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BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Consider
Strategies and Guidance for Climate Change
Adaptation.

Rulemaking 18-04-019

**ADMINISTRATIVE LAW JUDGE'S RULING REGARDING JANUARY 25, 2019
WORKING GROUP REPORT ON "DEFINITION OF ADAPTATION FOR
UTILITIES"**

This ruling seeks comments on the Final Working Group Session Report on the "Definition of Adaptation for Utilities" dated January 25, 2019. Parties are asked to review the attached report and to provide comments no later than February 8, 2019 and reply comments no later than February 22, 2019.

IT IS RULED that comments on the attached Final Report on the "Definition of Adaptation for Utilities" are to be filed with the Commission by February 8, 2019 and reply comments by February 22, 2019.

Dated January 25, 2019, at San Francisco, California.

/s/ MARY E. MCKENZIE

Mary E. McKenzie
Administrative Law Judge

ATTACHMENT A

Order Instituting Rulemaking to
Consider Strategies and Guidance for
Climate Change Adaptation (R.18-04-
019): Working Group Session Report
on Item “Definition of Adaptation for
Utilities”

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JANUARY 25, 2019

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Executive Summary

Introduction

The purpose of this report is to describe and summarize the consensus and non-consensus items that emerged during the Working Group discussions regarding how best to define adaptation for electric and natural gas utilities, as part of the Order Instituting Rulemaking to Consider Strategies and Guidance for Climate Change Adaptation (OIR) at the California Public Utilities Commission (CPUC).

The Working Group met twice at the CPUC headquarters in San Francisco. The first meeting took place on November 29, 2018 and the second meeting took place on December 18, 2018. Both meetings were open to the public, and parties and non-parties to the proceeding participated.

I. Background and Framing Questions

a. Context for the Working Group Session Report

Order Instituting Rulemaking

The Order Instituting Rulemaking (OIR or Rulemaking) to Consider Strategies and Guidance for Climate Change Adaptation (R.18-04-019) was adopted by the Commission on April 26, 2018. The OIR was motivated by statewide policy directives, recent climate events, as well as advancements in—and availability of—climate science and tools. Per the OIR, Phase 1 of this proceeding addressing electric and gas utilities aims to consider: how to define climate change adaptation for the electricity and gas utilities, tools/data/resources for planning and operations related to climate adaptation, risks facing vulnerable and disadvantaged communities with respect to climate change impacts and the magnitudes of these risks, and guidance to electric and gas utilities on how to incorporate climate change adaptation into their planning and operations.

The Commission posed a set of questions in the OIR. Parties filed their Comments on the OIR and responses to the questions on June 6, 2018. One of the questions posed was, “How should the Commission define climate adaptation for IOUs?”¹ Parties responses to this question were used by the Commission’s staff to guide the discussion at the Working Group meetings on November 29, 2018 and December 18, 2018.

A prehearing conference (PHC) was also held on August 6, 2018 at the CPUC. The PHC provided an opportunity for parties to provide input on the preliminary scope, schedule and issues considered in the OIR, including the topics being considered for the Working Group process.

Phase 1 Scoping Memo

On October 10, 2018, Assigned Commissioner Liane Randolph issued a Scoping Memo and Ruling for Phase 1. This Scoping Memo specified a Working Group structure through which to work through issue areas and relevant questions in the proceeding. The Scoping Memo requires that the session reports summarize the Working Group conversations. The Scoping Memo states, “...it is not a goal at this time to reach consensus among participants but rather to develop a full understanding of the interplay of factors and externalities within each question, and to develop a range of recommendations that may be

¹ Order Instituting Rulemaking, at p. 18.

considered for adoption. The intent is to issue a guidance document to aid in utility planning for climate change adaptation.”² Future phases of the proceeding may consider further refinement of the guidance provided to energy utilities in Phase 1 of this proceeding.³

As part of this proceeding, the Working Group is asked to consider the following Issue areas: (1) definition of climate adaptation for utilities; (2) appropriate data sources, models and tools for utility decision-making; (3) guidelines for utility climate adaptation and planning; (4) identifying and prioritizing actions to address the needs of vulnerable and disadvantaged communities; and (5) a framework for climate-related decision-making and accountability. Within each Issue Area, the Scoping Memo suggests a set of questions that the Working Group could consider in discussion at the session meetings. At the conclusion of each Issue Area, a utility would lead the drafting of the Working Group session report. Working Group meeting attendees will have an opportunity to make minor corrections to the draft session report and Parties to the proceeding are invited to comment on the final session report after it is issued. The Commission aims to conclude the Phase 1 Working Group process and session reports by Summer 2019 and issue a Commission Decision by September 2019 (see [Appendix C](#) for the full proceeding Schedule).

