Verification for the Utility Wildfire Mitigation Maturity Survey

Utilities shall complete the following verification, attached to a PDF of their electronic survey responses, following completion of the electronic survey. This document will be shared with the utilities for completion within one business day of completing the electronic survey.

Complete the following verification for the Utility Wildfire Mitigation Maturity Survey submission:

(See Rule 1.11)
(Where Applicant is a Corporation)

I am an officer of the applicant corporation herein, and am authorized to make this verification on its behalf. The responses in the attached survey are true of my own knowledge.

I declare that the foregoing is true and correct.

Executed on March 5, 2021 (Date) at San Francisco (Name of city), California.

Kelly Hewik

(Signature and Title of Corporate Officer)

We thank you for your time spent taking this survey.
Your response has been recorded.

Below is a summary of your responses

Download PDF

Purpose of utility survey:

This survey, in addition to other inputs, will be used to inform the utility's maturity level to establish a level for the current year (2021), as well as establish a target maturity for 2023.

The assessment of maturity will also leverage each utility's WMP submission, other supporting documents and disclosures, and select audits of relevant inputs where deemed necessary.

Instructions for answering each of the survey questions:

Utilities shall answer survey questions by:

1. Indicating the most appropriate response option to each question based on the presently employed practices and capabilities of the utility.

2. Indicating the most appropriate response to each question for the utility's expected capabilities in 3 years (Q1, 2023) based on expected growth in maturity over the 3 year period of the Wildfire Mitigation Plan (WMP) to inform the utility's 3-year target maturity.

Only one response option should be selected unless the question is specified as

select all that apply.

Importantly, utilities shall only indicate that they meet a given response option if they meet all of the characteristics described within that response option, across all instances where that question is valid.

For example, if a utility meets all criteria for answer ii of a given question and all but one criterion for answer iii, that utility must select answer ii. Similarly, if a utility meets all criteria for answer ii of a given question over 60% of its territory but meets all criteria for answer i over 100% of its territory, the utility must select answer i.

Instructions for use of the electronic survey:

Please fill out the electronic survey in its entirety.

The unique link provided to you can be used on multiple devices. Please only use on a single device at a time. To avoid creation of any conflict copies, please allow 15 minutes to pass before switching between devices. For example, if passing the survey off to a colleague on a different machine please have the colleague wait for 15 minutes after you stop working to begin.

If you are completing the survey in multiple sittings, your progress will be saved. You may use the unique link provided to you to resume where you left off.

Confirmation of survey responses:

Within 24 hours of completing and submitting the survey in its entirety, the main utility contact designated below will receive a PDF of your responses for final verification by email. Please review that document, confirm all of your responses one final time, and provide your signature as instructed in the PDF.

Your responses will be evaluated by the CPUC following this final verification.

A. Risk mapping and simulation

A.I Climate scenario modeling and sensitivities

Capability 1

A.I.a How sophisticated is utility's ability to estimate the risk of weather scenarios?

Clarification: Determining wildfire risk requires the utility to understand the probability of ignition and the consequences of such an ignition while taking various conditions into account (e.g., weather, fuel levels, etc.). Categorizing level of risk requires a set of calculations and judgements to group areas by wildfire risk level whereas quantitatively estimating risk refers to accurately quantifying risk on a continuous spectrum based on a host of wildfire risk drivers (e.g., as a function of ignition probability, propagation scenarios, and communities located in the propagation path).

	i. **No clear ability** to understand incremental risk under various weather scenarios	ii. Wildfire risk can be **reliably determined based on weather and its impacts**	iii. Weather scenarios can be reliably **categorized by level of risk**	iv. **Risk for various weather scenarios** can be reliably estimated	v. **Incremental risk** of foreseeable weather scenarios can be **accurately and quantitatively estimated**
Current Year	○	●	○	○	○
by Start of 2023	○	●	○	○	○

A.I.b How are scenarios assessed?

Clarification: Per the instructions, please only indicate that you meet a given response option if you meet all the characteristics described within that response option). So, hypothetically, if you do support your scenarios assessment by historical data of incidents and near misses and conduct internal assessments, but don't have an independent expert assessment, you would select (ii).

	i. **No formal assessment process**	ii. **Independent expert** assessment	iii. Independent expert assessment, **supported by historical data of incidents and near misses**	iv. Independent expert assessment, supported by historical data of incidents and near misses, **and updated based on real-time learning during weather event**
Current Year	○	○	●	○
by Start of 2023	○	○	●	○

A.I.c How granular is utility's ability to model scenarios?

	i. Less granular than regional, or no tool at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

A.I.d How automated is the tool?

Clarification: For clarification on level of automation please refer to the 'level of systematization and automation' in Table 2 of the Maturity Model. (i) in this case corresponds to level 0; (ii) corresponds to level 1 or 2; (iii) corresponds to level 3; and (iv) corresponds to level 4

	i. Not automated	ii. Partially (<50%)	iii. Mostly (≥ 50%)	iv. Fully
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

A.I.e What additional information is used to estimate model weather scenarios and their risk?

	i. None	ii. **Weather, how weather effects failure modes and propagation**	iii. Weather, how weather effects failure modes and propagation, **existing hardware**	iv. Weather, **measured at the circuit level,** how weather effects failure modes and propagation, existing hardware	iv. Weather, measured at the circuit level, how weather effects failure modes and propagation, existing hardware, **level of vegetation**
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

A.I.f To what extent is future change in climate taken into account for future risk estimation?

	i. Future climate change not accounted for in estimating future weather and resulting risk	ii. Future risk estimates take into account generally higher risk across entire service territory due to changing climate	iii. Basic temperature modeling used to estimate effects of a changing climate on future weather and risk, taking into account difference in geography and vegetation	iv. Modeling with multiple scenarios used to estimate effects of a changing climate on future weather and risk, taking into account difference in geography and vegetation, and considering increase in extreme weather event frequency
Current Year	●	○	○	○
by Start of 2023	○	●	○	○

A.II Ignition risk estimation

Capability 2

A.II.a How is ignition risk calculated?

				iv. Tools and

	i. **No reliable tool or process** to estimate risk across the grid	ii. Tools and **processes can reliably categorize the risk of ignition** across the grid into at least two categories based on characteristics and condition of lines, equipment, and surrounding vegetation, **and localized weather patterns**	iii. Tools and processes **can quantitatively and accurately assess the risk of ignition** across the grid based on characteristics and condition of lines, equipment, and surrounding vegetation, and localized weather patterns	iv. Tools and processes **can quantitatively and accurately assess the risk of ignition** across the grid based on characteristics and condition of lines, equipment, surrounding vegetation, localized weather patterns, **and flying debris probability, with probability based on specific failure modes and top contributors to those failure modes**
Current Year	○	●	○	○
by Start of 2023	○	●	○	○

A.II.b How automated is the ignition risk calculation tool?

Clarification: For clarification on level of automation please refer to the 'level of systematization and automation' in Table 2 of the Maturity Model. (i) in this case corresponds to level 0; (ii) corresponds to level 1 or 2; (iii) corresponds to level 3; and (iv) corresponds to level 4

	i. Not automated	ii. Partially (<50%)	iii. Mostly (≥ 50%)	iv. Fully
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

A.II.c How granular is the tool?

	i. Less granular than regional, or no tool at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

A.II.d How is risk assessment confirmed? Select all that apply.

	i. By experts	ii. By historical data	iii. Through real-time learning	iv. None of the above
Current Year	■	■	□	□
by Start of 2023	■	■	□	□

A.II.e What confidence interval, in percent, does the utility use in its wildfire risk assessments?

	>60%, or no quantified

	confidence interval >80%, or no quantified confidence interval	>80%	>90%	>95%
Current Year	●	○	○	○
by Start of 2023	○	○	●	○

A.III Estimation of wildfire consequences for communities

Capability 3

A.III.a How is estimated consequence of ignition relayed?

	i. **No translation** of ignition risk estimates to potential consequences for communities	ii. Ignition events **categorized as low or high risk to communities**	iii. Ignition events **categorized with 5 or more levels of risk to communities**	iv. Consequence of ignition events **quantitatively, accurately, and precisely estimated**
Current Year	○	○	○	●
by Start of 2023	○	○	○	●

A.III.b What metrics are used to estimate the consequence of ignition risk?

	i. As a function of **at least one of the following:** structures burned, potential fatalities, or area burned	ii. As a function **of at least** potential fatalities, and one or both of structures burned, or area burned	iii. As a function of at least potential fatalities, structures burned, area burned, **monetary damages, impact on air quality, and impact on GHG reduction goals**
Current Year	●	○	○
by Start of 2023	○	○	●

A.III.c Is the ignition risk impact analysis available for all seasons?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

A.III.d How automated is the ignition risk estimation process?

Clarification: For clarification on level of automation please refer to the 'level of systematization and automation' in Table 2 of the Maturity Model. (i) in this case corresponds to level 0; (ii) corresponds to level 1 or 2; (iii) corresponds to level 3; and (iv) corresponds to level 4

	i. Not automated	ii. Partially (<50%)	iii. Mostly (≥ 50%)	iv. Fully
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

A.III.e How granular is the ignition risk estimation process?

	i. Less granular than regional, or no tool at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

A.III.f How are the outputs of the ignition risk impact assessment tool evaluated?

	i. Outputs **not evaluated**	ii. Outputs **independently assessed by experts**	iii. Outputs independently assessed by experts **and confirmed by historical data**	iv. Outputs independently assessed by experts **and confirmed based on real time learning, for example, using machine learning**
Current Year	○	○	●	○
by Start of 2023	○	○	●	○

A.III.g How other inputs are used to estimate impact?

	i. Level and conditions **of vegetation and weather**	ii. Level and conditions of **vegetation and weather, including the vegetation specifies immediately surrounding the ignition site**	iii. Level and conditions of **vegetation and weather, including the vegetation specifies immediately surrounding the ignition site and up-to-date moisture content, local weather patterns**	iv. None of the above
Current Year	○	●	○	○
by Start of 2023	○	○	●	○

A.IV Estimation of wildfire and PSPS risk-reduction impact

Capability 4

A.IV.a How is risk reduction impact estimated?

	i. **No clear estimation** of risk reduction	ii. Approach accurately **estimates risk reduction potential of**	iii. Approach reliably **estimates risk reduction potential of**	iv. Approach reliably **estimates risk reduction potential of initiatives** on an	v. Approach reliably **estimates risk reduction potential of initiatives** on an interval scale (e.g. specific quantitative units)
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

	potential across most initiatives	**initiatives** categorically **(e.g. High, Medium, Low)**	**initiatives,** on an ordinal scale (e.g. 1-5)	interval scale (e.g. specific quantitative units)	with a quantitative confidence interval
Current Year				iv. Approach reliably **estimates risk reduction potential of initiatives** on an interval scale (e.g. specific quantitative units)	v. Approach reliably **estimates risk reduction potential of initiatives** on an interval scale (e.g. specific quantitative units)
by Start of 2023	i. **No clear estimation** of risk reduction	ii. Approach accurately **estimates risk reduction potential of**	iii. Approach reliably **estimates risk reduction potential of**		

A.IV.b How automated is your ignition risk reduction impact assessment tool?

