

PG&E Track 1 Proposal in Rulemaking 19-09-009

January 27, 2020



Together, Building
a Better California



Overall PSPS Minimization Strategies

Approach to Reduce Need for PSPS:

REDUCE FIRE IGNITIONS	REDUCE FIRE SPREAD
<ul style="list-style-type: none">• Enhanced Vegetation Management• System Hardening• Reclosers and SCADA• Wildfire Safety Inspection Program• Public Safety Power Shutoff	<ul style="list-style-type: none">• Wildfire Safety Operations Center• Weather Stations• Cameras

Approach to Reduce PSPS Customer Impacts:

REDUCE NUMBER OF IMPACTED CUSTOMERS	REDUCE DURATION	REDUCE FREQUENCY
<ul style="list-style-type: none">• Distribution Segmentation• Transmission Line Switching• Distributed Generation Enabled Microgrid Services• Temporary Generation• Community Microgrid Enablement Program	<ul style="list-style-type: none">• Restoration Time	<ul style="list-style-type: none">• Meteorology Guidance• Transmission Line Exclusion



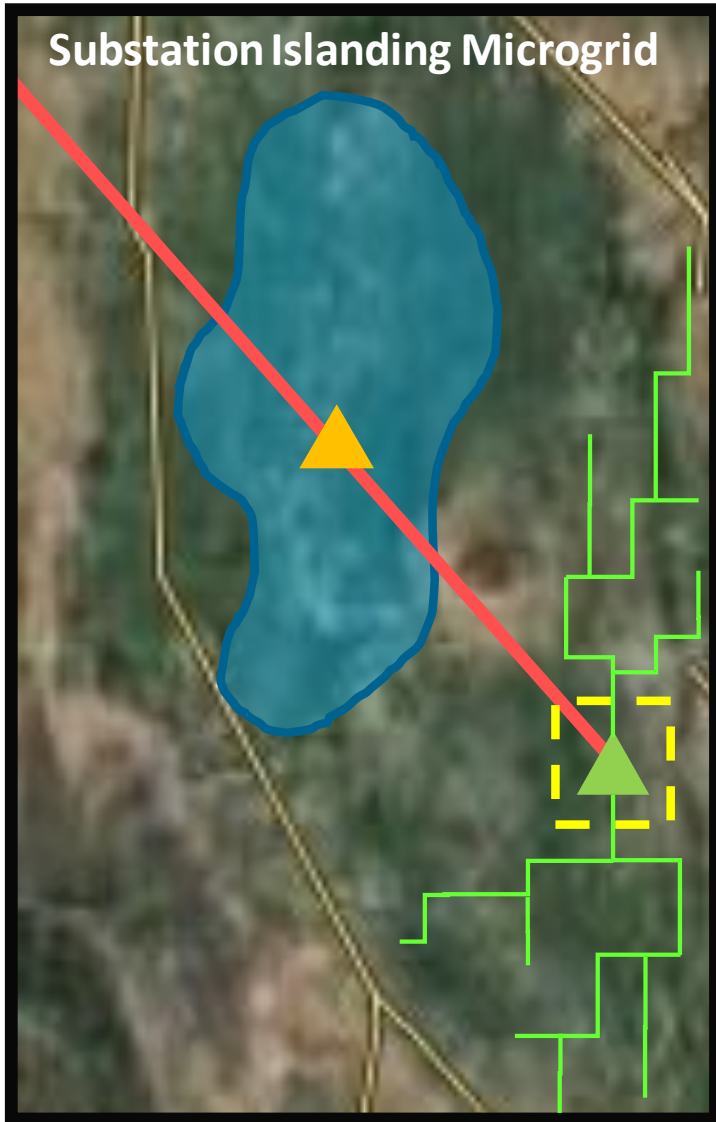
Summary of Proposal

Overview:

On January 21, PG&E filed a proposal in Track 1 of the Microgrids and Resilience Strategies OIR seeking approval for the following three programs, so that, starting for the 2020 fire season, PG&E can:

1. Prepare substations to accept the DGEM and provide power safely (Make-Ready Program)
2. Energize microgrids and/or single-customer critical facilities with temporary mobile generators (Temporary Generation Program)
3. Partner with local communities to identify and build multi-customer microgrids serving critical facilities (Community Microgrid Enablement Program)

2020-2023 ELECTRIC DISTRIBUTION REVENUE REQUIREMENT FORECAST (THOUSANDS OF DOLLARS)						
Line No.	Description	2020	2021	2022	2023	Total
1	Make-Ready Program	\$8,590	\$17,709	\$17,965	\$17,427	\$61,691
2	Temporary Generation Program	\$175,262	-	-	-	\$175,262
3	Community Microgrid Enablement Program	\$3,516	\$5,952	\$9,926	\$8,109	\$27,503
4	Total	\$187,368	\$23,661	\$27,891	\$25,536	\$264,456



Problem Statement: Transmission lines that are de-energized for being within a high fire weather footprint may serve distribution load that is outside of the event.