Level-Setting Meetings

Since the OIR was issued, CPUC staff have held a number of workshops to provide important clarification and information to parties about the proceeding and climate science. At the PHC, Commission staff held two workshops to present the Cal-Adapt tool and hear from an expert panel on the development and use of existing climate adaptation tools and resources (see [Appendix B](#) for the agenda and the full list of workshop presenters). On November 29 from 1pm to 2pm, before the initial Working Group meeting on Topic 1, CPUC staff gave a brief overview of the Working Group process in the proceeding. Finally, shortly after the second Working Group meeting on Topic 1, which took place on December 18, 2018, three of the utilities--PG&E, SCE and SDG&E--made a joint presentation to the Working Group on electric distribution planning at utilities.

b. Framing Questions on the Definition of Adaptation for Utilities

Working Group Purpose and Questions

On the topic of the Definition of Adaptation for Utilities, the Commission in the Scoping Memo stated that the purpose of the first topic was to “develop a definition of what adaptation for utilities involves.”⁴ As part of this process, Working Group considered the following question:

Figure 1. Questions for Definition of Adaptation for Utilities Working Group (Scoping Memo)

What is an appropriate definition of adaptation for electric and gas utilities?

Working Group Meetings and Staff Proposal on the Definition of Adaptation for Utilities

Per the Scoping Order, the Working Group met twice in public forums to discuss Topic 1: the Definition of Adaptation for Utilities. Dr. Liz Whiteman of Ocean Science Trust facilitated both Working Group meetings in this topic. The initial meeting was held from 2pm to 4pm on November 29, 2018 at the

² Scoping Memo, at p. 11.

³ Scoping Memo, at p. 9.

⁴ Scoping Memo, at p. 4.

CPUC Auditorium. The goal of the first meeting was to describe the need and purpose for definitions of adaptation for the gas and electric sector, launch discussion by considering existing definitions, and obtain feedback on important elements of a definition of climate adaptation.⁵

CPUC staff reviewed and analyzed the adaptation definitions that were proposed by parties in their Comments on the OIR. CPUC staff offered a five-concept framework of questions to help guide the second meeting's discussion on the definition of adaptation.⁶ Working Group members provided feedback on the five-concept framework questions and other elements of the definition before concluding the initial meeting.

Figure 2. Five-Concept Framework Questions for Creating a Regulatory Definition of Adaptation (Staff Presentation)

- Whom should the utilities be protecting?
- What entities/assets should they protect?
- What outcome should they achieve?
- What type of hazard should action be taken for?
- What actions should the utilities take?

On December 7, 2018, CPUC staff released a proposal for a definition of adaptation to the service list (see [Appendix A](#) for the staff proposal). The proposal references party comments on the OIR and Scoping Memo, discussions at the prehearing conference (PHC), and discussions at the initial Working Group meeting. The staff proposal⁷ defines climate adaptation for electric and gas utilities as:

Figure 3. Definition of Adaptation for Electric and Natural Gas Utilities (CPUC Staff Proposal)

“...strategic and data-driven consideration and incorporation of current and likely future climate-driven risks into utility planning, operations, and communications, in order to maintain safe, reliable, affordable, and resilient operations, in alignment with state policy goals.”

The goal of the second meeting was to discuss and comment on the staff's proposed definition and to solicit input on additional topics or items of discussion.⁸ The second meeting of the Working Group took place from 9am to 12pm on December 18, 2018 at the CPUC Golden Gate Room. The attendees for each of these meetings are listed in [Appendix D](#).

II. Consensus Issues

This section lists items on which the Working Group did not appear to disagree.

⁵ “Welcome to Topic 1: Definition of Adaptation for Utilities”. CPUC Staff Presentation (Nov 29, 2018), at p. 2.

⁶ “Welcome to Topic 1: Definition of Adaptation for Utilities”. CPUC Staff Presentation (Nov 29, 2018), at p. 20.

⁷ “Defining Climate Adaptation in the Electric and Natural Gas Utility Context.” CPUC Staff Proposal, at p. 1.

⁸ “Working Group Agenda”. CPUC Meeting Agenda (Dec 18, 2018), at p. 1.

- A. **Distinguish between the terms “adaptation” and “resilience.”** In the staff presentation at the initial Working Group meeting on Nov. 29, CPUC staff offered that the terms “adaptation” and “resilience” could be used interchangeably. In response, however, parties raised concerns that the terms were not alike. PG&E was the first to offer that adaptation ties into resilience and reliability, which SCE qualified further by adding that increased reliability and resilience are the goals of adaptation.

Resolution: In replying to the parties’ concerns, CPUC staff remarked that this was an important clarification and agreed with parties to distinguish between the two.