Clarification: For clarification on level of automation please refer to the 'level of systematization and automation' in Table 2 of the Maturity Model. (i) in this case corresponds to level 0; (ii) corresponds to level 1 or 2; (iii) corresponds to level 3; and (iv) corresponds to level 4

	i. Not automated	ii. Partially (<50%)	iii. Mostly (≥50%)	iv. Fully
Current Year	●	○	○	○
by Start of 2023	○	○	●	○

A.IV.c How granular is the ignition risk reduction impact assessment tool?

	i. Less granular than regional, or no tool at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

A.IV.d How are ignition risk reduction impact assessment tool estimates assessed?

	i. **No or limited formal evidence** or support for estimates	ii. With **evidence and logical reasoning**	iii. Independent **expert** assessment	iv. Independent expert assessment, **supported by historical data of incidents and near misses**
Current Year	○	●	○	○
by Start of 2023	○	○	○	●

A.IV.e What additional information is used to estimate risk reduction impact?

	iii. Existing hardware type	iv. Existing hardware type and condition, including operating	v. Existing hardware type and condition, including operating history; level and condition of vegetation; weather; **and**

	i. None	ii. **Existing hardware type and condition**	iii. Existing hardware type and condition, including operating history; **level and condition of vegetation; weather**	iv. Existing hardware type and condition, including operating history; level and condition of vegetation; **combination of initiatives already deployed**
Current Year	○	○	○	○
by Start of 2023	○	○	○	○

A.V Risk maps and simulation algorithms

Capability 5

Clarification on terminology: A risk map is a collection of data sufficient to represent the spatial distribution (e.g., across a geography) of a given type of risk (i.e., the probability of an event and its consequence) and the spatial representation thereof. Risk maps may include maps of the probability of ignition along the utility's grid and may represent the consequences given ignition at various points along the grid. Risk maps may also combine these factors to show a weighted probability and consequence risk level across the utility's grid. Data inputs should include the variables and conditions used to calculate risk for a given point, line, or polygon. The risk mapping algorithm is a methodology or formula for interpreting a risk calculation from these data inputs.

A.V.a What is the protocol to update risk mapping algorithms?

	i. **No defined process** for updating risk mapping algorithms	ii. Risk mapping algorithms **updated based on detected deviations of risk model** to ignitions and propagation	iii. Risk mapping algorithms **updated continuously in real time**
Current Year	●	○	○
by Start of 2023	○	●	○

A.V.b How automated is the mechanism to determine whether to update algorithms based on deviations?

Clarification: For clarification on level of automation please refer to the 'level of systematization and automation' in Table 2 of the Maturity Model. (i) in this case corresponds to level 0; (ii) corresponds to level 1 or 2; (iii) corresponds to level 3; and (iv) corresponds to level 4

	i. Not automated	ii. Partially (<50%)	iii. Mostly (≥50%)	iv. Fully
Current Year	●	○	○	○
by Start of 2023	○	○	●	○

A.V.c How are deviations from risk model to ignitions and propagation detected?

	i. Not currently calculated	ii. Manually	iii. Semi-automated process	iv. Fully automated process

	i. Not currently calculated	ii. Manually	iii. Semi-automated process	iv. Fully automated process
Current Year	●	○	○	○
by Start of 2023	○	○	●	○

A.V.d How are decisions to update algorithms evaluated?

	i. Not currently evaluated	ii. Independently **evaluated by experts**	iii. Independently evaluated by experts **and historical data**
Current Year	●	○	○
by Start of 2023	○	○	●

A.V.e What other data is used to make decisions on whether to update algorithms?

	i. **Historic ignition and propagation data**	ii. **Current** and historic ignition and propagation data	iii. Current and historic ignition and propagation data; **near-miss data**	iv. Current and historic ignition and propagation data; near-miss data; **data from other utilities and other sources**	v. None of the above
Current Year	○	○	●	○	○
by Start of 2023	○	○	●	○	○

B. Situational awareness and forecasting

B.I Weather variables collected

Capability 6

B.I.a What weather data is currently collected?

	i. Wind data being collected is **insufficient** to properly understand wind related risks along grid	ii. **Wind being measured** accurately enough along the grid to estimate ignition probability	iii. **Range of accurate weather variables (e.g. humidity, precipitation, surface and atmospheric wind conditions)** that impact probability of ignition and propagation from utility assets	iv. Range of accurate weather variables that impact probability of ignition and propagation from utility assets; additional **data to measure physical impact of weather on grid collected** (e.g., sway in lines, sway in vegetation)
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

B.I.b How are measurements validated?

	i. Measurements **not currently validated**	ii. **Manual** field calibration measurements	iii. **Automatic** field calibration measurements
Current Year	●	○	○
by Start of 2023	●	○	○

B.I.c Are elements that cannot be reliably measured in real time being predicted (e.g., fuel moisture content)?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

B.I.d How many sources are being used to provide data on weather metrics being collected?

	i. None	ii. One	iii. More than one
Current Year	●	○	○
by Start of 2023	●	○	○

B.II Weather data resolution

Capability 7

B.II.a How granular is the weather data that is collected?

	i. Weather data collected **does not accurately reflect local weather** conditions across grid infrastructure	ii. Weather data has sufficient granularity to **reliably measure weather conditions in HFTD areas**	iii. Weather data has sufficient granularity to reliably measure weather conditions in HFTD areas, **and along the entire grid and in all areas needed to predict weather on the grid**	iv. Weather data has sufficient granularity to reliably measure weather conditions in HFTD areas, and along the entire grid and in all areas needed to predict weather on the grid. **Also includes wind estimations at various atmospheric altitudes relevant to ignition risk**
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

B.II.b How frequently is data gathered?

	i. Less frequently than hourly	ii. At least hourly	iii. At least four times per hour	iv. At least six times per hour	v. At least sixty times per hour
Current Year	●	○	○	○	○
by Start of 2023	●	○	○	○	○

	i. Less frequently than hourly	ii. At least hourly	iii. At least four times per hour	iv. At least six times per hour	v. At least sixty times per hour
Current Year	●	○	○	○	○
by Start of 2023	●	○	○	○	○

B.II.c How granular is the tool?

	i. Less granular than regional, or no tool at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based
Current Year	●	○	○	○	○
by Start of 2023	●	○	○	○	○

B.II.d How automated is the process to measure weather conditions?

Clarification: For clarification on level of automation please refer to the 'level of systematization and automation' in Table 2 of the Maturity Model. (i) in this case corresponds to level 0; (ii) corresponds to level 1 or 2; (iii) corresponds to level 3; and (iv) corresponds to level 4

	i. Not automated	ii. Partially (<50%)	iii. Mostly (≥50%)	iv. Fully
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

B.III Weather forecasting ability

Capability 8

B.III.a How sophisticated is the utility's weather forecasting ability?

	i. **No reliable independent weather forecasting ability**	ii. Utility has independent weather forecasting ability **sufficiently accurate to fulfill PSPS requirements**	iii. Utility has the ability to **use a combination of accurate weather stations and external weather data** to make accurate forecasts	iv. Utility has the ability to use a combination of accurate weather stations and external weather data to make accurate forecasts, **and adjusts them in real time based on a learning algorithm and updated weather inputs**
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

B.III.b How far in advance can accurate forecasts be prepared?

	i. Less than two weeks in advance	ii. At least two weeks in advance	iii. At least three weeks in advance
Current Year	●	○	○
by Start of 2023	●	○	○

B.III.c At what level of granularity can forecasts be prepared?

	i. Less granular than regional, or no forecasts at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based
Current Year	●	○	○	○	○
by Start of 2023	●	○	○	○	○

B.III.d How are results error-checked?

	i. Results are **not error checked**	ii. Results are **error checked against historical weather patterns**	iii. Criteria for option (ii) met, and forecasted results are subsequently error **checked against measured weather data**
Current Year	●	○	○
by Start of 2023	●	○	○

B.III.e How automated is the forecast process?