Solution: Place generation / energy storage resources at or near substations to create an island-able configuration that enables energy resiliency in absence of transmission source

Impact: Potential to energize 1,000s to 10,000s of customers per islanded substation

Key Operations Requirements:

- 24 hour / multiple consecutive day operations
- load following / black start / cold load pickup
- located within “safe to energize” areas

Methodology:

- total customer meter impacts from 10/9 or 10/26
- multiple transmission de-energizations in 2019



High fire weather footprint



Substation within wind and PSPS footprint



De-energized transmission line



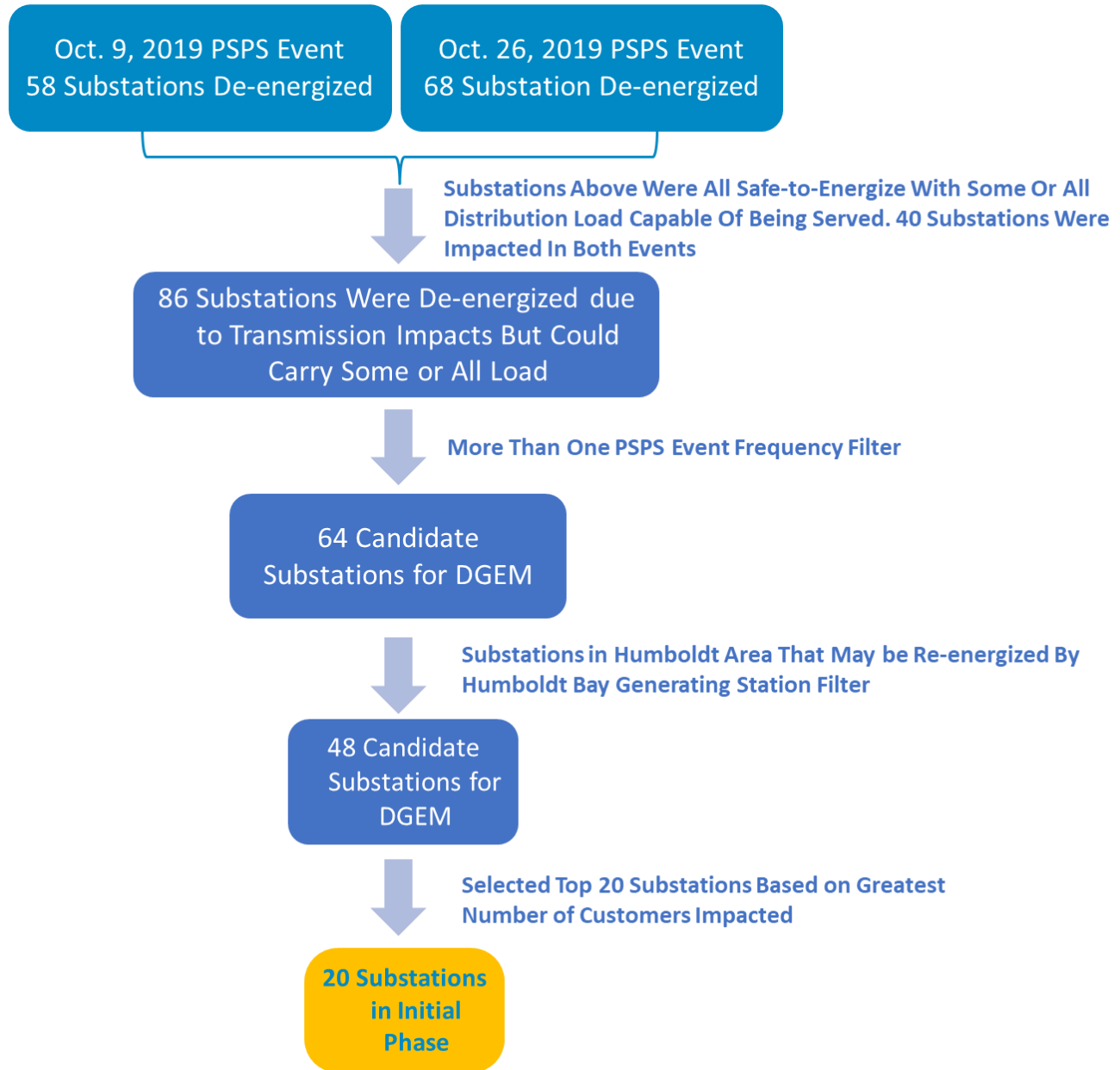
Substation indirectly impacted by t-line de-energization



