PACIFIC GAS AND ELECTRIC COMPANY
Wildfire Mitigation Plans Discovery 2022
Data Response

PG&E Data Request No.:	OEIS_003-Q05		
PG&E File Name:	WMP-Discovery2022_DR_OEIS_003-Q05		
Request Date:	March 4, 2022	Requester DR No.:	OEIS-PG&E-22-003
Date Sent:	March 10, 2022	Requesting Party:	Office of Energy Infrastructure Safety
PG&E Witness:		Requester:	Kevin Miller

SUBJECT: PACIFIC GAS & ELECTRIC SUBMISSION OF 2022 WILDFIRE MITIGATION PLAN
MATURITY MODEL ASSESSMENT SURVEY (DOCKET #2022-WMPs)
Q01-Q04 – VEGETATION MANAGEMENT
Q05 2022 MATURITY QUESTIONS

QUESTION 05

In data request OEIS-PG&E-22-002, Energy Safety asked PG&E to answer 41 2022
Maturity Survey questions it said it benchmarked through consultation with other utilities
in 2022 by the same standard of interpretation it used to answer the same 41 questions
in 2021 and 2020. In its response, PG&E indicated that,

> "We cannot, however, go back in time to determine how we would have
> answered the same question in 2020 or 2021 in light of changes that
> have occurred since that time."

Energy Safety understands that PG&E cannot go back in time to change its answers
from 2021 or 2020, and that other factors have changed, however Energy Safety is
asking PG&E to answer those questions in the same way in 2022 as they did in 2021
and 2020 in order to understand the true progression of PG&E's maturity not attributed
to re-interpretation of questions. Prior to benchmarking its 2022 answers with other
utilities and re-interpreting these questions, what was PG&E's answer to those
questions?

Answer 05

In the table below, we have listed each of the 41 survey questions that we benchmarked
with the other utilities, the question text, and 2022 current and future state score. We
then indicate in the following columns:

1. <u>Change in Score</u>: Whether there was a change in score from the 2021 WMP
   survey to the 2022 WMP survey. If the score did not change between 2021 and
   2022, there was no change as a result of our interpretation of the survey question
   or benchmarking and thus subsequent columns are marked "not applicable."

2. <u>Change Due to Interpretation/Benchmarking</u>: If there was a change in score, in
   this column we indicate whether that change was a result of our 2022

interpretation of the survey question and/or benchmarking with the other utilities. Changes to the scores may also have been a result of changes that occurred in 2021, for example the development of our risk models. If there is a change in scores resulting from events which occurred in 2021, for example a change in risk modeling, this column would indicate "No" because the change did not result from our interpretation or benchmarking.

3. <u>Reason for Change</u>: In this column, we identify the reason for the change. For example, if the change was because of how we interpreted climate and weather in the survey question (Survey Question A.I.c), we indicate the reason in this column as being "climate vs. weather." If, on the other hand, the change in score was due to improved risk modeling capabilities, that is indicated in the column.

4. <u>Using the 2020 and 2021 Maturity Model Methodology - Current and Future State Scores</u>: These two columns indicate the scores that would have resulted using the interpretation and non-benchmarking approach that we used for the 2020 and 2021 surveys.

In our response to OEIS_002-Q01, we provided a detailed explanation of the basis for the 2022 score for each of these 41 survey questions. Rather than repeat that information in the table below, we are incorporating that information by reference as a more detailed explanation of the basis for each 2022 survey score for the 41 identified questions.

We fully support Energy Safety's interest in understanding through the utilities' respective survey responses year-over-year progress and are hopeful that these responses facilitate that understanding. Each survey question and response involve a fair amount of detail and so PG&E would be happy to meet with Energy Safety and walk through each 2022 survey response and explain the basis for the response. This may also provide an opportunity to discuss ambiguity in certain survey questions. PG&E would also welcome a meeting with all of the utilities and Energy Safety to discuss each utility's understanding of and approach to the survey questions so that the utilities and Energy Safety can develop a common understanding of the survey.