Clarification: For clarification on level of automation please refer to the 'level of systematization and automation' in Table 2 of the Maturity Model. (i) in this case corresponds to level 0; (ii) corresponds to level 1 or 2; (iii) corresponds to level 3; and (iv) corresponds to level 4

	i. Not automated	ii. Partially (<50%)	iii. Mostly (≥50%)	iv. Fully
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

B.IV External sources used in weather forecasting

Capability 9

B.IV.a What source does the utility use for weather data?

	i. Utility **does not use external weather data**	ii. External data used where direct measurements from **utility's own weather stations are not available**	iii. Utility **uses a combination** of accurate weather stations and external weather data	iv. Utility uses a combination of accurate weather stations and external weather data, **and elects to use the data set, as a whole or in composite, that is most accurate**
Current Year	○	●	○	○
by Start of 2023	○	●	○	○

B.IV.b How is weather station data checked for errors?

	i. Weather station data is **not checked for errors**	ii. **Mostly manual** processes for error checking weather stations with external data sources	iii. **Mostly automated** processes for error checking weather stations with external data sources	iv. **Completely automated** processes for error checking weather stations with external data sources	v. **Completely automated processes for error checking weather stations with external data sources; and where the utility builds new weather stations or calibrates existing stations, it is based on these error checking processes**
Current Year	●	○	○	○	○
by Start of 2023	●	○	○	○	○

B.IV.c For what is weather data used?

	i. Weather data is **used to make decisions**	ii. Weather data is **used to produce a combined weather map** that can be used to help make decisions	iii. Weather data is **used to create a single visual and configurable live map** that can be used to help make decisions
Current Year	●	○	○
by Start of 2023	●	○	○

B.V Wildfire detection processes and capabilities

Capability 10

B.V.a Are there well-defined procedures for detecting ignitions along the grid?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

B.V.b What equipment is used to detect ignitions?

	i. **No consistent set of equipment** for detecting	ii. **Well-defined equipment** for detecting ignitions	iii. Well-defined equipment for detecting ignitions along grid, **including remote detection equipment**	iv. Well-defined equipment for detecting ignitions along grid, including remote detection equipment including cameras, **and satellite**

	ignitions along grid	along grid	including cameras	monitoring
Current Year	○	○	●	iv. Well-defined equipment for detecting ignitions along grid,
by Start of 2023	○	○	iii. Well-defined equipment for	○

B.V.c How is information on detected ignitions reported?

	i. Detected ignitions are **not reported**	ii. **Procedure exists** for notifying suppression forces	iii. Procedure exists for notifying suppression forces **and key stakeholders**	iv. Procedure **automatically, accurately, and in real time notifies** suppression forces and key stakeholders	v. Procedure automatically, accurately, and in real time notifies suppression forces and key stakeholders, and tracks and reports propagation paths to suppression forces in accurately and in real time
Current Year	○	○	●	○	○
by Start of 2023	○	○	●	○	○

B.V.d What role does ignition detection software play in wildfire detection?

	i. Ignition detection software **not currently deployed**	ii. Ignition detection software in cameras **used to augment** ignition detection procedures	iii. Ignition detection software in cameras **operates automatically** as part of ignition detection procedures	iv. All criteria met for option iii., and software **automatically reports** any ignition event to suppression forces accurately and in real time
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

C. Grid design and system hardening

Clarification: 'Hardening' refers to grid hardening as defined in the WMP guidelines: Actions (such as equipment upgrades, maintenance, and planning for more resilient infrastructure) taken in response to the risk of undesirable events (such as outages) or undesirable conditions of the electrical system in order to reduce or mitigate those events and conditions, informed by an assessment of the relevant risk drivers or factors.

C.I Approach to prioritizing initiatives across territory

Capability 11

C.I.a How are wildfire risk reduction initiatives prioritized?

	i. Plan **does not clearly prioritize** initiatives geographically to focus on highest risk areas	ii. Plan **prioritizes** risk reduction initiatives to **within only HFTD areas**	iii. Plan prioritizes wildfire risk reduction initiatives **based on local geography and conditions** within only HFTD areas	iv. Plan prioritizes wildfire risk reduction initiatives at the span level based on i) risk modeling driven by local geography and climate/weather conditions, fuel loads and moisture content and topography ii) detailed wildfire and PSPS risk simulations across individual circuits	v. Plan prioritizes wildfire risk reduction initiatives at the asset level based on i) risk modeling driven by local geography and climate/weather conditions, fuel loads and moisture content and topography ii) risk estimates across individual circuits, including estimates of actual consequence, and iii) taking power delivery uptime into account (e.g. reliability, PSPS, etc.)
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

C.II Grid design for minimizing ignition risk

Capability 12

C.II.a Does grid design meet minimum G095 requirements and loading standards in HFTD areas?

	i. No	ii. Yes	iii. Grid topology exceeds design requirements, designed based on accurate understanding of drivers of utility ignition risk
Current Year	○	○	●
by Start of 2023	○	○	●

C.II.b Does the utility provide micro grids or islanding where traditional grid infrastructure is impracticable and wildfire risk is high?

grid infrastructure is impracticable and wildfire risk is high?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

C.II.c Does routing of new portions of the grid take wildfire risk into account?

	i. Yes	ii. No
Current Year	●	○
by Start of 2023	●	○

C.II.d Are efforts made to incorporate the latest asset management strategies and new technologies into grid topology?

	i. No	ii. Yes, some effort made in HFTD areas	iii. Yes, across the entire service area
Current Year	○	○	●
by Start of 2023	○	○	●

C.III Grid design for resiliency and minimizing PSPS

Capability 13

C.III.a What level of redundancy does the utility's transmission architecture have?

	i. **Many single points of failure**	ii. **n-1 redundancy** for all circuits subject to PSPS
Current Year	●	○
by Start of 2023	●	○

C.III.b What level of redundancy does the utility's distribution architecture have?

	i. **Many single points of failure**	ii. **n-1 redundancy** covering at least 50% of customers in HFTD	iii. **n-1 redundancy** covering at least 70% of customers in HFTD	iv. **n-1 redundancy** covering at least 85% of customers in HFTD
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

C.III.c What level of sectionalization does the utility's distribution architecture have?

	iii. **Switches** in HFTD areas to individually	iv. **Switches** in HFTD areas to individually	v. **Switches** in HFTD areas to

	i. **Many single points of failure**	ii. **Switches** in HFTD areas to individually isolate circuits	iii. **Switches** in HFTD areas to individually isolate circuits, such that no more than 2000 customers sit within one switch	iv. **Switches** in HFTD areas to individually isolate circuits, such that no more than 1000 customers sit within one switch	v. **Switches** in HFTD areas to individually isolate circuits, such that no more than 200 customers sit within one switch
Current Year	●	○	○	○	○
by Start of 2023	●	○	○	○	○

C.III.d How does the utility consider egress points in its grid topology?

	i. **Does not consider**	ii. Egress points used as an **input** for grid topology design	iii. Egress points **available** and **mapped** for each customer, and potential traffic mapped based on **traffic simulation** and taken into consideration for grid topology design	iv. Egress points available and mapped for each customer, with potential traffic simulated and taken into consideration for grid topology design, and **microgrids** or other means to reduce consequence for customers at frequent risk of PSPS
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

C.IV Risk-based grid hardening and cost efficiency

Capability 14

C.IV.a Does the utility have an understanding of the risk spend efficiency of hardening initiatives?

Clarification: 'Hardening initiatives' refers to all initiatives implemented by utility or by other utilities in California

	i. Utility has no clear understanding of the relative risk spend efficiency of hardening initiatives	ii. Utility has an accurate understanding of the relative cost and effectiveness of different initiatives	iii. Utility has an accurate understanding of the relative cost and effectiveness of different initiatives, tailored to the circumstances of different locations on its grid
Current Year	○	○	●
by Start of 2023	○	○	●

C.IV.b At what level can estimates be prepared?

	i. Less granular

	i. Less granular than regional, or not at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

C.IV.c How frequently are estimates updated?

	i. Never	ii. Less frequently than annually	iii. Annually or more frequently
Current Year	○	○	●
by Start of 2023	○	○	●

C.IV.d What grid hardening initiatives does the utility include within its evaluation?

Clarification: 'All Hardening initiatives' refers to all initiatives implemented by utility or by other utilities in California

	i. None	ii. Some	iii. Most	iv. All	v. All, supported by independent testing
Current Year	○	○	○	●	○
by Start of 2023	○	○	○	●	○

C.IV.e Can the utility evaluate risk reduction synergies from combination of various initiatives?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

C.V Grid design and asset innovation

Capability 15

C.V.a How are new hardening solution initiatives evaluated?

	i. **No established program** for evaluating the risk spend efficiency of new hardening initiatives	ii. **New initiatives evaluated based** on installation into grid and measuring direct reduction in ignition events	iii. New initiatives evaluated based on installation into grid and measuring direct reduction in ignition events, **and measuring reduction impact on near-miss metrics**	iv. New initiatives **independently** evaluated, **followed by field testing** based on installation into grid and measuring direct reduction in ignition events, and measuring reduction impact on near-miss metrics
Current Year	○	●	○	○

by Start of 2023	○	○	●	iv. New initiatives **independently** ○

C.V.b Are results of pilot and commercial deployments, including project performance, project cost, geography, climate, vegetation etc. shared in sufficient detail to inform decision making at other utilities?

	i. No	ii. **Yes, with limited partners**	iii. Yes, **extensively with industry, academia, and other utilities**
Current Year	●	○	○
by Start of 2023	●	○	○

C.V.c Is performance of new initiatives independently audited?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

D. Asset management and inspections

D.I Asset inventory and condition assessments

Capability 16

D.I.a What information is captured in the equipment inventory database?

	i. There is **no service territory- wide inventory** of electric lines and equipment including their state of wear or disrepair	ii. There is an **accurate inventory of equipment** that may contribute to wildfire risk, including age, state of wear, and expected lifecycle	iii. There is an accurate inventory of equipment that may contribute to wildfire risk, including age, state of wear, and expected lifecycle, **including records of all inspections and repairs**	iv. There is an accurate inventory of equipment that may contribute to wildfire risk, including age, state of wear, and expected lifecycle, including records of all inspections and repairs **and up-to-date work plans on expected future repairs and replacements**	v. There is an accurate inventory of equipment that may contribute to wildfire risk, including age, state of wear, and expected lifecycle, including records of all inspections and repairs and up-to-date work plans on expected future repairs and replacements **wherein repairs and sensor outputs are independently audited**
Current Year	○	○	●	○	○
Start of 2023	○	○	○	○	●

D.I.b How frequently is the condition assessment updated?

	i. Never	ii. Annually	iii. Quarterly	iv. Monthly	v. Hourly
Current Year	○	●	○	○	○
Start of 2023	○	●	○	○	○

D.I.c Does all equipment in HFTD areas have the ability to detect and respond to malfunctions?

	i. **No system and approach are in place** to detect or respond to malfunctions	ii. A system and approach **are in place to reliably detect incipient malfunctions** likely to cause ignition	iii. **Sensorized, continuous monitoring equipment** is in place to determine the state of equipment and reliably detect incipient malfunctions likely to cause ignition	iv. Sensorized, continuous monitoring equipment is in place to determine the state of equipment and reliably detect incipient malfunctions likely to cause ignition, **with the ability to de-activate electric lines and equipment exhibiting such failure**
Current Year	○	○	○	●
by Start of 2023	○	○	○	●

D.I.d How granular is the inventory?