III. Non-Consensus Issues

This section lists items where there was significant disagreement among the Working Group participants.

- A. **Reliability should be separate from the discussion of adaptation.** At the Nov. 29 meeting, CPUC staff gave a presentation with a chart illustrating how reliability and adaptation differed conceptually. CPUC staff then argued that, since reliability is already heavily measured and litigated in other proceedings, it was appropriate to approach these as two separate topics to avoid duplication and gaps in the regulation.⁹ Participants objected to the chart and to the CPUC’s position in the manner outlined below.

The chart in the presentation posits that reliability deals with a current timeframe and adaptation deals with a future timeframe. However, BAC and Pacific Institute disagreed with the chart and pointed out that climate impacts are here and now. BAC added that climate events are often chronic and considered the slide “out of date.” CPUC staff replied that the chart was intended to spark discussion and that the focus should be on differentiating between reliability and adaptation in a way that is actionable for the Commission to move forward. Staff posited that the current reliability standards do not capture all the necessary actions for utilities to take to adapt to chronic conditions today—something that might be considered a gap. Staff also conceded there is a middle ground where reliability and adaptation may overlap.

Climate Resolve favored moving away from making a distinction between reliability and resilience and focus instead on what reliability looks like in the middle and end-of-century. PG&E concurred. Climate Resolve also remarked that we may have different assumptions about our climate future and suggested arriving at a shared understanding of what the anticipated future impacts might be. Pacific Institute and SCE concurred. The CPUC responded that these issues will be discussed in Topic 2.

TURN added that this has real-world regulatory impact (e.g., in the Risk Assessment and Mitigation Phase) and is an important concept for utilities.

⁹ “Welcome to Topic 1: Definition of Adaptation for Utilities”. CPUC Staff Presentation (Nov 29, 2018), at p. 25.

- B. **Maintain all five-concept framework questions for discussion.** In discussing the five-concept framework questions at the initial Working Group meeting on Nov. 29, participants weighed in on whether climate change would necessitate changes in future utility operations and planning that are significantly different from how utilities operate currently. If there was little or no change to the response to each question due to climate change, then participants proposed dropping the question(s) from the conversation altogether.

Some participants (i.e., Pacific Institute, PG&E) suggested that utilities would respond in the same way in the future, regardless of the impacts of climate change, to some of the concept framework questions. For example, PG&E maintained that utilities would still seek to achieve the same mission—to provide safe, reliable, clean and affordable power—even when faced with a changing climate. Pacific Institute offered, assuming that they would be answered in the same way with or without climate change, that the bottom three concept framework questions could be dropped from the discussion. PG&E concurred.

SCE offered that there was merit to figuring out what would or would not need to change in utility operations and planning as a result of climate change. PG&E added that utilities are already taking many actions today to address climate change, and that it would be useful to set guidelines to determine if utilities are taking prudent action in light of these threats.

In response, CPUC staff countered that the current business as usual is not sufficient and that current operations and planning have gaps in addressing climate change. Natural Resources Defense Council agreed.

California Environmental Justice Alliance (CEJA) emphasized the degree to which climate change adversely impacts disadvantaged communities. In particular, CEJA emphasized that low-income communities of color are particularly vulnerable to catastrophic climate events like wildfires as they have less resources than other at-risk communities to adapt and rebuild and already face significant cumulative impacts of environmental pollution.

The Utility Reform Network (TURN) said that utilities have a role in managing their assets and systems to ensure that they are prepared for climate change as it occurs. TURN also pointed to the role of the CPUC in managing utilities facing climate change.

- C. **Specify whom to protect.** The discussion of whom to protect was first raised at the initial meeting on Nov. 29. CEJA suggested disadvantaged communities first, but also asked to include communities of color and low-income communities affected by climate impacts and associated power outages. CEJA maintains that any definition of adaptation adopted by the CPUC should specifically include such prioritization in order to achieve adequate consideration. Climate Resolve added that we are often dealing with risks that are familiar but exacerbated by climate change in terms of frequency, intensity or the confluence of multiple events.

Bioenergy Association of California (BAC) commented on CEJA's suggestion on disadvantaged communities, offering as an example rural communities that are adversely impacted but do not

typically fall within the disadvantaged community category. Instead, BAC prefers that the definition include everyone, including the community next door. Climate Resolve observed that it was within the purview of utilities to have healthy municipal responsibility.

PG&E submitted that utilities will continue to pursue their missions to provide safe, clean and affordable energy, just under different conditions given climate change. PG&E later added that the pursuit of safety always takes into consideration public safety.

Pacific Institute asked a clarifying question about whether disadvantaged communities are to be protected with or without climate change. The CPUC replied that while this proceeding is specific to climate change, there are other proceedings addressing challenges facing disadvantaged communities.

