

Wildfire Risk Governance Committee

March 2nd, 2022

Executive Sponsor(s): Sumeet Singh (EVP, Chief Risk Officer & Chief Safety Officer)

Author(s) & Affiliation: Andrew Abranches (Sr Director, Wildfire Risk Management)

3/2 WRG Decision Outcomes

Decision(s) and Result(s)

Workstream	Decision	Description	Vote Results	Result	Date of Approval
EPSS	Approve EPSS enablement at R1 and R2 FPI during windy weather.	Add new wind speed, relative humidity, and dead fuel moisture 10hr criteria during R1 and R2 FPI conditions in addition to previously approved criteria and current posture.	Yea: Sumeet Singh, Stephen Cairns, Peter Kenny, Mark Quinlan, Wade Smith, Ronald Richardson Abstain: Joe Bentley	Approved	3/3/2022 Approval by Email

Safety



Earthquake

Duck, Cover, & Hold



Emergency Plan & Exit Strategy

Have a plan for yourself and your household



24/7 Nurse Care Line

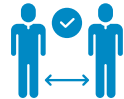
If you experience a work-related discomfort or injury, call 1-888-449-7787 and notify your supervisor.



Wash your hands!



Wear a Mask



Practice social
Distancing

Get vaccinated—it's safe, effective, and free

Appointments are available for people with a high chance of exposure, and those 65 or older. Sign up at myturn.ca.gov or call (833) 422-4255 to find out if it's your turn. If you're eligible, you can schedule an appointment, or register to be notified when one is available.



[Sign up for the vaccine](#)

Meeting Agenda

Date	3/2/2022	
Desired Outcomes	<ul style="list-style-type: none">Decision: Approve one of 2 options of EPSS Enablement [Vote by Email]	
Meeting Agenda		
What – Content	Who - Facilitator(s)	Slides
Agenda and Safety Moment	-	1-3
Review EPSS enablement at R1 & R2 FPI during windy weather	Scott Strenfel	4-11
Open Action Items	-	12-30
Appendix	-	31-37

**DECISION:
REVIEW OF EPSS ENABLEMENT AT R1 AND R2
FPI DURING WINDY WEATHER**

Summary of Current Status and Follow ups

Summary from WFRGC (2/2/2022 meeting)

- (Approved) EPSS enabled when FPI is R3 or above
- (Approved) EPSS enabled when mFPC conditions are met
- (Follow-up from WFRGC & EOT) Evaluate EPSS enablement during R1 and R2 conditions when windy and dry RH

