Energy

Introducing a new strategy to help utilities adapt to climate change

California's wide-ranging and integrated regulatory approach

By Robert Kay, Tommy Hendrickson, Jamie Liu, ICF

On August 27, the California Public Utilities Commission (CPUC) unanimously voted to approve the most wide-ranging and integrated approach to managing climate change risks on the state's energy investor-owned utilities (IOUs). Led by Commissioner Liane Randolph, the August 27 decision concluded Phase 1 of a 2.5-year process through the Order Instituting Rulemaking (OIR) to Consider Strategies and Guidance for Climate Change Adaptation (Rulemaking 18-04-019)—known as the Adaptation OIR.

Initiated in May 2018, the Adaptation OIR scope considers "strategies to integrate climate change adaptation matters in relevant Commission proceedings" during "a time of worsening climate impacts."

There are five key outcomes of the Adaptation OIR:

- Integrating climate adaptation in the GRC cycle.
- Engagement with vulnerable communities.
- Climate vulnerability assessment.
- Climate governance.
- Climate risk integration in power purchase agreements.

About the Adaptation OIR

The regulatory processes known as OIRs allow the CPUC to manage IOUs that provide essential services of water, energy, and telecommunications. These quasi-legislative proceedings may influence CPUC decisions in setting rates, establishing policies, or investigating possible law violations.

Stakeholders can participate in the process by requesting to become a formal party, which gives them the opportunity to attend CPUC meetings, submit comments, and provide testimony. In addition to the CPUC-regulated IOUs, parties to the Adaptation OIR include the California Public Advocates Office, organizations representing smaller utilities, and various energy and environmental justice organizations.

The Adaptation OIR unfolded during a unique period in California's climate and energy history

First came a series of climate disasters in 2017 and 2018, including devastating wildfire seasons, flooding, and mudslides. Some of the most destructive fires were caused by faulty electricity transmission systems including the Camp Fire, which resulted in 85 deaths, widespread damage, and community dislocation. The combined liabilities from these fires resulted in Pacific Gas & Electric's (PG&E's) bankruptcy in January 2019. During the Santa Ana wind season from October to November 2019, an estimated 2.5 million Californians lost power during preemptive public safety power shutoffs designed to minimize the wildfire risk during extreme climate conditions. These events triggered a host of regulatory and investigative actions by the CPUC, all of which occurred in parallel to the Adaptation OIR.

With the release of the Final Phase 1 Decision in late August 2020, California entered the worst heatwave in recorded history. As of early September, the 2020 wildfire season is already the worst on record with nearly 8,000 fire incidents, 25 fatalities, almost 4 million acres burned, and over 6,000 structures damaged or destroyed. The state reached this grim milestone even before the start of the wildfire season proper, when Santa Ana winds have the potential to make the situation even worse by literally fanning the flames.

As a result, the new system for enhancing energy system resilience in the face of rapidly emerging climate change impacts is, to put it mildly, timely.

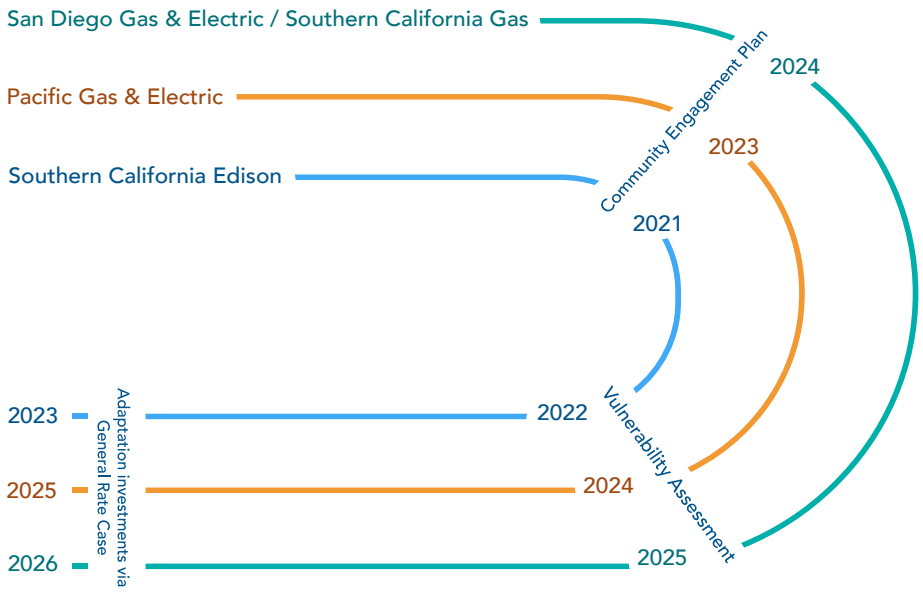
First outcome: Integrating climate adaptation in the GRC cycle