In replying to the Pacific Institute, CPUC staff remarked that while all of these impacts to communities are connected, the proceeding is focused on what the CPUC currently has authority over, which are the regulated utilities.

- D. Use of established definitions of adaptation, utility-specific definitions of adaptation, or hybrid version.** The consideration of whether to use established definitions that have been accepted globally (e.g., Intergovernmental Panel on Climate Change (IPCC) definition or Safeguarding California) was touched upon briefly at the initial meeting on Nov. 29, but the discussion was more fully developed by parties at the second meeting on Dec. 18.

At the Nov. 29 meeting, SDG&E asked why the CPUC had not considered global definitions of adaptation, such as the IPCC's, in its staff presentation. The response at the time from the CPUC was that there were many definitions, but only two examples—US Global Change Research Program's (USGCRP) and PG&E's—were selected for comparison in the presentation.

Participants were invited to give their opinion on the staff proposal at the second meeting on Dec. 18. However, several Working Group members voiced their concerns about the benefits and disadvantages of creating a utility-specific definition versus using a standardized definition of adaptation that has already been pre-approved and vetted in other forums. The Public Advocates Office, SDG&E, SCG, BAC, NRDC, and Pacific Institute supported using an established definition because (1) these definitions were already vetted; (2) using these definitions would ensure better alignment with other State agencies such as CalFIRE and CalOES that have adopted the same definition; and (3) there are already extensive studies and literature on each words' meaning in the definition to which parties may refer. SCG added that it supports the established definitions, as long as a distinction between mitigation and adaptation is made. Critics of the staff proposal thought that the proposal introduced too many ambiguities. When pressed for a preference for Safeguarding CA or IPCC, participants said they preferred Safeguarding CA.

By contrast, SCE and PG&E supported the staff proposal and considered that it was consistent with utilities' missions, allowed for flexibility and recognized tradeoffs faced by utilities and the

customers they serve. PG&E argued that the staff proposal offered something practical and specific to what utilities can do, whereas established definitions seemed too broad. SCE considered that a utility-specific definition was appropriate for this proceeding governing electric and gas utilities.

NRDC then proposed adopting one of the two standardized definitions of adaptation and then applying this definition to the utility sector in California in order to develop a specific definition for California utilities, thus grounding any new California-utility-specific definition in a standardized definition. This proposal was seconded by the Public Advocates Office. NRDC's proposal was referred to as the "hybrid definition."

Commissioner Randolph remarked that she did not think that either IPCC or Safeguarding CA provided sufficient detail about how adaptation was applicable to utilities and commented that a hybrid definition may be appropriate. PG&E previously supported a similar idea, noting that the utility-specific definition could be seen as an application of the established definitions for a specific sector.

- E. **Removing "strategic," "data driven," and "likely" from the staff proposal definition.** At the Dec. 18 meeting, participants focused on the staff proposal definition and discussed whether these words and phrases were appropriate to include in the definition of climate adaptation for utilities.

On "strategic," NRDC and CEJA considered the phrasing ambiguous. Pacific Institute and the Public Advocates Office did not think that the word was meaningful. SBUA agreed with Pacific Institute and suggested replacing "strategic" with "timely" to improve the definition.

CEJA proposed replacing "strategic and data driven" with "consideration and incorporation of risks as defined by best available science." BAC suggested that "strategic" be removed but recommended keeping "data-driven" or "best available science." NRDC offered "research or analysis-driven" as an alternative.

PG&E countered that "strategic" assumes a balance of cost, service and risk and that "data-driven" helps to determine what is measurable and accountable.

On "likely", Pacific Institute remarked that the word "likely" has a specific meaning, as defined by the IPCC. Public Advocates Office and BAC agreed and added that the phrase was ambiguous and unnecessary.

Public Advocates Office offered that "iterative" rather than "data driven" would be more appropriate to capture the meaning.

IV. Additional concepts introduced at the initial meeting (Nov. 29)

- A. **Allow for cross-sectoral considerations and impacts.** A few participants (Bioenergy Association of California (BAC), Julia Szinai (UC Berkeley graduate student) suggested that the definition allow for cross-sectoral impacts and consideration that could be measured later on.

- B. **Allow for flexibility to adjust to changing circumstances.** SCE offered that flexibility could be built in by clarifying in the definition that adaptation should include, but is not limited to, a specific set of actions, protocols and procedures. Pacific Institute concurred and added that a definition should be iterative.
- C. **Consider how the investment evaluation framework may evolve.** NRDC noted that the proceeding may lead to shifts in the cost-benefit analysis' considerations when evaluating a resource and cited the Integrated Resource Planning proceeding as an example.

