on patrols and required repairs</td>
<td>Standard unplanned outage notifications; updates also on sce.com/outagemap</td>
</tr>
<tr>
<td>Planned, proactive de-energization to prevent faults from occurring as a tool of last resort</td>
<td>Dependent on period of concern, patrols and required repairs</td>
<td>PSPS alerts prior, during and after de-energization and restoration; updates also on sce.com/outagemap</td>
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</tbody>
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1. Red Flag Warnings are declared by National Weather Services. Fire Weather. Fire Climate Zone and Thunderstorm Threats are declared by SCE Weather Services.
2. Seasonal approach based on zone-specific historical occurrence of fuel-driven fires.
## FAST CURVE SETTINGS IN USE SINCE 2018

ALL OUTAGES ON CIRCUITS WITH FAST CURVE SETTINGS

<table>
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<tr>
<th>CIRCUITS WITH FAST CURVE CAPABILITY¹</th>
<th>CIRCUIT MILES WITH FAST CURVE CAPABILITY²</th>
<th>FAST CURVE SETTINGS ENABLED</th>
<th>OUTAGE IMPACTS FOR ALL CIRCUITS WITH FAST CURVE⁴</th>
<th># OF OUTAGES ON CIRCUITS WITH FAST CURVE SETTINGS (2022)⁴</th>
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<tbody>
<tr>
<td>~900 circuits¹</td>
<td>~8,000 miles</td>
<td>2021 June 1 – Oct. 25</td>
<td><strong>Pre fast curve: (2016-2017)</strong></td>
<td><strong>Out of ~900 circuits:</strong></td>
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<td>2022 May 14 – Dec.</td>
<td>Average outages per year: 1,464</td>
<td>196: 1 outage (all types)</td>
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<tr>
<td>(for certain Fire Climate Zones³)</td>
<td></td>
<td></td>
<td>Average Duration: 8.2 hours</td>
<td>104: 2 outages (all types)</td>
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<td></td>
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<td>Average # of Customers: 590</td>
<td>66: 3+ outages (all types)</td>
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<td><strong>2021 (June-October)</strong></td>
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<td></td>
<td>All outages (including fast curve): 1,642</td>
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<td></td>
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<td></td>
<td>Average Duration: 7.2 hours</td>
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<td></td>
<td>Average # of Customers: 578</td>
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<td><strong>2022 (May 14 to date)</strong></td>
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<td></td>
<td>All outages (including fast curve): 685</td>
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<td></td>
<td>Average Duration: 8.7 hours</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Average # of Customers: 685</td>
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1. About 85% of ~1,070 circuits in High Fire Risk Areas have reclosers or circuit breakers with fast curve capability. We plan to deploy fast curve capability to nearly all circuits in HFRAs by the end of 2023.

2. Primary overhead HFRA circuit miles.

3. Seasonal approach based on zone-specific historical occurrence of fuel-driven fires.

4. Includes all unplanned outages, including fuse-caused and transformer interruptions. Excludes PSPS and maintenance outages.
In Summary

Lisa Cagnolatti
Senior Vice President
Customer Service
## 2022 PSPS READINESS

### SUMMARY

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<th>Category</th>
<th>Description</th>
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<td><strong>GRID HARDENING</strong></td>
<td>• Targeting additional system hardening in the areas most affected by PSPS</td>
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| **OPERATIONS**                                | • Increasing use of machine learning and automation to enhance forecasting  
  • Improving speed and accuracy of notifications through automation                                                                          |
| **COMMUNICATION**                             | • Providing more dynamic ranges of estimated restoration times                                                                               |
| **CUSTOMER SUPPORT**                          | • Tailoring education and outreach to include diverse communities  
  • Amplifying outreach through CBOs to provide programs & services to those with Access & Functional Needs  
  • Expanding offerings of resources and tools to support customers through PSPS events                                                          |
| **WORKING WITH AGENCY PARTNERS**              | • Coordinating with agencies, local & tribal governments to ensure transparency in decision-making and preparedness for PSPS  
  • Providing real-time information through Public Safety Partners Portal                                                                       |

**USE PSPS ONLY WHEN NECESSARY TO PROTECT PUBLIC SAFETY UNDER SIGNIFICANT FIRE-RISK WEATHER CONDITIONS**

USE PSPS ONLY WHEN NECESSARY TO PROTECT PUBLIC SAFETY UNDER SIGNIFICANT FIRE-RISK WEATHER CONDITIONS

USE PSPS ONLY WHEN NECESSARY TO PROTECT PUBLIC SAFETY UNDER SIGNIFICANT FIRE-RISK WEATHER CONDITIONS