Safe to energize area distribution lines



Selection of Candidate DGEMS' Projects





Make-Ready Program

Purpose:

The Make-Ready Program enables safe to energize substations to island and accept onsite or adjacent generation in order to create a substation-based microgrid due to transmission line loss or broader grid outages.

Type of Work:

In order to interconnect permanent DG or temporary resources, PG&E will need to install:

1. Ground grids;
2. Circuit breakers or line reclosers with sync scope capabilities;
3. Fuse disconnect switchgear;
4. Substation bus infrastructure; and
5. Miscellaneous Infrastructure.

Proposing to only recover actual costs incurred (2-way balancing account)

Schedule:

- PG&E proposed to complete up to 20 substations prior to the 2020 fire season.
- If substations cannot be completed by 2020, PG&E will continue to implement the Make Ready Program to be operational for 2021 fire season.



Temporary Generation Program

Purpose:

Deploy temporary generation assets that enable the following to be energized during PSPS:

1. PG&E's temporary microgrids (e.g., Resilience Zones)
2. Societal Continuity locations
3. Safe-to-energize substations

Alternatives to Diesel Resources:

Launched a Request for Information on December 11 to survey the mobile generation market

- Meet operational requirements
- Improves on emissions and noise profiles of comparable diesel-based generators

Temporary Generation Scope and Issues:

1. PG&E proposing to reserve and operate up to 300 MW of mobile generation units for 2020
2. Need full year reservation to reserve temporary generation units for 2020 fire season



Community Microgrid Enablement Program

Purpose:

Support community-driven resilience goals through enablement of multi-customer critical facility microgrids

Program Scope:

1. Enhanced Utility Technical Support for Local Government Driven Critical Facility Microgrids, including:
 - Technical expertise - Limited consultation on project scoping and development and end-to-end PG&E project managers
 - Enhanced Customer Facing Tools – Enhanced web presence focusing on microgrid implementation; potential development or licensing of software tools
2. Community Microgrid Cost Support:
 - One-time matching funds to offset some portion of distribution upgrades necessary to enable islanding
3. Key Eligibility Criteria – Serve one or more critical facilities; have local government support; located in Tier 2 or 3 high fire threat districts or PSPS impacted; serve multiple customers

Next Steps:

Subject to CPUC approval of the CMEP framework and cost recovery, PG&E will consult with local governments and other stakeholders on program details and file an implementation advice letter with final proposed program details.

Appendix



Capital Expenditures and Expense Costs

SUMMARY OF TOTAL FORECASTED CAPITAL EXPENDITURES BY PROGRAM (THOUSANDS OF DOLLARS)

Line No.	Description	2020	2021	2022	Total
1	Make-Ready Program	\$135,975	–	–	\$135,975
2	Temporary Generation Program	–	–	–	–
3	CMEP	6,750	\$27,000	\$27,000	60,750
4	Total Forecasted Capital Expenditures	\$142,725	\$27,000	\$27,000	\$196,725

SUMMARY OF TOTAL FORECASTED EXPENSE COSTS BY PROGRAM (THOUSANDS OF DOLLARS)

Line No.	Description	2020	2021	2022	Total
1	Make-Ready Program	–	–	–	–
2	Temporary Generation Program	\$173,300	–	–	\$173,300
3	CMEP	3,000	\$3,000	\$3,000	9,000
4	Total Forecasted Expense Costs	\$176,300	\$3,000	\$3,000	\$182,300



Total Costs by Year

SUMMARY OF TOTAL FORECASTED COSTS BY PROGRAM (THOUSANDS OF DOLLARS)

Line No.	Description	2020	2021	2022	Total
1	Make-Ready Program	\$135,975	–	–	\$135,975
2	Temporary Generation Program	173,300	–	–	173,300
3	CMEP	9,750	\$30,000	\$30,000	69,750
4	Total Forecasted Costs	\$319,025	\$30,000	\$30,000	\$379,025