V. Discussion on Staff Proposal

At the second Working Group meeting on Dec. 18, 2018, participants discussed their recommended changes and edits to the staff proposal. Participants also discussed the issues that the staff proposal failed to address. The major themes of the discussion are captured by the bullets below.

- **Replace “maintain” with “support” (SCE and PG&E).** The phrasing “maintain” assumes, perhaps incorrectly, that utilities are already taking action and are being directed to maintain it. It also could imply an obligation to continue providing a certain level of performance given climate change, which is problematic because non-climate factors that affect reliability are also important to consider. SBUA offered that “maintain” could be replaced with “provide.”
- **Remove “likely” (NRDC and Public Advocate Office).** This term is restrictive and not well-defined. Public Advocates Office gave the example of Fukushima which was not likely but had significant impact.
- **Remove or define “state policy goals” (NRDC).** Introduces ambiguity as to whether this means state laws or state policy. If the latter, needs to specify which policy. CEJA, Public Advocates Office, and SDG&E agreed.
- **Remove “tradeoffs” (CEJA).** This phrasing assumes that cost will be prioritized over other factors.
- **Limit or better Define “all aspects and impacts of utility operations” (PG&E):** All aspects and impacts of utility operations is overly broad. This could be improved by removing “and impacts.”

Participants also raised what they thought were missing elements in the staff proposal.

- **Timeframes (Climate Resolve).** This element is missing from the proposal, but will be especially needed when considering utility infrastructure lifecycles.
- **Applicability of the definition (SCE).** It is unclear whether various definitions, such as the definition of resiliency, will be used only in the Climate Adaptation OIR, or whether the same definition will also apply to other venues where such terms are used.
- **Multiple scenarios (Climate Resolve).** Avoid relying on a single forecast or model as best practice, instead of relying on the multiple models available.
- **Cross-proceeding efforts (BAC).** Think about how the CPUC will be doing adaptation itself and how this will be incorporated into other proceedings at the Commission.
- **Community resilience and collaboration (SMUD).** The staff proposal is heavily focused on utility work but seems to imply that it could happen in a vacuum without other regional entities.
- **Least-cost, best-fit analysis (BAC):** Change how we do cost-benefit now and how we choose resources going forward.

- **Recognition of shared responsibility for addressing climate risks (PG&E):** Many other stakeholders, including state and local governments, businesses, and community groups share the responsibility for adapting to climate change.

VI. Appendices

Appendix A. Staff Proposal on a Definition of Adaptation for Utilities

Defining Climate Adaptation in the Electric and Natural Gas Utility Context

Proposal for Working Group Discussion | December 2018

Introduction

This staff proposal articulates a draft definition for climate adaptation for the natural gas and electric utilities sectors. The draft definition was developed in consideration of the written comments received to date in this proceeding and the Topic 1 Working Group discussion on November 29, 2018. This draft definition is intended to advance Working Group discussion on this topic.

Possible Definition – for Discussion

Climate adaptation for electric and natural gas utilities is: strategic and data-driven consideration and incorporation of current and likely future climate-driven risks into utility planning, operations, and communications, in order to maintain safe, reliable, affordable, and resilient operations, in alignment with state policy goals.

Further Explanation

This explanation is organized according to the 5 definitional questions presented in the initial working group meeting. However, the questions of who/what is being protected have been consolidated, and all questions have been reframed as categories.

- **Actions:** Strategic and data-driven consideration and incorporation of risks into utility planning, operations, and communications.
 - Communications include outreach to customers and the public, internal communications, and reporting to the Commission.
 - Some risks may merit consideration, but not further incorporation into utility activities (considering magnitude, likelihood of occurrence, and trade-offs such as cost).
- **Hazards:** Relevant current and likely future climate-driven risks
 - Climate-driven risks include both current and likely future risks.
 - There are many climate-driven risks facing California, but in any given decision-making circumstance, only some are relevant to utility planning, operations, or communications.
- **Outcomes:** Maintain safe, reliable, affordable, and resilient operations, in alignment with state policy goals.

- “Reliable” is intended to mean the degree to which the electric and natural gas systems remain operational under various circumstances. “Resilient” is intended to mean the ability to withstand extreme events and the speed and ease with which utility systems can recover when a disruption does occur.
- There will be trade-offs between these outcomes, such as between maintaining reliability and affordability. These trade-offs may be considered in future working group sessions (especially working groups 4 and 5), as well as in future phases or in other proceedings.
- “Operations” includes all aspects and impacts of utility operations, not just provision of utility service to customers.
- **Whom/what to protect:** Protections are no less broad than in other contexts and are therefore not explicitly mentioned in the definition.
 - For example, utilities have an obligation to protect the general public, their own assets, public and private property, and ecosystems (pursuant to any existing legislation and regulations).
 - Certain groups likely require additional *prioritization* for protection in the adaptation context (e.g., vulnerable and disadvantaged communities, and low-income customers). This should be considered in detail in Working Group Topics 4 and 5.