	i. There is **no inventory**	ii. At the **span** level	iii. At the **asset** level
Current Year	○	○	●
by Start of 2023	○	○	●

D.II Asset inspection cycle

Capability 17

D.II.a How frequent are your patrol inspections?

	i. **Less frequent** than regulations require	ii. **Consistent** with minimum regulatory requirements	iii. **Above** minimum regulatory requirements, with more frequent inspections for highest risk equipment
Current Year	○	○	●
by Start of 2023	○	○	●

D.II.b How are patrol inspections scheduled?

			iii. **Risk, as determined by**	iv. Risk, **independently determined** by

	i. Based on annual or periodic **schedules**	ii. Based on **up-to-date static maps** of equipment types and environment	iii. **Risk, as determined by predictive modeling** of equipment failure probability and risk causing ignition	iv. Risk, **independently determined** by predictive modeling of equipment failure probability and risk causing ignition
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

D.II.c What are the inputs to scheduling patrol inspections?

	i. At least annually updated or verified **static maps** of equipment and environment	ii. **Predictive modeling** of equipment failure probability and risk	iii. Predictive modeling **supplemented with continuous monitoring by sensors**	iv. Outdated static maps
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

D.II.d How frequent are detailed inspections?

	i. **Less frequent** than regulations require	ii. **Consistent** with minimum regulatory requirements	iii. **Above** minimum regulatory requirements, with more frequent inspections for highest risk equipment
Current Year	○	○	●
by Start of 2023	○	○	●

D.II.e How are detailed inspections scheduled?

	i. Based on annual or periodic **schedules**	ii. Based on **up-to-date static maps** of equipment types and environment	iii. **Risk, as determined by predictive modeling** of equipment failure probability and risk causing ignition	iv. Risk, **independently determined** by predictive modeling of equipment failure probability and risk causing ignition
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

D.II.f What are the inputs to scheduling detailed inspections?

	i. At least annually updated or verified **static maps** of equipment and environment	ii. **Predictive modeling** of equipment failure probability and risk	iii. Predictive modeling **supplemented with continuous monitoring by sensors**	iv. Outdated static maps
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

D.II.g How frequent are your other inspections?

	i. **Less frequent** than regulations require	ii. **Consistent** with minimum regulatory requirements	iii. **Above** minimum regulatory requirements, with more frequent inspections for highest risk equipment
Current Year	○	○	●
by Start of 2023	○	○	●

D.II.h How are other inspections scheduled?

	i. Based on annual or periodic **schedules**	ii. Based on **up-to-date static maps** of equipment types and environment	iii. **Risk, as determined by predictive modeling** of equipment failure probability and risk causing ignition	iv. Risk, **independently determined** by predictive modeling of equipment failure probability and risk causing ignition
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

D.II.i What are the inputs to scheduling other inspections?

	i. At least annually updated or verified **static maps** of equipment and environment	ii. **Predictive modeling** of equipment failure probability and risk	iii. Predictive modeling **supplemented with continuous monitoring by sensors**	iv. Outdated static maps
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

D.III Asset inspection effectiveness

Capability 18

D.III.a What items are captured within inspection procedures and checklists?

	i. Patrol, detailed, enhanced, and other inspection procedures and checklists **do not include all items required** by statute and regulations	ii. Patrol, detailed, enhanced, and other inspection procedures and checklists **include all items required** by statute and regulations	iii. Patrol, detailed, enhanced, and other inspection procedures and checklists include all items required by statute and regulations, **and includes lines and equipment typically responsible for ignitions and near misses**
Current Year	○	○	●
by Start of 2023	○	○	●

D.III.b How are procedures and checklists determined?

	i. Based on **statute and regulatory guidelines only**	ii. Based on **predictive modeling** based on vegetation and equipment type, age, and condition	iii. Based on predictive modeling based on equipment type, age, and condition **and validated by independent experts**	iv. Based on predictive modeling based on equipment type, age, and condition and validated by independent experts, **with dynamic adjustments in real time based on deficiencies found during inspection**
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

D.III.c At what level of granularity are the depth of checklists, training, and procedures customized?

	i. Across the **service territory**	ii. Across a **region**	iii. At the **circuit** level	iv. At the **span** level	v. At the **asset** level
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

D.IV Asset maintenance and repair

Capability 19

D.IV.a What level are electrical lines and equipment maintained at?

	i. Electric lines and equipment **not consistently maintained** at required condition over multiple circuits	ii. Electrical lines and equipment **maintained as required by regulation**	iii. Electrical lines and equipment maintained as required by regulation, **and additional maintenance done in areas of grid at highest wildfire risk based on detailed risk mapping**
Current Year	○	○	●
by Start of 2023	○	○	●

D.IV.b How are service intervals set?

	i. Based on wildfire risk in relevant **area**	ii. Based on wildfire risk in relevant **circuit**	iii. Based on wildfire risk in relevant circuit, **as well as real-time monitoring from sensors**	iv. None of the above
Current Year	○	○	○	●
by Start of 2023	○	○	○	●

D.IV.c What do maintenance and repair procedures take into account?

	i. Wildfire risk	ii. Wildfire risk, **performance history, and past operating conditions**	iii. None of the above
Current Year	○	○	●
by Start of 2023	○	○	●

D.V QA/QC for asset maintenance

Capability 20

D.V.a How is contractor activity audited?

	i. **Lack of controls** for auditing work completed, including inspections, for employees or subcontractors	ii. Through an established and functioning audit process to manage and confirm work completed by subcontractors	iii. Through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors, **where contractor activity is subject to semi-automated audits using technologies capable of sampling the contractor's work** (e.g., LiDAR scans, photographic evidence)	iv. Through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors, where contractor activity is subject to **automated** audits **using technologies capable of sampling the contractor's work** (e.g., LiDAR scans, photographic evidence)
Current Year	○	●	○	○
by Start of 2023	○	●	○	○

D.V.b Do contractors follow the same processes and standards as utility's own employees?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

D.V.c How frequently is QA/QC information used to identify deficiencies in quality of work performance and inspections performance?

	i. Never	ii. Sporadically	iii. On an ad hoc basis	iv. Regularly	v. Real-time
Current Year	○	○	○	●	○
by Start of 2023	○	○	○	●	○

D.V.d How is work and inspections that do not meet utility-prescribed standards remediated?

	i. **Lack of effective remediation** for ineffective inspections or low-quality work	ii. **QA/QC information is used to identify systemic deficiencies** in quality of work and inspections	iii. QA/QC information is used to identify systemic deficiencies in quality of work and inspections **and recommend training based on weaknesses**	iv. QA/QC information is used to identify systemic deficiencies in quality of work and inspections, **grade individuals**, and recommend **specific pre-made and tested** training based on weaknesses
Current Year	○	○	●	○
by Start of 2023	○	○	○	●

D.V.e Are workforce management software tools used to manage and confirm work completed by subcontractors?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

E. Vegetation management and inspections

E.I Vegetation inventory and condition assessments

Capability 21

E.I.a What information is captured in the inventory?

	i. There is **no vegetation inventory** sufficient to determine vegetation clearances across the grid at the time of the last inspection	ii. **Centralized inventory** of vegetation clearances based on most recent inspection	iii. Centralized inventory of vegetation clearances, **including predominant vegetation species and individual high risk-trees across grid**	iv. Centralized inventory of vegetation clearances, including **individual** vegetation species **and their expected growth rate**, as well as individual high risk-trees across grid	v. Centralized inventory of vegetation clearances, including individual vegetation species and their expected growth rate, as well as individual high risk-trees across grid. **Includes up-to- date tree health and moisture content to determine risk of ignition and propagation**
Current Year	●	○	○	○	○

by Start of 2023	●	○	○	○	v. Centralized

E.I.b How frequently is the inventory updated?

	i. Never	ii. Annually	iii. Within 1 month of collection	iv. Within 1 week of collection	v. Within 1 day of collection
Current Year	●	○	○	○	○
by Start of 2023	●	○	○	○	○

E.I.c Are inspections independently verified by third party experts?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

E.I.d How granular is the inventory?

	i. Regional	ii. Circuit-based	iii. Span-based	iv. Asset-based
Current Year	○	○	○	●
by Start of 2023	○	○	○	●

E.II Vegetation inspection cycle

Capability 22

E.II.a How frequent are all types of vegetation inspections?

	i. **Less frequent** than regulations require	ii. **Consistent** with minimum regulatory requirements	iii. **Above** minimum regulatory requirements, with more frequent inspections for highest risk areas
Current Year	○	●	○
by Start of 2023	○	●	○

E.II.b How are vegetation inspections scheduled?

	i. Based on annual or periodic **schedules**	ii. Based on up-to- date **static maps** of predominant vegetation species and environment	iii. **Risk, as determined by predictive modeling** of vegetation growth and growing conditions	iv. **Need, as independently determined by predictive modeling** of vegetation growth and growing conditions
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

E.II.c What are the inputs to scheduling vegetation inspections?

	i. At least annually-updated **static maps** of vegetation and environment	ii. Up to date, static maps of vegetation and environment, **as well as data on annual growing conditions**	iii. **Predictive modeling** of vegetation growth	iv. Predictive modeling of vegetation growth **supplemented with continuous monitoring by sensors**	v. Predictive modeling of vegetation growth supplemented with continuous monitoring by sensors and **considering tree health and other vegetation risk factors for more frequent inspections in less healthy areas**
Current Year	●	○	○	○	○
by Start of 2023	●	○	○	○	○

E.III Vegetation inspection effectiveness

Capability 23

E.III.a What items are captured within inspection procedures and checklists?

	i. Patrol, detailed, enhanced, and other inspection procedures and checklists **do not include all items required** by statute and regulations	ii. Patrol, detailed, enhanced, and other inspection procedures and checklists **include all items required** by statute and regulations	iii. Patrol, detailed, enhanced, and other inspection procedures and checklists include all items required by statute and regulations, **and includes vegetation types typically responsible for ignitions and near misses**
Current Year	○	●	○
by Start of 2023	○	●	○

E.III.b How are procedures and checklists determined?