The Adaptation OIR starts a new process of integrating specific climate-adaptation expenditure to enhance the resilience of IOU infrastructure, operations, and services in the four-year General Rate Case (GRC) cycle. This allows IOUs to include in their GRCs the main takeaways from their vulnerability assessments, including a list of vulnerabilities, proposals addressing these vulnerabilities, and long-term goals for adaptation.

Based on the results of their vulnerability assessments and community engagement plans, IOUs may seek permission from the CPUC to include specific climate change adaptation investments through their regular GRC process.

The first IOU to start the new cycle is Southern California Edison's (SCE's) 2023 GRC. PG&E is the next IOU to enter the cycle for its 2025 GRC, followed by San Diego Gas & Electric (SDG&E) and Southern California Gas (SoCalGas) in 2026 (see Figure 1).

FIGURE 1: NEW CLIMATE CHANGE ADAPTATION CYCLE REQUIRED BY THE OIR



Second outcome: Engagement with vulnerable communities

The Adaptation OIR requires IOUs to draft a community engagement plan (CEP) as the first key milestone in the new GRC cycle (see Figure 1). The CEP's purpose is to inform and engage those communities in the state that are inherently vulnerable to the impacts of climate change due to their relative disadvantage.

It was fascinating to witness firsthand the lengthy, often passionate, debate during the OIR on how to conceptualize and define what "vulnerability" and "disadvantaged" meant in the context of climate change—and then how to translate these definitions into specific investment decisions within those communities. The Commission carefully crafted language in the OIR rulings to strike a balance between the need to enhance their entire system's climate resilience while also recognizing the unique context of vulnerable communities.

The Commission developed a customized definition for "disadvantaged vulnerable communities" (DVCs) that combined socio-economic disadvantage factors, pollution burden, and tribal land areas. While the extent of California's DVCs remains unmapped, PG&E estimated that around a quarter of the population in its service area lives in a DVC.

Third outcome: Climate vulnerability assessment

A detailed climate vulnerability assessment (VA) is required by the four large IOUs every four years as part of the GRC cycle.

The Adaptation OIR provides detailed specifications of the terminology, methodology, and climate parameters required in the VA. For example, the specified minimum set of criteria for the VA is: temperature, sea-level, precipitation, wildfire, and cascading impacts (e.g., the events that led to the Montecito mudslides in 2018 from wildfire followed by extreme precipitation).

IOUs are required to submit their VAs on the same day as their Risk Assessment Mitigation Phase (RAMP) filings: one year before the GRC filing. Subsequently, as part of the GRC, IOUs must submit a summary of the VA as a separate section or chapter that outlines the key climate change risks identified and the adaptation options proposed for risk mitigation. Clear climate adaptation goal setting is also required.

Fourth outcome: Climate governance

The OIR also describes CPUC's requirements for IOU internal governance, including "climate change teams" that draw representatives from across the IOU. Senior executive engagement is specified, and board involvement is encouraged.

Combined, the new climate governance arrangements are responsible for coordinating climate change planning and adaptation prioritization. The OIR detailed governance requirements of the climate change teams, including internal reporting lines to senior executive-level staff and team members' professional expertise.

In addition, the OIR requires IOUs to file an annual advice letter to the CPUC describing team membership, annual progress, and upcoming work programs. The OIR also requires board members to oversee climate adaptation planning regarding operations, infrastructure, and services—though it does not specify how such oversight will occur.

Fifth outcome: Risk analysis and power purchase agreements

Beginning in 2022, IOUs must detail their efforts to understand the climate risks associated with long-term power purchase agreement (PPA) of 15 years or more.

The CPUC outlined its intention to scrutinize the climate change exposures of generation facilities and transmission systems. However, the OIR stopped short of requiring such assessments to be carried out by power providers. Rather, it stated an expectation that IOUs include climate change considerations in their negotiations while contracting with third parties.

In addition to the PPA's climate risk assessment process, the Adaptation OIR requires IOUs to undertake a similar assessment as part of the regular VA process every four years. This facet of the OIR essentially extends the CPUC's regulatory reach beyond the IOU's infrastructure and operations within California to the providers across the Western United States, Canada, and Mexico.