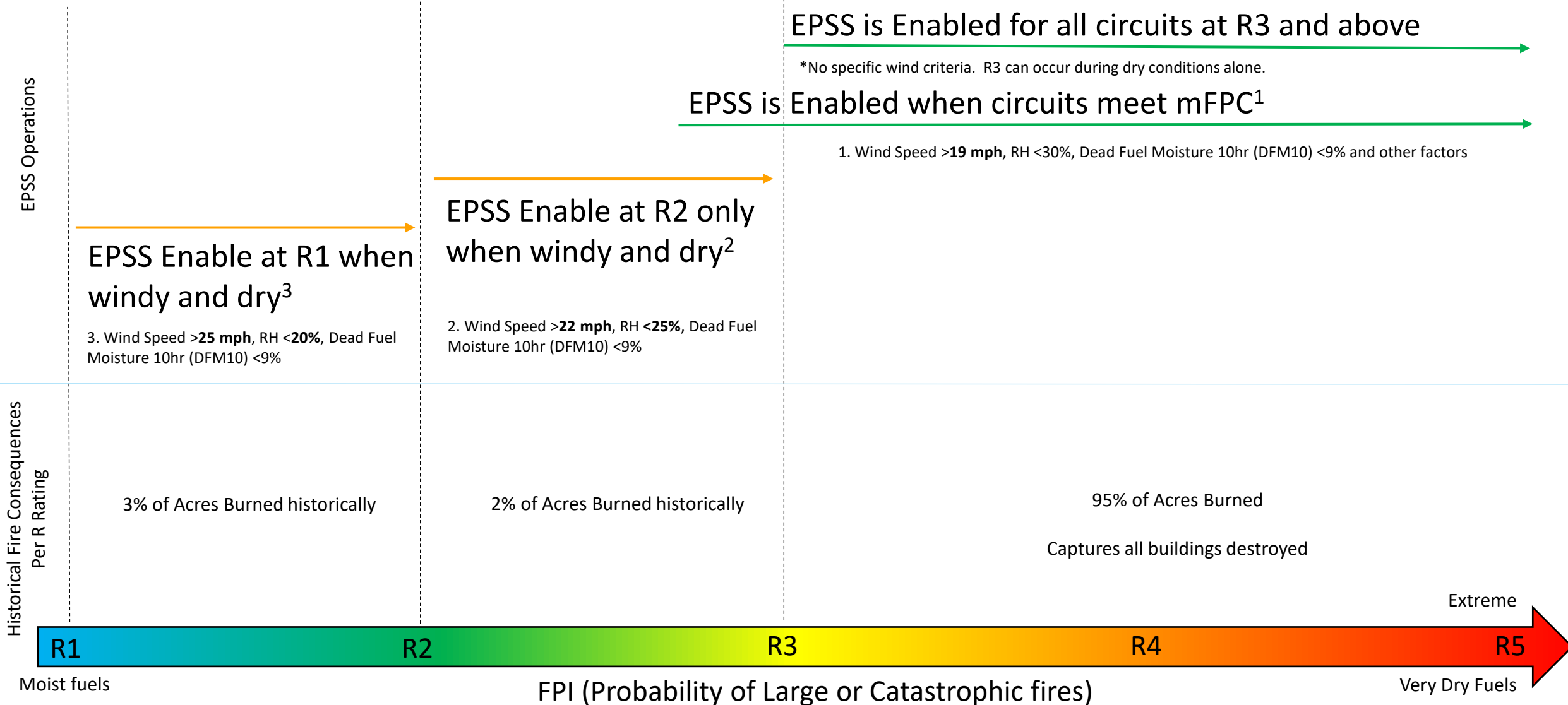
Summary of 2022 winter fires in CA

Fire	Date Started	Acres	Fatalities	Buildings Destroyed	FPI	Wind Speed Sustained (gust) MPH	RH	DFM 10hr	NWS Red Flag?	Federal GACC Fire Potential Forecast	NOAA SPC Fire Weather?
Colorado (Big Sur)	1/21/2022 5:19 PM	687	0	1	R2	35 (46)	21	8%	No	Green	No
Emerald Fire*	2/10/2022 4:00 AM	154	0	0	NA	22 (43)	17	6%	No	Yellow	No
Airport Fire*	2/16/2022 4:06 PM	4136	0	0	R3	28 (36)	28	7%	No	Yellow	No