	i. Based on **statute and regulatory guidelines only**	ii. Based on **predictive modeling** based on vegetation and equipment type, age, and condition	iii. Based on predictive modeling based on vegetation and equipment type, age, and condition **and validated by independent experts**	iv. Based on predictive modeling based on vegetation and equipment type, age, and condition and validated by independent experts, **with dynamic adjustments in real time based on deficiencies found during inspection**
Current Year	●	○	○	○

by Start of 2023	●	○	○	iv. Based on predictive modeling ○

E.III.c At what level of granularity are the depth of checklists, training, and procedures customized?

	i. Across the **service territory**	ii. Across a **region**	iii. At the **circuit** level	iv. At the **span** level	v. At the **asset** level
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

E.IV Vegetation grow-in mitigation

Capability 24

E.IV.a How does utility clearance around lines and equipment perform relative to expected standards?

	i. Utility often **fails to maintain minimum** statutory and regulatory clearances around all lines and equipment	ii. Utility **meet minimum** statutory and regulatory clearances around all lines and equipment	iii. Utility **exceeds minimum** statutory and regulatory clearances around all lines and equipment
Current Year	○	○	●
by Start of 2023	○	○	●

E.IV.b Does utility meet or exceed minimum statutory or regulatory clearances during all seasons?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

E.IV.c What modeling is used to guide clearances around lines and equipment?

	i. Ignition risk modeling	ii. Ignition and propagation risk modeling	iii. None of the above
Current Year	○	○	●
by Start of 2023	○	○	●

E.IV.d What biological modeling is used to guide clearances around lines and equipment?

	i. Species growth rates and species limb failure rates	ii. Species growth rates and species limb failure rates, cross referenced with local climatological conditions	iii. None of the above

	i. Species growth rates and species limb failure rates, cross referenced with local climatological	ii. Species growth rates and species limb failure rates, cross referenced with local climatological
Current Year	○	●
by Start of 2023	○	●

E.IV.e Are community organizations engaged in setting local clearances and protocols?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

E.IV.f Does the utility remove vegetation waste along its right of way across the entire grid?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

E.IV.g How long after cutting vegetation does the utility remove vegetation waste along right of way?

	i. Not at all	ii. Longer than 1 week	iii. Within 1 week or less	iv. On the same day
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

E.IV.h Does the utility work with local landowners to provide a cost-effective use for cutting vegetation?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

E.IV.i Does the utility work with partners to identify new cost-effective uses for vegetation, taking into consideration environmental impacts and emissions of vegetation waste?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

E.V Vegetation fall-in mitigation

Capability 25

E.V.a Does the utility have a process for treating vegetation outside of

right of ways?

	i. Utility **does not remove** vegetation outside of right of way	ii. Utility **removes some** vegetation outside of right of ways	iii. Utility **systematically removes** vegetation outside of right of way	iv. Utility **systematically removes** vegetation outside of right of way, informing relevant communities of removal
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

E.V.b How is potential vegetation that may pose a threat identified?

	i. **No specific process** in place to systematically identify trees likely to pose a risk	ii. **Based on the height of trees** with potential to make contact with electric lines and equipment	iii. **Based on the probability and consequences of impact** on electric lines and equipment as **determined by risk modeling**	iv. Based on the probability and consequences of impact on electric lines and equipment as determined by risk modeling, **as well as regular and accurate systematic inspections for high-risk trees outside the right of way or environmental and climatological conditions contributing to increased risk**
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

E.V.c Is vegetation removed with cooperation from the community?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

E.V.d Does the utility remove vegetation waste outside its right of way across the entire grid?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

E.V.e How long after cutting vegetation does the utility remove vegetation waste outside its right of way?

		ii. Longer than 1	iii. Within 1 week or	iv. On the same

	i. Not at all	ii. Longer than 1 week	iii. Within 1 week or less	iv. On the same day
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

E.V.f Does the utility work with local landowners to provide a cost-effective use for cutting vegetation?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

E.V.g Does the utility work with partners to identify new cost-effective uses for vegetation, taking into consideration environmental impacts and emissions of vegetation waste?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

E.VI QA/QC for vegetation maintenance

Capability 26

E.VI.a How is contractor and employee activity audited?

	i. **Lack of controls** for auditing work completed, including inspections, for employees or subcontractors	ii. Through an established and functioning audit process to manage and confirm work completed by subcontractors	iii. Through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors, **where contractor activity is subject to semi-automated audits using technologies capable of sampling the contractor's work** (e.g., LiDAR scans, photographic evidence)	iv. Through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors, where contractor activity is subject to **automated** audits **using technologies capable of sampling the contractor's work** (e.g., LiDAR scans, photographic evidence)
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

E.VI.b Do contractors follow the same processes and standards as utility's own employees?

	i. No	ii. Yes

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

E.VI.c How frequently is QA/QC information used to identify deficiencies in quality of work performance and inspections performance?

	i. Never	ii. Sporadically	iii. On an ad hoc basis	iv. Regularly	v. Real-time
Current Year	●	○	○	○	○
by Start of 2023	●	○	○	○	○

E.VI.d How is work and inspections that do not meet utility-prescribed standards remediated?

	i. **Lack of effective remediation** for ineffective inspections or low-quality work	ii. **QA/QC information is used to identify systemic deficiencies** in quality of work and inspections	iii. QA/QC information is used to identify systemic deficiencies in quality of work and inspections, **and recommend training based on weaknesses**	iv. QA/QC information is used to identify systemic deficiencies in quality of work and inspections, **grade individuals**, and recommend **specific pre-made and tested** training based on weaknesses
Current Year	○	●	○	○
by Start of 2023	○	●	○	○

E.VI.e Are workforce management software tools used to manage and confirm work completed by subcontractors?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

F. Grid operations and protocols

F.I Protective equipment and device settings

Capability 27

F.I.a How are grid elements adjusted during high threat weather conditions?

	i. Utility **does not make changes to**	ii. Utility **increases**	iii. Utility increases sensitivity of risk reduction elements	iv. Utility increases sensitivity of risk reduction elements during high threat weather

	i. Utility does not make changes to **adjustable equipment** in response to high wildfire threat	ii. Utility **increases sensitivity of risk reduction elements** during high threat weather	iii. Utility increases sensitivity of risk reduction elements during high threat weather conditions **and monitors near**	iv. Utility increases sensitivity of risk reduction elements during high threat weather conditions **based on risk mapping** and monitors near
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

F.I.b Is there an automated process for adjusting sensitivity of grid elements and evaluating effectiveness?

Clarification: For clarification on level of automation please refer to the 'level of systematization and automation' in Table 2 of the Maturity Model. (i) in this case corresponds to level 0; (ii) corresponds to level 1 or 2; (iii) corresponds to level 3 or 4

	i. No automated process	ii. Partially automated process	iii. Fully automated process
Current Year	●	○	○
by Start of 2023	●	○	○

F.I.c Is there a predetermined protocol driven by fire conditions for adjusting sensitivity of grid elements?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

F.II Incorporating ignition risk factors in grid control

Capability 28

F.II.a Does the utility have a clearly explained process for determining whether to operate the grid beyond current or voltage designs?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

F.II.b Does the utility have systems in place to automatically track operation history including current, loads, and voltage throughout the grid at the circuit level?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

F.II.c Does the utility use predictive modeling to estimate the expected

life and make equipment maintenance, rebuild, or replacement decisions based on grid operating history, and is that model reviewed?

	i. **Modeling is not used**	ii. **Modeling is used,** but not evaluated by external experts	iii. Modeling is used, **and the model is evaluated by external experts and verified by historical data**
Current Year	●	○	○
by Start of 2023	●	○	○

F.II.d When does the utility operate the grid above rated voltage and current load?

	i. During any conditions	ii. Only in conditions that are unlikely to cause wildfire	iii. Never
Current Year	○	○	●
by Start of 2023	○	○	●

F.III PSPS op. model and consequence mitigation

Capability 29

F.III.a How effective is PSPS event forecasting?

	i. PSPS event **frequently forecasted incorrectly**	ii. PSPS event **generally forecasted accurately with fewer than 50% of predictions being false positives**	iii. PSPS event generally forecasted accurately with **fewer than 33%** of predictions being false positives	iv. PSPS event generally forecasted accurately with **fewer than 25%** of predictions being false positives
Current Year	○	●	○	○
by Start of 2023	○	●	○	○

F.III.b What share of customers are communicated to regarding forecasted PSPS events?

	i. Affected customers are **poorly communicated to**, with a significant portion not communicated to at all	ii. PSPS event are communicated to **>95% of affected customers and >99% of medical baseline customers** in advance of PSPS action	iii. PSPS event are communicated to **>98% of affected customers and >99.5% of medical baseline customers** in advance of PSPS action	iv. PSPS event are communicated to **>99% of affected customers and >99.9% of medical baseline customers** in advance of PSPS action
Current Year	○	○	○	○
by Start of 2023	○	○	○	○

	i. Affected customers are **poorly communicated to**, with a significant portion not communicated	ii. PSPS event are communicated to **>95% of affected customers and >99% of medical baseline customers** in advance of PSPS	iii. PSPS event are communicated to **>98% of affected customers and >99.5% of medical baseline customers** in advance of PSPS action	iv. PSPS event are communicated to **>99% of affected customers and >99.9% of medical baseline customers** in advance of	v. PSPS event are communicated to **>99.9% of affected customers and 100% of medical baseline customers** in advance of PSPS action
Current Year				●	
by Start of 2023				●	

F.III.c During PSPS events, what percent of customers complain?

	i. 1% or more	ii. Less than 1%	iIi. Less than 0.5%
Current Year	○	○	●
by Start of 2023	○	○	●

F.III.d During PSPS events, does the utility's website go down?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

F.III.e During PSPS events, what is the average downtime per customer?

	i. More than 1 hour	ii. Less than 1 hour	iii. Less than 0.5 hours	iv. Less than 0.25 hours	v. Less than 0.1 hours
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

F.III.f Are specific resources provided to customers to alleviate the impact of the power shutoff (e.g., providing backup generators, supplies, batteries, etc.)?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

F.IV Protocols for PSPS invitation

Capability 30

F.IV.a Does the utility have explicit thresholds for activating a PSPS?

	iii. Utility has explicit policies and explanation for the thresholds above which PSPS is activated, **but maintains grid in sufficiently low risk condition to not require any PSPS activity, though may de-**
Current Year	○
by Start of 2023	○

	i. Utility has **no clearly explained threshold** for PSPS activation	ii. Utility **has explicit policies and explanation** for the thresholds above which PSPS is activated as a measure of last resort	iii. Utility **has explicit policies and explanation** for the thresholds above which PSPS is activated as a measure of last resort
Current Year	○	○	●
by Start of 2023	○	○	●

F.IV.b Which of the following does the utility take into account when making PSPS decisions? Select all that apply

	i. SME opinion	ii. A partially automated system which recommends circuits for which PSPS should be activated and is validated by SMEs
Current Year	■	□
by Start of 2023	■	□

F.IV.c Under which circumstances does the utility de-energize circuits? Select all that apply.

	i. Upon detection of damaged conditions of electric equipment	ii. When circuit presents a safety risk to suppression or other personnel	iii. When equipment has come into contact with foreign objects posing ignition risk	iv. Additional reasons not listed
Current Year	■	■	■	□
by Start of 2023	■	■	■	□

F.IV.d Given the condition of the grid, with what probability does the utility expect any large scale PSPS events affecting more than 10,000 people to occur in the coming year?