Appendix: Summaries of Party Comments

Shortened for ease of reference. See party filings for complete comments.

Adaptation Definitions, Organized by Element

What actions should the utilities take?

IPCC Definition (SDG&E, Green Power Institute, SCG):

- Adjustment to natural or human systems

Southern California Gas Company:

- Anticipate climate hazards
- Adopt plans
- Implement strategies to react to real-time events
- Undertake recovery efforts

Southwest Gas Corporation:

- Adjustments to utility systems and business practices

Southern California Edison:

- Adjustment of utility systems and business practices

Climate Resolve:

- Anticipate and prepare for
- Conduct socially-responsible activities

Pacific Gas & Electric:

- Actions taken

Small Business Utility Advocates:

- Respond to, moderating harms, exploiting beneficial opportunities

Asia Pacific Environmental Network / Communities for a Better Environment (APEN/CBE)

- Support recovery

California Association of Small and Multi-Jurisdictional Utilities (CASMU)

- Actions

Bioenergy Association of California (BAC)

- Assess, forecast, coordinate

USGRCP (Green Power Institute):

- Prepare for, adjust to new conditions

[What type of hazard should action be taken for?](#)

IPCC Definition (SDG&E, Green Power Institute, SCG):

- Actual or expected climatic stimuli or their effects

Southern California Gas Company:

- Climate hazards

Southwest Gas Corporation:

- Climate change impacts

Southern California Edison:

- Current and likely consequences of climate change

Climate Resolve

- Chronic climate change impacts
- Acute extreme weather events
- Threats to flora and fauna

Pacific Gas & Electric:

- Climate-driven consequences, changing climate, associated weather patterns

Small Business Utility Advocates:

- Actual or expected climate changes and their effects

APEN/CBE

- Grid outages, changing climate

CASMU:

- Climate changes

Bioenergy Association of California (BAC)

- Likely climate impacts

USGRCP (Green Power Institute):

- New conditions

Public Advocates Office:

- Climate change and cascading impacts

[What outcome should they achieve?](#)

IPCC Definition (SDG&E, Green Power Institute, SCG):

- Moderate harm, exploit beneficial opportunities

Southern California Gas Company:

- Minimize infrastructure and customer impacts

Southwest Gas Corporation:

- Address climate change impacts

Southern California Edison:

- Deal with...consequences of climate change, protect communities served

Climate Resolve

- Operability
- Minimize short-term and long-term threats
- Provide continuous service

Pacific Gas & Electric:

- Mitigate against, adapt to

Small Business Utility Advocates:

- N/A

APEN/CBE

- Ability of local communities to recover from outages, affordable energy

CASMU

- Mitigate against

Bioenergy Association of California (BAC)

- reduce impacts

USGRCP (Green Power Institute):

- reduce harm, take advantage of new opportunities

[What entities/assets should they protect?](#)

IPCC Definition (SDG&E, Green Power Institute, SCG):

- N/A

Southern California Gas Company:

- Infrastructure

Southwest Gas Corporation:

- N/A

Southern California Edison:

- Communities they serve

Climate Resolve

- Flora and fauna
- Disadvantaged communities as identified by CalEnviroScreen

Pacific Gas & Electric:

- IOU assets, infrastructure, operations, employees, and customers

Small Business Utility Advocates:

- Utilities, ratepayers, and communities

APEN/CBE

- N/A

CASMU

- Utility resources, infrastructure, operations

Bioenergy Association of California (BAC)

- Utility infrastructure and operations, existing and new infrastructure

USGRCP (Green Power Institute)

- N/A

Whom should the utilities be protecting?

IPCC Definition (SDG&E, Green Power Institute, SCG):

- N/A

Southern California Gas Company:

- Customers

Southwest Gas Corporation:

- N/A

Southern California Edison:

- Communities (they) serve

Climate Resolve

- Disadvantaged communities as identified by CalEnviroScreen

Pacific Gas & Electric

- Employees and customers

Small Business Utility Advocates:

- Utilities, ratepayers, and communities

APEN/CBE

- Local communities

CASMU

- Employees and customers

Bioenergy Association of California (BAC)

- N/A

USGRCP (Green Power Institute)