* Outside of PG&E territory

Discussion: FPI Ratings and Operational Considerations

Legend: **Actions already in place** | **Interim Actions For Discussion**



EPSS Actions Driven by FPI, Wind, RH, and Fuel Moisture

extreme ↑
 FPI (Probability of Large or Catastrophic fires)
 ↓
 Low

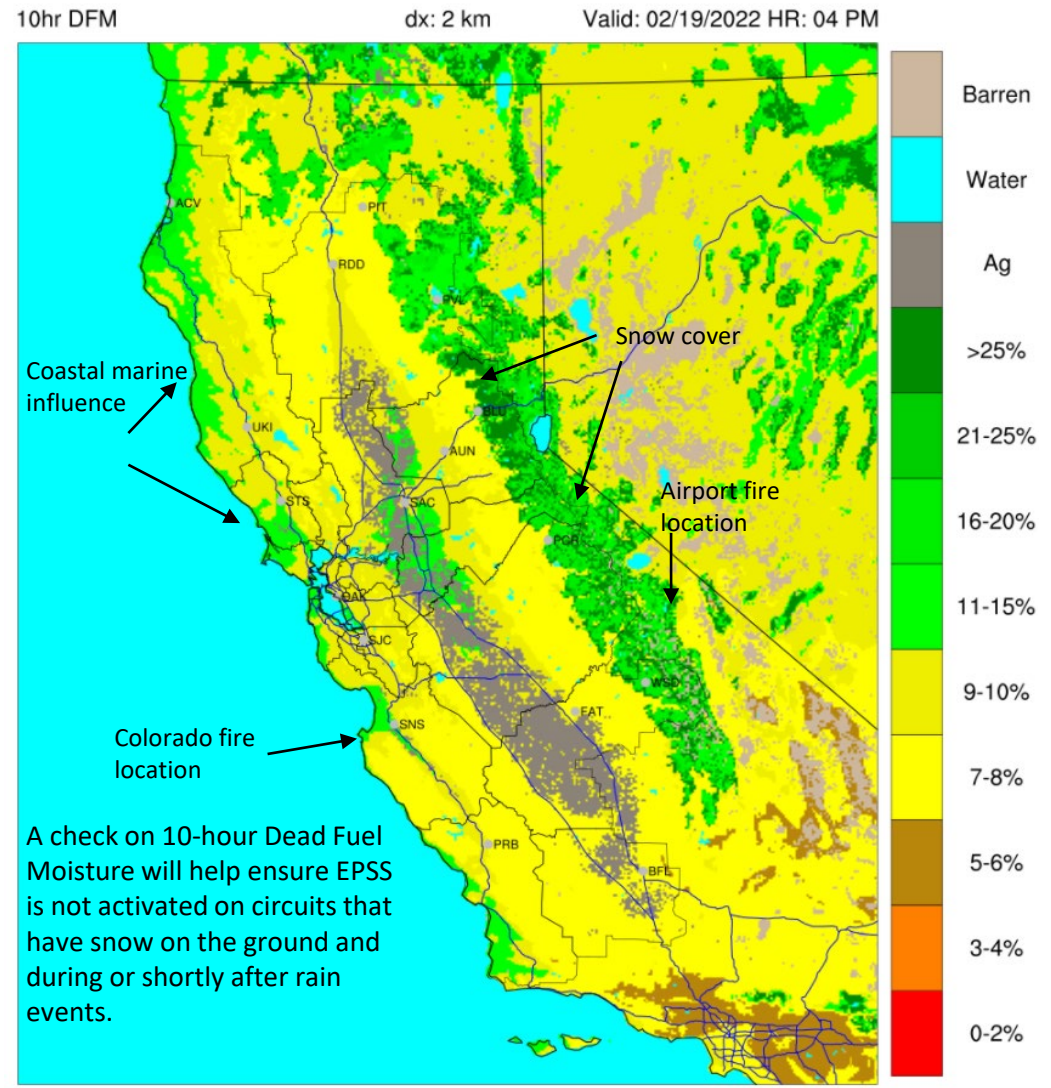
Relative Humidity (%)	50+	EPSS	EPSS	EPSS	EPSS	EPSS
	45	EPSS	EPSS	EPSS	EPSS	EPSS
	40	EPSS	EPSS	EPSS	EPSS	EPSS
	35	EPSS	EPSS	EPSS	EPSS	EPSS
	30	EPSS	EPSS	EPSS	EPSS	EPSS
	25	EPSS	EPSS	EPSS	EPSS	EPSS
	20	EPSS	EPSS	EPSS	EPSS	EPSS
	10	EPSS	EPSS	EPSS	EPSS	EPSS
	0	<19	19	22	25	30+
R3 to R5	Sustained Wind Speed (MPH)					

Relative Humidity (%)	50+					
	45					
	40					
	35					
	30					
	25			EPSS	EPSS	EPSS
	20			EPSS	EPSS	EPSS
	10			EPSS	EPSS	EPSS
	0	<19	19	22	25	30+
R2	Sustained Wind Speed (MPH)					

Relative Humidity (%)	50+					
	45					
	40					
	35					
	30					
	25					
	20				EPSS	EPSS
	10				EPSS	EPSS
	0	<19	19	22	25	30+
R1	Sustained Wind Speed (MPH)					