#	2022 Maturity Survey Question Number	2022 Maturity Survey Question Text	2022 Current State Score	2022 Future State Score	Change in Score(s)	Change Due to Interpretation/ Benchmarking	Reason for Change	Using the 2020 and 2021 Maturity Model Methodology - Current State Score	Using the 2020 and 2021 Maturity Model Methodology - Future State Score
1	A.I.c	How granular is utility's ability to model scenarios	4	4	Yes	Yes	The question asks how climate scenarios and weather patterns are modeled and accounted for. The comingling of weather and climate in the capability description is confusing. In 2022, in alignment with the other utilities, we are answering the A.I questions under the assumption that they are intended to address if and how PG&E is using long-term weather data to better characterize and manage the risk of utility-caused wildfire ignition as opposed to a climate forecast at a certain year in the future (e.g., 2050).	2	3
2	A.I.e	What additional information is used to estimate model weather scenarios and their risk?	5	5	Yes	Yes	The question asks how climate scenarios and weather patterns are modeled and accounted for. The comingling of weather and climate in the capability description is confusing. In 2022, in alignment with the other utilities, we are answering the A.I questions under the assumption that they are intended to address if and how PG&E is using long-term weather data to better characterize and manage the risk of utility-caused wildfire ignition as	2	3

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							opposed to a climate forecast at a certain year in the future (e.g., 2050).		
3	A.II.e	What confidence interval, in percent, does the utility use in its wildfire risk assessments?	2	2	Yes	No	Increase in modeling capabilities to develop the 20% concentration factor metric. As mentioned in the survey response, PG&E measures the confidence of a risk model output as the X% confident that Y amount of risk is concentrated in the top 20% of pixels identified by the model output. The WDRM v3 model currently has a concentration factor of 4:1 in the top 20% of prioritized locations. This corresponds to concentration percentage of 80%. PG&E recommends that the OEIS modeling workshop address and refine this metric so that all utilities are reporting consistently.	2	2
4	A.III.e	How granular is the ignition risk estimation process?	5	5	Yes	No	Increase in modeling capabilities to include asset level predictions.	5	5

Internal

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5	C.III.b	What level of redundancy does the utility's distribution architecture have?	2	2	Yes	Yes	Interpretation of redundancy at distribution level	1	1
6	C.III.c	What level of sectionalization does the utility's distribution architecture have?	2	2	No	N/A	N/A	N/A	N/A
7	C.IV.b	At what level can estimates be prepared?	3	3	No	N/A	N/A	N/A	N/A
8	C.IV.d	What grid hardening initiatives does the utility include within its evaluation?	2	3	No	N/A	N/A	N/A	N/A
9	C.V.a	How are new hardening solution initiatives evaluated?	3	3	Yes	No	Inclusion of near-miss data in modeling	3	3
10	C.V.b	Are results of pilot and commercial deployments, including project	1	2	No	N/A	N/A	N/A	N/A

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		performance, project cost, geography, climate, vegetation etc. shared in sufficient detail to inform decision making at other utilities?							
11	D.I.a	What information is captured in the equipment inventory database?	1	3	Yes	Yes	The change resulted from a more granular interpretation of having an accurate inventory of the age and "expected life cycle" of transmission line assets. For additional details, please see PG&E's response to OEIS_002-Q09.	2	3
12	D.I.b	How frequently is the condition assessment updated?	3	3	No	N/A	N/A	N/A	N/A
13	D.II.b	How are patrol inspections scheduled?	1	2	No	N/A	N/A	N/A	N/A

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14	D.III.c	At what level of granularity are the depth of checklists, training, and procedures customized?	5	5	Yes	Yes	The change resulted from interpreting checklists to be the checklists used in our enhanced inspections which occur at an asset level, as well as benchmarking.	1	1
15	D.IV.a	What level are electrical lines and equipment maintained at?	1	2	No	N/A	N/A	N/A	N/A
16	E.I.b	How frequently is inventory updated?	5	5	Yes	Yes	The change resulted from our interpretation focusing on the fact that individual inspectors upload their data collections daily, rather than focusing on the overall frequency of program inspections (*e.g.*, annual inspection cycles).	2	3
17	E.II.b	How are vegetation inspections scheduled?	1	1	No	N/A	N/A	N/A	N/A
18	E.II.c	What are the inputs to scheduling vegetation inspections?	1	3	Yes	No	Remote sensing tech leveraged in decision-making for vegetation clearance.	1	3

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19	E.III.b	How are procedures and checklists determined?	1	1	No	N/A	N/A	N/A	N/A
20	E.III.c	At what level of granularity are the depth of checklists, training, and procedures customized?	3	3	Yes	Yes	Previous responses had focused on the fact that our checklists are similar across our service territory, but our understanding is that the question is focused on the granularity of the checklist itself, not whether it is used across the entire service territory. The 2022 score was based on the fact that our checklists are at the circuit level at a minimum, and in many cases at the asset level.	3	3
21	E.IV.c	What modeling is used to guide clearances around lines and equipment?	3	3	No	N/A	N/A	N/A	N/A
22	E.IV.g	How long after cutting vegetation does the utility remove vegetation waste along right of way?	3	3	Yes	Yes	PG&E is able to remove most waste within a week and often removes waste same day where feasible. The previous year's scores were based on exceptions in which clearing is not feasible within 1 week.	2	3