Time will tell

The Adaptation OIR was the most comprehensive process to address the regulation of climate change impacts and adaptation undertaken by any state. There is a lot to learn from: the final rulings and the Commission's justification of them, developed through a process of scrutiny and dialogue with stakeholders; the text of the parties' submissions that detailed their views; the working papers and workshop reports that contain the points raised during development of the rulings, and the ongoing process itself. There is a wealth of information for regulators, utilities, and students of energy resilience in other states.

The Adaptation OIR pulled together the threads of technical assessments, community engagement, enhanced climate governance, and supply chain risk management into an integrated regulatory package. Individually, each of these threads can be pulled on by those seeking to enhance the resilience of other sectors of the California economy or regulators in other states turning to the critical climate change vulnerabilities of their energy sectors. However, it is the integration of these components that we believe to be the driving factor of the outcomes anticipated from the Adaptation OIR.

The first submissions by IOUs are due at their first annual climate governance reports at the end of Q1 2021. Then, SCE will be the first to embark on a climate-informed GRC cycle for submission in 2023. As a result, it will be at least another three years before we can start to evaluate the success of the OIR in translating its intent to on-the-ground adaptation investments.

Only time will tell if this new regulatory system will live up to the promise of enhancing California's energy system to withstand the rapid acceleration of climate change impacts. But if there is ever a time to embark on this new journey, it is now.

Disclaimer

The authors provided advice to SDG&E and SoCalGas during the OIR process including technical and policy advice together with assistance in drafting Topic 3 and 5 Workshop Reports. The first author was also invited by CPUC, at the suggestion of SoCalGas, to present on Adaptation Pathways assessment during the Topic 5 workshop. The first author also participated in Joint IOU discussion calls, but was not involved in the provision of advice to other IOUs. Additional ICF staff provided advice to IOUs other than SDG&E and SoCalGas. The opinions expressed in this article are expressly not those of SDG&E, SoCalGas, or any other ICF client.

Sources

All documents relating to the OIR, including the decisions, workshop reports, and submissions are available on the CPUC website. To view these documents, visit CPUC's Proceeding Information Search Portal and type in "R.18-04-019" for the Proceeding Number. Users can then click on the link to the result and navigate to the "Documents" tab.

About the Authors

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Robert has 31 years of experience in climate change impact assessment, adaptation planning, resilience assessment, and coastal zone management. He has a unique background of management and policy experience combined with his technical background in climate change vulnerability impacts and adaptation assessment, geomorphology, and coastal planning and management. Robert helps companies, governments, and communities prepare for climate change impacts and guides cost-effective, equitable adaptive responses.

Robert is based in Los Angeles and offers global best practices in climate adaptation to support practical resilience decision making for southern Californian clients. He is regularly sought after for his insights on California climate adaptation policy. Robert has worked substantially for multi-lateral organizations such as the United Nations Environment Programme, the United Nations Development Programme, and the United Nations Framework Convention on Climate Change, as well as for development banks such as the Asian Development Bank and the World Bank. He has led projects in Europe, Asia Pacific, the Middle East, South America, and Africa. Since 2009, Robert has provided expert support to delegations at the United Nations Framework Convention on Climate Change.

Previously, he was managing director of adaptive futures and coastal zone management. Robert has a doctorate in environmental science from the University of East Anglia and a bachelor's in geology from Cardiff University. He is an adjunct professor in the Sustainability Research Centre at the Sunshine Coast University in Australia. Robert is on the Advisory Board of Green Planet Films and has written over 120 papers, articles, and consultancy reports.

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Tommy has worked in climate change mitigation, adaptation, and resilience assessments for complex infrastructure systems since 2009. In adaptation, he works in assessing vulnerabilities to water, energy, and transportation infrastructure systems, and incorporating climate change into risk management approaches. In mitigation and sustainability, he specializes in utilizing life-cycle assessment (LCA) in analyzing greenhouse-gas (GHG) emissions associated with waste management, consumer electronics, water and wastewater infrastructure, renewable energy systems, alternative fuels, vehicle technologies, and private company operations.

Tommy's work at ICF focuses on determining climate adaptation and environmental mitigation solutions, collaborating closely with local, state, federal, and private clients. In GHG mitigation projects, he has led the development of GHG mitigation strategies, implementation of emission reduction projects, and assessment of project co-benefits. In climate adaptation and resilience, he works with clients to assess system vulnerabilities to changing climate hazards and leads the development of adaptation strategies that address and account for deep uncertainties in future planning.

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