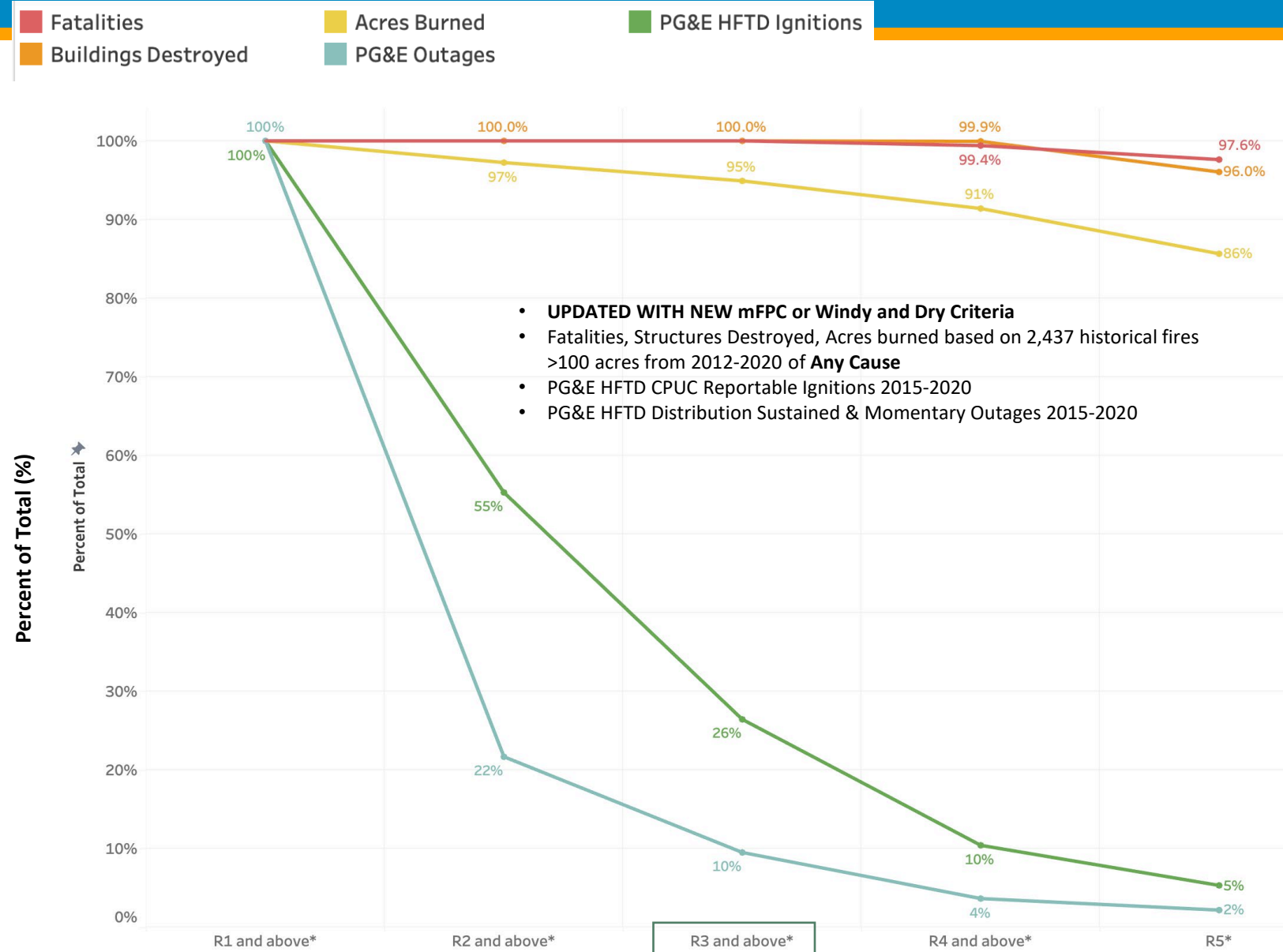
*10hr DFM must be under 9% for EPSS to be enabled below R3 only

10-hour Dead Fuel Moisture Forecast for 2/19/2022. Most of the territory is currently below 9%.



A check on 10-hour Dead Fuel Moisture will help ensure EPSS is not activated on circuits that have snow on the ground and during or shortly after rain events.