Clarification: For the 'Current Year' response option, please take “the coming year” as 2021. For the ‘by Start of 2023' response option, please take “the coming year” as 2023.

	i. Less than 5 % - Grid is in sufficiently low risk condition that PSPS events will not be required, and the only circuits which may require de- energization have sufficient redundancy that energy supply to customers will not be disrupted	ii. Greater than 5% - Grid condition paired with risk indicates that PSPS may be necessary in 2021 in some areas
Current Year	●	○
by Start of 2023	●	○

F.V Protocols for PSPS re-energization

Capability 31

F.V.a Is there a process for inspecting de-energized sections of the grid

prior to re- energization?

	i. **Inadequate process** for inspecting de- energized sections of the grid prior to re- energization	ii. **Existing process** for accurately inspecting de-energized sections of the grid prior to re-energization	iii. Existing process for accurately inspecting de-energized sections of the grid prior to re-energization, **augmented with sensors and aerial tools**
Current Year	○	○	●
by Start of 2023	○	○	●

F.V.b How automated is the process for inspecting de-energized sections of the grid prior to re-energization?

Clarification: For explanation on level of automation please refer to the 'level of systematization and automation' in Table 2 of the Maturity Model. (i) in this case corresponds to level 0; (ii) corresponds to level 1 or 2; (iii) corresponds to level 3; and (iv) corresponds to level 4

	i. Manual process, not automated at all	ii. Partially automated (<50%)	iii. Mostly automated (≥50%)	iv. Primarily automated, minimal manual inputs
Current Year	○	○	○	●
by Start of 2023	○	○	○	●

F.V.c What is the average amount of time that it takes you to re-energize your grid from a PSPS once weather has subsided to below your de-energization threshold?

	i. Longer than 24 hours	ii. Within 24 hours	iii. Within 18 hours	iv. Within 12 hours	v. Within 8 hours
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

F.V.d What level of understanding of probability of ignitions after PSPS events does the utility have across the grid?

	i. No probability estimate of after event ignitions	ii. Some probability estimates exist	iii. Utility has accurate quantitative understanding of ignition risk following re-energization, by asset, validated by historical data and near misses
Current Year	○	○	●
by Start of 2023	○	○	●

F.VI Ignition prevention and suppression

Capability 32

F.VI.a Does the utility have defined policies around the role of workers in

F.VI.a Does the utility have defined policies around the role of workers in suppressing ignitions?

	i. Utility has **no policies** governing what crews' roles are in suppressing ignitions	ii. Utilities have **explicit policies** about the role of crews at the site of ignition	iii. Utilities have explicit policies about the role of crews, **including contractors and subcontractors**, at the site of ignition
Current Year	●	○	○
by Start of 2023	○	○	●

F.VI.b What training and tools are provided to workers in the field?

	i. Crews are **untrained**	ii. **Training and communications tools** are provided to **immediately report ignitions** caused by workers or in immediate vicinity of workers	iii. All criteria in option (ii) met; In addition, **suppression tools** and training to **suppress small ignitions** caused by workers or in immediate vicinity of workers are provided	iv. All criteria in option (iii) met; In addition, communication tools function without cell reception and training **by suppression professionals** is provided	v. All criteria in option (iv) met and apply to contractors as well as utility workers
Current Year	○	○	○	●	○
by Start of 2023	○	○	○	●	○

F.VI.c In the events where workers have encountered an ignition, have any Cal/OSHA reported injuries or fatalities occurred in in the last year?

Clarification: For this year, please identify whether any major injuries or fatalities have occurred in 2020. For three years from now, please specify whether you think there is a chance that major injuries or fatalities could occur in 2023.

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

F.VI.d Does the utility provide training to other workers at other utilities and outside the utility industry on best practices to minimize, report and suppress ignitions?

Clarification: An example of workers outside utility industry might be workers at a vegetation management company who prune trees near utility equipment

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

G. Data governance

G.I Data collection and curation

Capability 33

G.I.a Does the utility have a centralized database of situational, operational, and risk data?

Clarification: Question is asking whether utility centralizes most of its situational, operational, and risk data in a single database

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

G.I.b Is the utility able to use advanced analytics on its centralized database of situational, operational, and risk data to make operational and investment decisions?

Clarification: In this case, advanced analytics refers to analysis integrating different types of data from this centralized database in a sufficiently reliable way to create a detailed, quantitative and holistic picture of tradeoffs to be weighed in operational or investment decisions

	i. No	ii. Yes, **but only for short term decision making**	iii. Yes, **for both short term and long-term decision making**
Current Year	●	○	○
by Start of 2023	○	○	●

G.I.c Does the utility collect data from all sensored portions of electric lines, equipment, weather stations, etc.?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

G.I.d Is the utility's database of situational, operational, and risk data able to ingest and share data using real-time API protocols with a wide variety of stakeholders?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

G.I.e Does the utility identify highest priority additional data sources to improve decision making?

	i. No	ii. Yes	iii. Yes, with plans to incorporate these into centralized database of situational, operational and risk data
Current Year	●	○	○
by Start of 2023	●	○	○

G.I.f Does the utility share best practices for database management and use with other utilities in California and beyond?

	i. No	ii. Yes	iii. Yes, with specific processes to do so in place
Current Year	●	○	○
by Start of 2023	●	○	○

G.II Data transparency and analytics

Capability 34

G.II.a Is there a single document cataloguing all fire-related data and algorithms, analyses, and data processes?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

G.II.b Is there an explanation of the sources, cleaning processes, and assumptions made in the single document catalog?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

G.II.c Are all analyses, algorithms, and data processing explained and documented? Is there a system for sharing data in real time across multiple levels of permissions?

	i. Analyses, algorithms, and	iii. Analyses, algorithms, and	iv. Analyses, algorithms, and data processing are documented and explained, **including sensitivities for**

	i. Analyses, algorithms, and data processing **are not** documented	ii. Analyses, algorithms, and data processing **are** documented	iii. Analyses, algorithms, and data processing are documented **and explained**	iv. **Analyses of each type of analysis and** data processing are documented and explained, **including sensitivities for**
Current Year	●	○	○	○
by Start of 2023	○	●	○	○

G.II.d Is there a system for sharing data in real time across multiple levels of permissions?

	i. No system capable of sharing data in real time across multiple levels of permissions	ii. System is capable of sharing across at least two levels of permissions, including a.) utility-regulator permissions, and b.) first responder permissions	iii. System is capable of sharing across at least three levels of permissions, including a.) utility- regulator permissions, b.) first responder permissions, and c.) public data sharing
Current Year	●	○	○
by Start of 2023	●	○	○

G.II.e Are the most relevant wildfire related data algorithms disclosed?

Clarification: Question is asking whether all algorithms or decision making process used to inform decision making around investment choices, risk mitigation choices, and emergency response are disclosed

	i. No	ii. **Yes, disclosed to regulators and other relevant stakeholders upon request**	iii. Yes, **disclosed publicly in WMP upon request**	iv. Disclosed publicly **as information becomes available (regardless of regulatory request)**
Current Year	○	○	●	○
by Start of 2023	○	○	●	○

G.III Near-miss tracking

Capability 35

G.III.a Does the utility track near miss data for all near misses with wildfire ignition potential?

Clarification: Recall that near miss is defined as an event with significant probability of ignition, including wires down, contacts with objects, line slap, events with evidence of significant heat generation, and other events that cause sparking or have the potential to cause ignition.

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

G.III.b Based on near miss data captured, is the utility able to simulate wildfire potential given an ignition based on event characteristics, fuel loads, and moisture?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

G.III.c Does the utility capture data related to the specific mode of failure when capturing near- miss data?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

G.III.d Is the utility able to predict the probability of a near miss in causing an ignition based on a set of event characteristics?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

G.III.e Does the utility use data from near misses to change grid operation protocols in real time?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

G.IV Data sharing with the research community

Capability 36

G.IV.a Does the utility make disclosures and share data?

Clarification: In this case, 'disclosures' refer to disclosures to the CPUC and to the public

	i. Utility **fails to make disclosures**	ii. Utility **makes required disclosures**, but does not share data beyond what is required	iii. Utility makes required disclosures **and shares data beyond what is required**
Current Year	○	●	○
by Start of 2023	○	●	○

G.IV.b Does the utility in engage in research?

Clarification: Here, 'research' broadly refers to collaborative research (e.g. with other

utilities, academics, or the government) or to independent research where the findings are made available outside parties (such as academics, other utilities, the government or the public).

	i. Utility **does not participate** in collaborative research	ii. Utility **participates** in collaborative research	iii. Utility **funds** and participates in both independent and collaborative research	iv. Utility funds and participates in both independent and collaborative research, **and ensures that research, where possible, is abstracted and applied to other utilities**
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

G.IV.c What subjects does utility research address?

	i. Utility ignited wildfires	ii. Utility ignited wildfires **and risk reduction initiatives**	iii. None of the above
Current Year	○	○	●
by Start of 2023	○	○	●

G.IV.d Does the utility promote best practices based on latest independent scientific and operational research?