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23	E.V.b	How is potential vegetation that may pose a threat identified?	2	3	Yes	No	Increase in Risk Modeling capabilities	2	3
24	E.V.e	How long after cutting vegetation does the utility remove vegetation waste outside its right of way?	3	3	Yes	Yes	PG&E is able to remove most waste within a week and often removes waste same day where feasible. The previous year's scores were based on exceptions in which clearing is not feasible within 1 week.	2	3
25	F.III.c	During PSPS events, what percent of customers complain?	1	1	Yes	No	PG&E includes both formal complaints to the CPUC and informal complaints from various PG&E sources. In accordance with D.21-06-014, which was issued by the CPUC in 2021, PG&E interpreted customer complaints as any "expression of grief, pain, or dissatisfaction" for its 2022 score.	1	1
26	F.V.b	How automated is the process for inspecting de-energized sections of the grid prior to re energization?	1	1	Yes	No	Current technology does not allow for automated determination of circuits that are safe to energize. Manual patrols via ground or air are the current and future processes.	1	1

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27	F.VI.b	What training and tools are provided to field workers?	3	3	Yes	No	The team reevaluated our survey response related to communications tools. Because of the communications challenges in certain parts of our service territory, the current and future state scores were reduced back to iii. We believe the 2021 score of 5 was incorrectly assigned.	3	3
28	G.I.f	Does the utility share best practices for database management and use with other utilities in California and beyond?	1	2	No	N/A	N/A	N/A	N/A
29	H.I.b	For what level of granularity is the utility able to provide projections for each scenario?	3	3	Yes	No	Increase in Risk Modeling capabilities to provide risk and risk reduction at the circuit segment level.	3	3

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30	H.II.b	What initiatives are captured in the ranking of risk spend efficiency?	3	3	Yes	No	PG&E has already captured common initiatives as part of our WMP and General Rate Case (GRC) filings, controls and mitigations. Additionally, PG&E has presented emerging technology risk spend efficiencies, with the recognition that the technology and costs are less accurate measurements but directionally helpful to produce.	3	3
31	H.II.e	At what level of granularity is the utility able to provide risk efficiency figures?	3	3	No	N/A	N/A	N/A	N/A
32	H.III.b	At what level can estimates be prepared?	3	3	No	N/A	N/A	N/A	N/A
33	H.IV.b	At what level can estimates be prepared?	3	3	No	N/A	N/A	N/A	N/A
34	H.IV.d	What grid hardening initiatives are included in the utility risk spend efficiency analysis?	4	4	Yes	No	PG&E already calculates all commercially available system hardening initiatives as identified in the decision tree, including line removals, remote grid, overhead and undergrounding options.	4	4

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35	H.V.a	To what extent does the utility allocate capital to initiatives based on risk-spend efficiency (RSE)?	2	2	Yes	No	We do use RSE in consideration for capital allocation. For example, when projects are reviewed for hardening, various capital alternatives are considered, whether the project should be removed, remote grid, overhead (OH) or underground (UG). RSE is part of that decision tree in support of recommendation for capital allocation.	2	2
36	H.V.b	What information does the utility take into account when generating RSE estimates?	2	2	Yes	No	With the expansion of the probability of ignition (POI) models, risk buydown curves to delineate risk and risk reduction of asset across our system territory has been developed. Given the mapping, this can be matched to tranches for RSE calculation.	2	2
37	H.VI.a	How does the utility develop and evaluate the efficacy of new wildfire initiatives?	3	3	Yes	No	As the ignition tracker has matured, in order to capture more data points, we have included "near miss" like CPUC non-reportables. For example, for the vegetation contact incidents, regardless if it is reportable or not, we are using that data set to assess effectiveness.	3	3
38	H.VI.c	At what level of granularity does the utility measure the efficacy of new wildfire initiatives?	2	3	No	N/A	N/A	N/A	N/A

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39	I.II.e	Is there an inventory of high risk spend efficiency resources available for repairs?	2	2	Yes	Yes	Interpretation of having resources available for repairs in inventory, rather than having an RSE score for each type of material in our inventory. This interpretation was based on benchmarking with the other utilities.	1	1
40	I.III.b	What percent of affected customers receive complete details of available information?	3	3	Yes	Yes	Our interpretation factored in direct and indirect communications, rather than just direct communications.	3	4
41	I.III.c	What percent of affected medical baseline customers receive complete details of available information?	3	3	Yes	Yes	Our interpretation factored in direct and indirect communications, rather than just direct communications.	1	3

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