- N/A

Adaptation Definitions, Organized by Party

- **Bioenergy Association of California (BAC)** at 3:
 - Assessment of the likely impacts on utility infrastructure and operations for each type of climate impact
 - Forecast costs of impacts and adaptation measures
 - Required measures to reduce impact on existing infrastructure
 - Guidelines for development of new infrastructure to reduce climate impact risks
 - Assessment of measures that provide both adaptation and mitigation benefits
 - Guidelines for incorporating adaptation into other proceedings
 - Coordinate with key partner agencies
- **SDG&E** at 5: SDG&E recommends the definition provided by the Intergovernmental Panel on Climate Change (“IPCC”), “adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects.” Adaptation should involve “resilience.”
- **Southwest Gas Corporation** at 2: Suggests, “actions to address climate change impacts through adjustments to utility systems and business practices.”
- **Southern California Edison** at 3: Recommends defining climate adaptation for IOUs as the *adjustment of utility systems and business practices to deal with the current and likely*

consequences of climate change and to protect the communities we serve. Adaptation activities would include:

- Infrastructure improvements to enhance resilience
 - Changes to operating practices to mitigate impacts
 - Increased outreach to communities
- **Green Power Institute (GPI)** at 2: “adjustments in natural or human systems in response to actual or expected climatic stimuli or their effects which moderates harm or exploits beneficial opportunities” (IPCC)
- **Climate Resolve** at 2:
 - Anticipate and prepare for operability in the face of chronic climate change impacts
 - Anticipate and prepare for operability in the face of acute extreme weather events
 - Conduct socially responsible activities in the face of climate change impacts that minimize short-term and long-term threats to flora and fauna
 - Provide continuous service to disadvantaged communities as identified by CalEnviroScreen
- **California Association of Small and Multi-Jurisdictional Utilities (CASMU)** at 11: utility actions to mitigate against climate changes impacting utility resources, infrastructure, operations, employees, and customers
- **Southern California Gas Company** at 6: Recommends IPCC definition – operationalize by a) anticipating the occurrence of climate hazards, b) adopt plans to minimize infrastructure and customer impacts; c) implement adaptation strategies to react in real-time as events unfold; d) undertake any recovery efforts
- **Pacific Gas & Electric** at 7: Actions taken related to IOU assets, infrastructure, operations, employees, and customers to mitigate against potential climate-driven consequences, and adapt to a changing climate and associated weather patterns.
 - Adaptation – set of actions
 - Resilience – describes a desired outcome
 - Distinction between adaptation and general reliability/resilience activities may become clearer as IOUs apply a standard climate change planning scenario
- **Small Business Utility Advocates:** the response to actual or expected climate changes and their effects on utilities, ratepayers, and communities, including by moderating harms and exploiting beneficial opportunities. Moderating harms includes taking practical steps to protect ratepayers and communities from the possible disruption and damage that may result from climate change impacts on utility assets, safety, power reliability, and energy infrastructure, and ensuring the costs of such actions are just and reasonable to ratepayer, beneficial opportunities include economic benefits that might accrue to ratepayers as well as utilities in helping to implement climate change strategies.
- **Independent Energy Producers** at 3: Defining types of climatic events that trigger the need for climate adaptation is critical.
- **APEN/CBE** at 4: Recommends applying a resilience frame to Commission activities related to climate impacts. “Local energy-related resilience is defined as energy services to support the

ability of local communities to recover from grid outages and enjoy affordable energy in a changing climate. Local energy resilience includes energy reliability, energy affordability, health, and safety”

- **Public Advocates Office** at 3: Recommends that the Commission clarify what the purpose or goal of creating a definition is. The Public Advocates Office also recommends that purpose of the definition reflect the underlying concern of developing a shared set of common adaptation principals for the limited purpose of informing the discussions of other Working Group topics. Recommends that the development of a clear process for this proceeding, guidance for utilities and stakeholders, and a set of shared principles for climate adaptation may be more productive than focusing on a definition of climate adaptation, especially at the early stages of this proceeding. The very concept of climate adaptation requires the ability to evolve and develop. If a definition is too broad, it will do little to provide any guidance to stakeholders, and if it is too narrow it may unnecessarily constrain the proceeding—leading to maladaptive prescriptions.

Appendix B. Climate Adaptation Prehearing Conference & Workshop Agenda

Climate Adaptation Prehearing Conference & Workshop Agenda R.18-04-019

August 6, 2018

California Public Utilities Commission Auditorium, 505 Van Ness Avenue, San Francisco