Clarification: Promoting best practices could take various forms – for example, writing and publicly releasing a report or detailing results achieved when a new method of tool was piloted, including which techniques were more or less effective

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

H. Resource allocation methodology

H.I Scenario analysis across different risk levels

Capability 37

H.I.a For what risk scenarios is the utility able to provide projected cost and total risk reduction potential?

	i. Utility does not project proposed initiatives or	ii. Utility provides an accurate high- risk reduction and low risk reduction scenario, and	iii. Utility provides an accurate high- risk reduction and low risk reduction scenario, in addition to their proposed scenario, and the

	i. Utility does not project costs across different levels of risk scenarios	ii. Utility provides an accurate high- risk reduction and low risk reduction scenario, and the projected cost and total risk reduction potential	iii. Utility provides an accurate high- risk reduction and low risk reduction scenario, in addition to their proposed scenario, and the projected cost and total risk reduction potential
Current Year	●	○	○
by Start of 2023	●	○	○

H.I.b For what level of granularity is the utility able to provide projections for each scenario?

	i. Territory-level or greater	ii. Region level	iii. Circuit level	iv. Span level	v. Asset level
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

H.I.c Does the utility include a long term (e.g., 6-10 year) risk estimate taking into account macro factors (climate change, etc.) as well as planned risk reduction initiatives in its scenarios?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

H.I.d Does the utility provide an estimate of impact on reliability factors in its scenarios?

Clarification: Reliability factors here refer to factors impacting reliability of service to customers

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

H.II Presentation of relative risk spend efficiency for portfolio of initiatives

Capability 38

H.II.a Does the utility present accurate qualitative rankings for its initiatives by risk spend efficiency?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

H.II.b What initiatives are captured in the ranking of risk spend efficiency?

	i. Common commercial	ii. All commercial	iii. All commercial initiatives and	iv. None of the

	i. Common commercial initiatives	ii. All commercial initiatives	iii. All commercial initiatives and emerging initiatives	iv. None of the above
Current Year	○	○	○	●
by Start of 2023	○	○	○	●

H.II.c Does the utility include figures for present value cost and project risk reduction impact of each initiative, clearly documenting all assumptions (e.g. useful life, discount rate, etc.)?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

H.II.d Does the utility provide an explanation of their investment in each particular initiative?

Clarification: Reliability factors here refer to factors impacting reliability of service to customers

	i. No	ii. **Yes, including the expected overall reduction in risk**	iii. Yes, including the expected overall reduction in risk **and estimates of impact on reliability factors**
Current Year	○	●	○
by Start of 2023	○	●	○

H.II.e At what level of granularity is the utility able to provide risk efficiency figures?

	i. Territory-level or greater	ii. Region level	iii. Circuit level	iv. Span level	v. Asset level
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

H.III Process for determining risk spend efficiency of vegetation management initiatives

Capability 39

H.III.a How accurate of a risk spend efficiency calculation can the utility provide?

	i. Utility has **no clear understanding** of the relative risk spend efficiency of various clearances and types of vegetation management initiatives	ii. Utility has **an accurate relative understanding** of the cost and effectiveness to **produce a reliable risk spend efficiency estimate**	iii. Utility has accurate **quantitative** understanding of cost and effectiveness to produce a reliable risk spend efficiency estimate	iv. Utility has accurate quantitative understanding of cost, **including sensitivities** and effectiveness to produce a reliable risk spend efficiency estimate

	i. Utility has **no clear understanding** of the relative risk	ii. Utility has **an accurate relative understanding** of	iii. Utility has accurate **quantitative**	iv. Utility has accurate quantitative understanding of
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

H.III.b At what level can estimates be prepared?

	i. Less granular than regional, or not at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

H.III.c How frequently are estimates updated?

	i. Never	ii. Less frequently than annually	iii. Annually or more frequently
Current Year	●	○	○
by Start of 2023	●	○	○

H.III.d What vegetation management initiatives does the utility include within its evaluation?

	i. None	ii. Some	iii. Most	iv. All	v. All, supported by independent testing
Current Year	●	○	○	○	○
by Start of 2023	●	○	○	○	○

H.III.e Can the utility evaluate risk reduction synergies from combination of various initiatives?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

H.IV Process for determining risk spend efficiency of system hardening initiatives

Capability 40

H.IV.a How accurate of a risk spend efficiency calculation can the utility provide?

	i. Utility has **no clear understanding** of	ii. Utility has an accurate **relative understanding** of the cost and effectiveness to **produce a**	iii. Utility has accurate **quantitative** understanding of cost and effectiveness to	iv. Utility has accurate quantitative understanding of cost, **including sensitivities** and effectiveness to
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

	i. Utility has **no clear understanding** of the relative risk spend efficiency of hardening initiatives	ii. Utility has an accurate **relative understanding** of the cost and effectiveness to **produce a reliable risk spend efficiency estimate**	iii. Utility has accurate **quantitative** understanding of cost and effectiveness to produce a reliable risk spend efficiency estimate	iv. Utility has accurate quantitative understanding of cost, **including sensitivities** and effectiveness to produce a reliable risk spend efficiency estimate
Current Year	○	●	○	○
by Start of 2023	○	○	○	●

H.IV.b At what level can estimates be prepared?

	i. Less granular than regional, or not at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

H.IV.c How frequently are estimates updated?

	i. Never	ii. Less frequently than annually	iii. Annually or more frequently
Current Year	○	●	○
by Start of 2023	○	○	●

H.IV.d What grid hardening initiatives are included in the utility risk spend efficiency analysis?

	i. None	ii. **Some commercially available** grid hardening initiatives	iii. **Most** commercially available grid hardening initiatives	iv. **All** commercially available grid hardening initiatives	v. All commercially available grid hardening initiatives, **as well as those initiatives that are lab tested**
Current Year	●	○	○	○	○
by Start of 2023	●	○	○	○	○

H.IV.e Can the utility evaluate risk reduction effects from the combination of various initiatives?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

H.V Portfolio-wide initiative allocation methodology

Capability 41

H.V.a To what extent does the utility allocate capital to initiatives based on risk-spend efficiency (RSE)?

	iii. Accurate RSE

	i. Utility does not base capital allocation on RSE	ii. Utility considers estimates of RSE when allocating capital	iii. Accurate RSE estimates for all initiatives are used to determine capital allocation within categories only (e.g. to choose the best vegetation management initiative)	iv. Accurate RSE estimates for all initiatives are used to determine capital allocation across portfolio (e.g. prioritizing between vegetation management and grid hardening)
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

H.V.b What information does the utility take into account when generating RSE estimates?

	i. Average estimate of RSE by initiative category	ii. Specific information by initiative, including state of equipment and location where initiative will be implemented	iii. Specific information by initiative at the asset level, including state of specific assets and location where initiative will be implemented
Current Year	○	●	○
by Start of 2023	○	●	○

H.V.c How does the utility verify RSE estimates?

	i. Utility does not verify RSE estimates	i. RSE estimates are verified by historical or experimental pilot data	iii. RSE estimates are verified by historical or experimental pilot data and confirmed by independent experts or other utilities in CA
Current Year	●	○	○
by Start of 2023	●	○	○

H.V.d Does the utility take into consideration impact on safety, reliability, and other priorities when making spending decisions?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

H.VI Portfolio-wide innovation in new wildfire initiatives

Capability 42

H.VI.a How does the utility develop and evaluate the efficacy of new wildfire initiatives?

			iii. Utility uses	iv. Utility uses pilots, followed by

	i. No program in place	ii. Utility uses **pilots and measures** direct reduction in ignition events	iii. Utility uses **pilots and measures** direct reduction in ignition events and near-misses.	iv. Utility uses pilots, followed by in-field testing measuring reduction in ignition events and near-misses.
Current Year	i. No program in place	ii. Utility uses **pilots and measures** direct reduction in ignition events	iii. Utility uses **pilots and measures** direct reduction in ignition events and near-misses.	iv. Utility uses pilots, followed by in-field testing measuring reduction in ignition events and near-misses.
by Start of 2023				

H.VI.b How does the utility develop and evaluate the risk spend efficiency of new wildfire initiatives?

Clarification: TCO is total cost of ownership over the expected useful life of an asset, including purchase, operation and maintenance. In this question, total cost of ownership refers to the spend portion of the evaluation of risk spend efficiency, while risk reduction is evaluated separately.

	i. No program in place	ii. Utility uses **total cost of ownership**
Current Year		
by Start of 2023		

H.VI.c At what level of granularity does the utility measure the efficacy of new wildfire initiatives?

	i. None	ii. Entire territory	iii. Circuit	iv. Span	v. Asset
Current Year					
by Start of 2023					

H.VI.d Are the reviews of innovative initiatives audited by independent parties?

Clarification: Reviews here refer to findings evaluating innovative initiatives which would assist another utility in making a decision about whether to implement that initiative and help them determine how to do so effectively. Criteria might include but are not limited to the following: technical feasibility, effectiveness, risk spend efficiency, ease of implementation and comparison to alternative options

	i. None	ii. Yes
Current Year		
by Start of 2023		

H.VI.e Does the utility share the findings of its evaluation of innovative initiatives with other utilities, academia, and the general public?

	i. None	ii. Yes
Current Year		
by Start of 2023		

I. Emergency planning and preparedness

I.I Wildfire plan integrated with overall disaster/ emergency plan

Capability 43

I.I.a Is the wildfire plan integrated with overall disaster and emergency plans?

Clarification: If the utility's wildfire mitigation plan is an integrated component of an overall disaster and emergency plan then the overall plan considers at least the compound effects of risks in both directions – for example, the additional risk of fire posed by an earthquake and how to manage any compounding effects

	i. No	ii. **Wildfire plan is a component of overall plan**	iii. Wildfire plan is an **integrated component** of overall plan
Current Year	○	○	●
by Start of 2023	○	○	●

I.I.b Does the utility run drills to audit the viability and execution of its wildfire plans?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

I.I.c Is the impact of confounding events or multiple simultaneous disasters considered in the planning process?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

I.I.d Is the plan integrated with disaster and emergency preparedness plans of other relevant stakeholders (e.g., CAL FIRE, Fire Safe Councils, etc.)?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

I.I.e Does the utility take a leading role in planning, coordinating, and integrating plans across stakeholders?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

I.II Plan to restore service after wildfire related outage

Capability 44

I.II.a Are there detailed and actionable procedures in place to restore service after a wildfire related outage?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

I.II.b Are employee and subcontractor crews trained in, and aware of, plans?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

I.II.c To what level are procedures to restore service after a wildfire-related outage customized?

	i. Territory-wide	ii. Region level	iii. Circuit level	iv. Span level	v. Asset level
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

I.II.d Is the customized procedure to restore service based on topography, vegetation, and community needs?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

I.II.e Is there an inventory of high risk spend efficiency resources available for repairs?