Outages, Ignitions and Consequences by FPI Ratings*



- **UPDATED WITH NEW mFPC or Windy and Dry Criteria**
- Fatalities, Structures Destroyed, Acres burned based on 2,437 historical fires >100 acres from 2012-2020 of **Any Cause**
- PG&E HFTD CPUC Reportable Ignitions 2015-2020
- PG&E HFTD Distribution Sustained & Momentary Outages 2015-2020

FPI Ratings, minimum Fire Potential Conditions (mFPC), windy and dry R1-R2 criteria analyzed for historical fire consequences, ignitions & outages.

Adding minimum Fire Potential Conditions + windy and dry R1-R2 criteria results in a 1% increase in EPSS frequency compared to R3-R5 enablement criteria

At R4 and above*, over 99% of consequences occur compared to 10% of ignitions. 91% of acres burned occur.

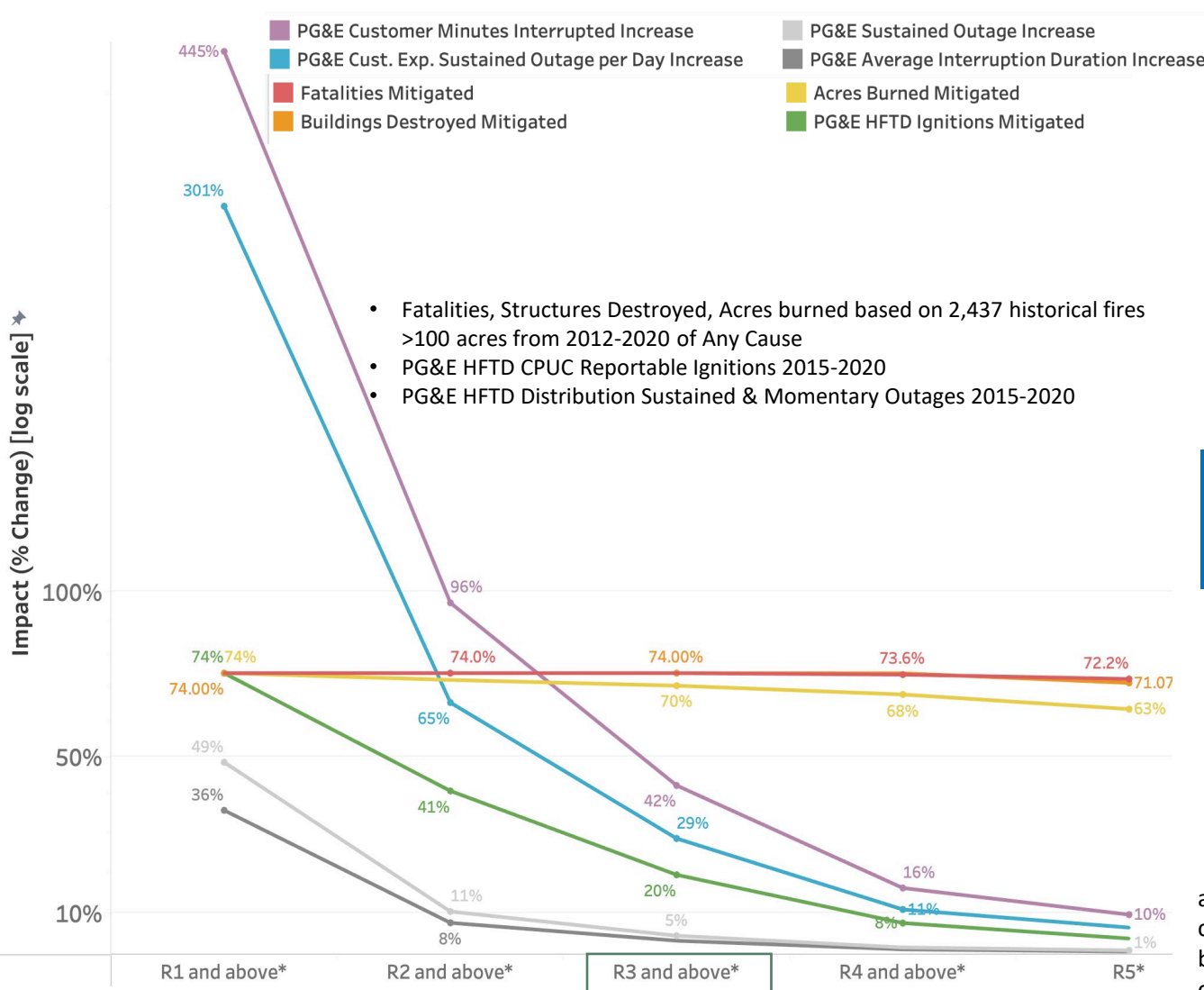
At R3 and above*, over 95% of acres burned, all consequences, and 26% of ignitions occur.