Time	Topic
10:30 – 12:00	Presentation and Demonstration of Cal-Adapt <ul style="list-style-type: none"> • Guido Franco, California Energy Commission • Nancy Thomas, UC Berkeley Geospatial Innovation Facility
12:00 – 1:00	Lunch Break
1:00 – 1:50 (approx.)	Prehearing Conference <u>Call-in Information (Listen-in only mode)</u> <ul style="list-style-type: none"> • 800-857-1917, passcode 92105#
2:00 – 2:10	Workshop Introductory Remarks <ul style="list-style-type: none"> • Kristin Ralff Douglas, CPUC • Guido Franco, CEC
2:10 – 2:50	Data Development <ul style="list-style-type: none"> • Coastal Storm Modeling System (CoSMoS): Juliette Finzi Hart, US Geological Survey • Dynamical Downscaling: Neil Berg, UCLA Institute of the Environment & Sustainability
2:50-4:00	Data Use <ul style="list-style-type: none"> • Vulnerability Index: Heather Cooley, Pacific Institute • State of California Sea-Level Rise Guidance: Deborah Halberstadt, Ocean Protection Council • AB 2800 – Climate Change Infrastructure Planning: Juliette Finzi Hart, US Geological Service • Utility Perspectives: Kit Batten, Pacific Gas & Electric
4:00 – 4:05	Wrap Up and Next Steps

Appendix C. Phase 1 Climate Change Adaptation Rulemaking Schedule

Event	Date
Scoping Memo Issued	Oct 10, 2018
Comments on Scoping Memo	15 days after Scoping Memo issued
Working group process (meetings, proposals, reports, comments, and replies)	Q4 2018 through Q2 2019, with each topic addressed sequentially
Final set of working group session report	Summer 2019

comments and replies received	
Proposed Decision	90 days following submission
Commission Decision	September 2019

Appendix D. List of Attendees at the Working Group Meetings on the Definition of Adaptation

Date of Meeting/Description	Attendees
November 29, 2018 / Initial Meeting on the Definition of Adaptation	<p><i>Meeting Attendees:</i> [In-Person:] CPUC: Reese Rogers, Kristin Ralff-Douglas, Sarah Owens (Advisor to Commr Rechtschaffen), ALJ Mary Mackenzie, Leuwam Tesfai (Legal Division), Joanna Gubman (Advisor to Commr Randolph), Simi George (Advisor to Commr Rechtschaffen); Ocean Science Trust: Liz Whiteman (Facilitator), Melissa Kent, Anthony Rogers; CA Public Advocates: Karin Hieta, Meghan O'Brien; Coalition CA Public Employees: Miles Marina; SouthWest Gas: Valerie Ontiveroz; PG&E: Jane Olivera, Steve Cohen, Nathan Bengsston, Heather Rock, Steve Koenig; CWA: Heide Davis; CEJA: Roger Lin, Tyler Earl; Bioenergy Association of California: Julia Levine; NRDC: Patricia Valderrama, Mohit Chhabra; TURN: Katy Morsony; GPI: Gregg Morris; Pacific Institute; Pacific Science: Julie ; SCG: Karineh Gregorian; SDG&E: Robert Kay, Kristie Ragas; SCE: Dawn Anaiscourt, Dhaval Dagli, Jennifer Pearce, Sarah Lee; Climate Resolve: Jonathan Parfrey, Louis Blumberg;</p> <p>[on WebEx:] CEJA: Deborah Behles; OPR; Valencia; AT&T: David Miller, Quinn Johnson; CEC; Liberty Utilities; CPUC: Elizaveta Malashenko, Energy Division; SDG&E: Tim Lyons; SCG: Geoffrey Danker; SBUA: Paul Keurig; Joe Kate</p>
December 18, 2018 / Initial Meeting on the Definition of Adaptation	<p>Attendees: CPUC: Commissioner Liane Randolph, Suzanne Casazza, Joanna Gubman, ALJ Mary Mackenzie, Kristin Ralff-Douglas, Reese Rogers, Sarah Owens; Ocean Science Trust: Liz Whiteman, Anthony Rogers, Melissa Kent; Public Advocates Office: Sonja Ziaja, Megan O'Brien;</p>

	<p>SCE: Dhaval Dagli, Tyson Laggenbauer, Jennifer Pearce, Sarah Lee; PG&E: Heather Rock, Nathan Bengsston, Steven Koenig, Jessie Knapstein; SDG&E: Timothy Lyons, Brian D’Agostino, Jose Lopez; SoCalGas: Karineh Gregorian; NRDC: Mohit Chhabra, Patricia Valderrama; Bioenergy Association of California (BAC): Julia Levin; Climate Resolve: Jonathan Parfrey <i>via Webex</i>; AT&T: Gwen Johnson; Pacific Institute: Peter Gleick; Green Power Institute: Gregg Morris; California Water Association: Mari Davidson; SoCalGas: Geoffrey Danker; SCE: Jon Okada; Local Government Sustainable Energy Coalition (LGSEC): Irene Moosen; OPR: Nuin-Tara Key; USGS: Juliette Hart; CEJA: Roger Lin; SBUA; SMUD</p>
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