Clarification: Question is asking whether the resources, components and tools that the utility has available for repairs, maintenance, and unexpected replacement are the most risk spend efficient options on the market

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

I.III Emergency community engagement during and after wildfire

Capability 45

I.III.a Does the utility provide clear and substantially complete communication of available information relevant to affected customers?

Clarification: Does the utility provide all available information which could be relevant to affected customers in a way that customers can receive in real time and easily understand?

	i. No	ii. Yes	iii. Yes, **along with referrals to other agencies**
Current Year	○	●	○
by Start of 2023	○	●	○

I.III.b What percent of affected customers receive complete details of available information?

	i. ≤95% of customers	ii. >95% of customers	iii. >98% of customers	iv. >99% of customers	v. >99.9% of customers
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

I.III.c What percent of affected medical baseline customers receive complete details of available information?

	i. ≤99% of medical baseline customers	ii. >99% of medical baseline customers	iii. >99.5% of medical baseline customers	iv. >99.9% of medical baseline customers	v. 100% of medical baseline customers
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

I.III.d How does the utility assist where helpful with communication of information related to power outages to customers?

	i. Through availability of relevant evacuation information and links on website and toll-free telephone number	ii. Through availability of relevant evacuation information and links on website and toll-free telephone number, **and assisting disaster response professionals as requested**	iii. None of the above
Current Year	○	●	
by Start of 2023	○	●	

	i. Through availability of	ii. Through availability of relevant evacuation information and links on website and toll-free
Current Year	○	●
by Start of 2023	○	●

I.III.e How does the utility engage with other emergency management agencies during emergency situations?

	i. Utility does not engage with other agencies	ii. **Utility engages with other agencies in an ad hoc manner**	iii. Utility **has detailed and actionable established protocols for engaging** with emergency management organizations
Current Year	○	●	○
by Start of 2023	○	○	●

I.III.f Does the utility communicate and coordinate resources to communities during emergencies (e.g., shelters, supplies, transportation etc.)?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

I.IV Protocols in place to learn from wildfire events

Capability 46

I.IV.a Is there a protocol in place to record the outcome of emergency events and to clearly and actionably document learnings and potential process improvements?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

I.IV.b Is there a defined process and staff responsible for incorporating learnings into emergency plan?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

I.IV.c Once updated based on learnings and improvements, is the updated plan tested using "dry runs" to confirm its effectiveness?

	i. No	ii. Yes

	i. No	ii. Yes
Current Year		
by Start of 2023	○	●

I.IV.d Is there a defined process to solicit input from a variety of other stakeholders and incorporate learnings from other stakeholders into the emergency plan?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

I.V Processes for continuous improvement after wildfire and PSPS events

Capability 47

I.V.a Does the utility conduct an evaluation or debrief process after a wildfire?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

I.V.b Does the utility conduct a customer survey and utilize partners to disseminate requests for stakeholder engagement?

	i. No	ii. One or the other	iii. Both
Current Year	●	○	○
by Start of 2023	●	○	○

I.V.c In what other activities does the utility engage?

	i. None	ii. Public listening sessions	iii. Debriefs with partners	iv. Public listening sessions, debriefs with partners, and others
Current Year	●	○	○	○
by Start of 2023	●	○	○	○

I.V.d Does the utility share with partners findings about what can be improved?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

I.V.e Are feedback and recommendations on potential improvements made public?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

I.V.f Does the utility conduct proactive outreach to local agencies and organizations to solicit additional feedback on what can be improved?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

I.V.g Does the utility have a clear plan for post-event listening and incorporating lessons learned from all stakeholders?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

I.V.h Does the utility track the implementation of recommendations and report upon their impact?

Clarification: Recommendations here refer to recommendations from customers, local agencies, organizations and other stakeholders received following a wildfire or PSPS event

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

I.V.i Does the utility have a process to conduct reviews after wildfires in other the territory of other utilities and states to identify and address areas of improvement?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

J. Stakeholder cooperation and community engagement

J.I Cooperation and best practice sharing with other utilities

utilities

Capability 48

J.I.a Does the utility actively work to identify best practices from other utilities through a clearly defined operational process?

	i. No	ii. Yes, from other California utilities	ii. Yes, from other global utilities
Current Year	●	○	○
by Start of 2023	○	●	○

J.I.b Does the utility successfully adopt and implement best practices identified from other utilities?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

J.I.c Does the utility seek to share best practices and lessons learned in a consistent format?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

J.I.d Does the utility share best practices and lessons via a consistent and predictable set of venues/media?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

J.I.e Does the utility participate in annual benchmarking exercises with other utilities to find areas for improvement?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

J.I.f Has the utility implemented a defined process for testing lessons learned from other utilities to ensure local applicability?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

J.II Engagement with communities on utility wildfire mitigation initiatives

Capability 49

J.II.a Does the utility have a clear and actionable plan to develop or maintain a collaborative relationship with local communities?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	○	●

J.II.b Are there communities in HFTD areas where meaningful resistance is expected in response to efforts to mitigate fire risk (e.g. vegetation clearance)?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

J.II.c What percent of landowners are non-compliant with utility initiatives (e.g., vegetation management)?

	i. More than 5%	ii. Less than 5%	iii. Less than 2%	iv. Less than 1%	v. Less than 0.5%
Current Year	○	○	○	○	●
by Start of 2023	○	○	○	○	●

J.II.d What percent of landowners complain about utility initiatives (e.g., vegetation management)?

	i. More than 5%	ii. Less than 5%	iii. Less than 2%	iv. Less than 1%	v. Less than 0.5%
Current Year	○	○	○	●	○
by Start of 2023	○	○	○	●	○

J.II.e Does the utility have a demonstratively cooperative relationship with communities containing >90% of the population in HFTD areas (e.g. by being recognized by other agencies as having a cooperative relationship with those communities in HFTD areas)?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

J.II.f Does utility have records of landowners throughout communities containing >90% of the population in HFTD areas reaching out to notify of risks, dangers or issues in the past year?

Clarification: For this year, please identify whether the question holds true for 2020. For three years from now, specify whether you expect the question to hold true in 2023.

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

J.III Engagement with LEP and AFN populations

Capability 50

J.III.a Can the utility provide a plan to partner with organizations representing Limited English Proficiency (LEP) and Access & Functional Needs (AFN) communities?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

J.III.b Can the utility outline how these partnerships create pathways for implementing suggested activities to address the needs of these communities?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

J.III.c Can the utility point to clear examples of how those relationships have driven the utility's ability to interact with and prepare LEP & AFN communities for wildfire mitigation activities?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

J.III.d Does the utility have a specific annually-updated action plan further reduce wildfire and PSPS risk to LEP & AFN communities?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

	i. No	ii. Yes
by Start of 2023	○	●

J.IV. Collaboration with emergency response agencies

Capability 51

J.IV.a What is the cooperative model between the utility and suppression agencies?

	i. Utility **does not sufficiently cooperate** with suppression agencies	ii. Utility **cooperates with suppression agencies** by notifying them of ignitions	iii. Utility cooperates with suppression agencies by **working cooperatively with them to detect ignitions**, in addition to notifying them of ignitions as needed
Current Year	○	○	●
by Start of 2023	○	○	●

J.IV.b In what areas is the utility cooperating with suppression agencies

	i. High risk areas	ii. All areas under utility control	iii. Throughout utility service areas	iv. None of the above
Current Year	○	●	○	○
by Start of 2023	○	●	○	○

J.IV.c Does the utility accurately predict and communicate the forecasted fire propagation path using available analytics resources and weather data?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

J.IV.d Does the utility communicate fire paths to the community as requested?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

J.IV.e Does the utility work to assist suppression crews logistically, where possible?

	i. No	ii. Yes
Current Year	○	●
by Start of 2023	○	●

J.V. Collaboration on wildfire mitigation planning with stakeholders

Capability 52

J.V.a Where does the utility conduct substantial fuel management?

	i. Utility **does not conduct** fuel management	ii. Utility conducts fuel management **along rights of way**	iii. Utility conducts fuel management throughout **service area**
Current Year	●	○	○
by Start of 2023	●	○	○

J.V.b Does the utility engage with other stakeholders as part of its fuel management efforts?

	i. Utility **does not coordinate** with broader fuel management efforts by other stakeholders	ii. Utility **shares fuel management plans** with other stakeholders	iii. Utility shares fuel management plans with other stakeholders **and works with other stakeholders conducting fuel management concurrently**	iv. Utility shares fuel management plans with other stakeholders, **and coordinates fuel management activities, including adjusting plans, to cooperate with other stakeholders state-wide to focus on areas that would have the biggest impact in reducing wildfire risk**	v. Utility shares fuel management plans with other stakeholders, and **pro-actively** coordinates fuel management activities, including adjusting plans, to cooperate with other stakeholders state-wide to focus on areas that would have the biggest impact in reducing wildfire risk
Current Year	●	○	○	○	○
by Start of 2023	●	○	○	○	○

J.V.c Does the utility cultivate a native vegetative ecosystem across territory that is consistent with lower fire risk?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

J.V.d Does the utility fund local groups (e.g., fire safe councils) to support fuel management?

	i. No	ii. Yes
Current Year	●	○
by Start of 2023	●	○

J.V.e Do you have any additional comments?

Trans Bay operates a transmission-only system without any distribution lines. Trans Bay does not operate within any high fire threat areas, wildlands, or wildland urban interfaces, but does operate adjacent to a Tier II (Elevated) high fire threat area. As Trans Bay's transmission infrastructure is all underground or submerged except for its two substations, weather has minimal impact on operations. Trans Bay also does not have any retail or distribution customers. As such many of the questions in this survey are not specifically applicable to Trans Bay. Trans Bay notes that in lieu of 'Not Applicable' being available as a response, the most appropriate response available was selected.