At R1* or R2*, no additional historical consequences are captured. ~5% of total acres occur (fires of any cause).

*or minimum Fire Potential Conditions (mFPC) or (R1 & R2) windy and dry criteria

EPSS Operational Daily Implementation Expected Outcome

Expected outcomes for enabling EPSS with new criteria. Based on historical fires, ignitions and outage occurrence (previous slide) combined with EPSS ignition mitigation effectiveness and EPSS customer safety factors detailed in the table.



- Fatalities, Structures Destroyed, Acres burned based on 2,437 historical fires >100 acres from 2012-2020 of Any Cause
- PG&E HFTD CPUC Reportable Ignitions 2015-2020
- PG&E HFTD Distribution Sustained & Momentary Outages 2015-2020

Impact Factors of EPSS	Value
EPSS Customer Minutes Interrupted Factor	5.45 _a
EPSS Customer Experiencing Sustained Outage Rate Factor	4.01 _a
EPSS Sustained Outage Rate Factor	1.49 _a
EPSS Average Interruption Duration Factor	1.20 _a
EPSS Distribution Ignition Mitigation Effectiveness Factor	0.74 _b

Customer Safety: Enabling EPSS at R3 and above* is expected to result in a 42% increase in Customer Minutes interrupted across EPSS circuits. Circuits most frequently meeting R3 and above* may experience up to a 250% increase in Customer Minutes Interrupted.

Daily enablement of EPSS based on daily fire danger **reduces public safety impacts of EPSS by 3-5x compared** to enabling EPSS for all circuits for all of fire season with manual testing based on fire danger.

Ignition Mitigation: Adjusted distribution ignition mitigation factor from 80% (primary) to 74% to account for primary and secondary.

Operational Considerations: 49% increase in sustained outages are possible when EPSS is enabled versus not enabled. Staffing for field and operation centers need to be considered.

a. Based on 2021 EPSS circuit reliability (EPSS Circuit Start Date – October 23rd) vs baseline of same circuits (January 1st – July 27th 2021).

b. Based on 2021 EPSS circuit distribution ignition occurrence vs. 3-year average baseline for same circuits and dates. Previous analysis used 80% effectiveness of primary only ignition occurrence.

*or minimum Fire Potential Conditions (mFPC) or (R1 & R2) windy and dry criteria

Recommended Options

The recommended options are below:

Option 1

- Add new wind speed, relative humidity, and dead fuel moisture 10hr criteria during R1 and R2 FPI conditions in addition to previously approved criteria and current posture.

Option 2

- Maintain previously approved criteria and current posture to enable EPSS when FPI is R3 or above or when mFPC are present.

Key Decision – Review of EPSS enablement at R1 and R2 FPI during windy weather

Approval Status	Approved
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Decision Detail
Approve EPSS enablement at R1 and R2 FPI during windy weather. Add new wind speed, relative humidity, and dead fuel moisture 10hr criteria during R1 and R2 FPI conditions in addition to previously approved criteria and current posture.

Concerns and Mitigations

Approvals by Email	
Sumeet Singh	Approved
Joe Bentley	Abstain
Stephen Cairns	Approved
Peter Kenny	Approved
Mark Quinlan	Approved
Wade Smith	Approved
Ronald Richardson	Approved

Action Items and Validations	