SANTA BARBARA SOUTH COAST
CHAMBER OF COMMERCE
From Goleta to Carpinteria

Roadmap To Recovery:

Power On

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ROADMAP TO RECOVERY
GOLETA • SANTA BARBARA • CARPINTERIA

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The Roadmap to Recovery

The Santa Barbara South Coast Chamber of Commerce is dedicated to the economic health and vitality of communities from Goleta to Carpinteria on the South Coast of Santa Barbara County.

The Chamber works to help businesses, residents, and visitors thrive by advocating for responsible public policy, offering networking and community-building opportunities, providing access to business development resources, and supporting visitor services across the region.

The COVID-19 Pandemic brought massive and unforeseen impacts to the business community in Santa Barbara County, in California, across the United States, and worldwide. The Chamber developed a plan and action steps to help get businesses, large and small, back on their feet on Santa Barbara's South Coast. This work aligns with the Chamber's mission, passion, and expertise.

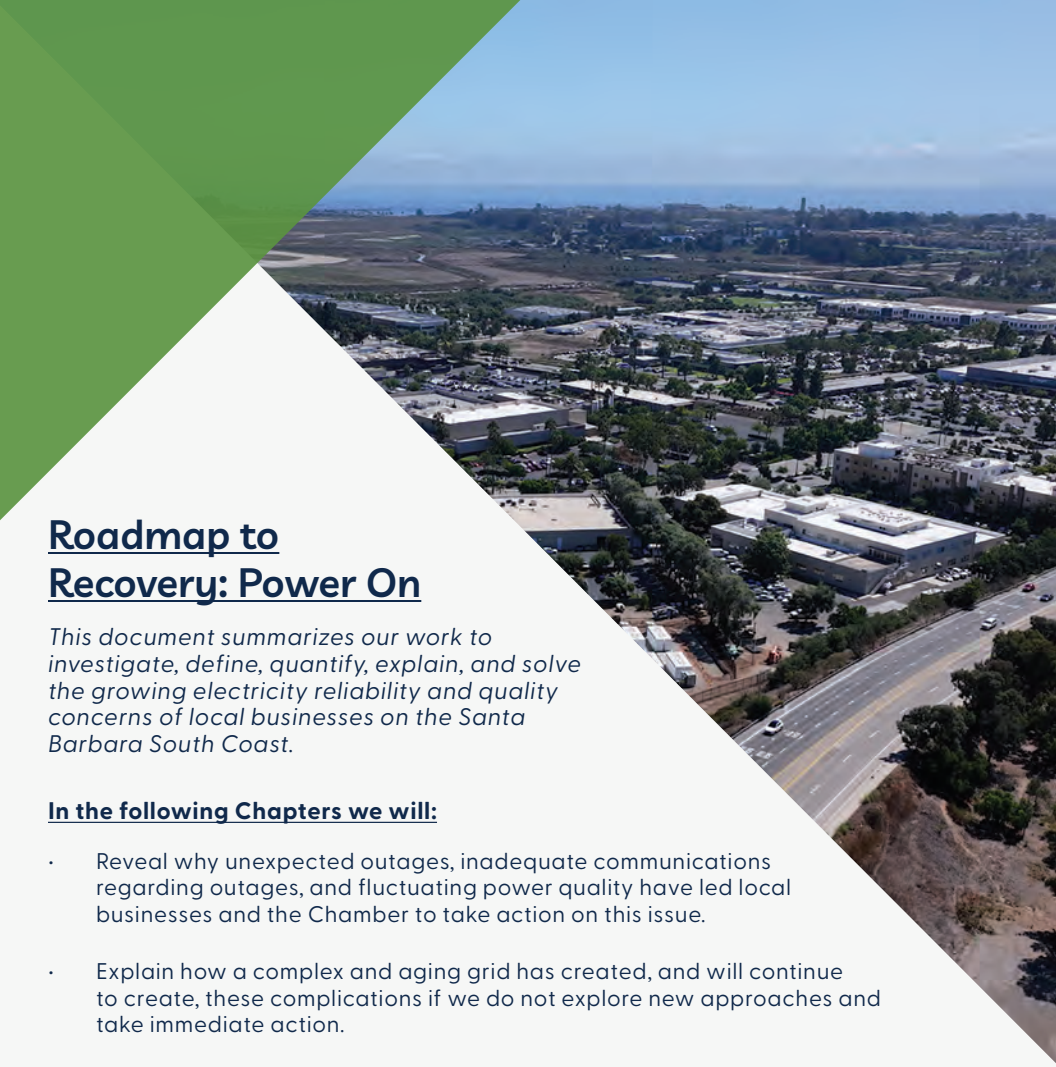
Phase I of the Roadmap to Recovery was released in February 2021 and summarized challenges and set a course for goals, tactics, and milestones to get businesses reopened safely.

Roadmap to Recovery Phase II, released October 2021, addressed long-term recovery strategies, different emerging issues, and additional challenges businesses faced as the State and community reopened.

In April of 2023 the Chamber released **Roadmap to Recovery Phase II: The Road Home**, to provide a basic roadmap to guide us out of the current housing crisis and build consensus around the proposed solutions. Following the momentum created by the Road Home and the Chamber's Employer Sponsored Housing Consortium, the Chamber released the updated **Road Home II** in July 2024.

Continuing to Champion Businesses

The Chamber's efforts to create community alignment and build coalitions around the toughest challenges facing the business community go far beyond pandemic recovery and housing. Our highest priority is the economic resilience of the South Coast, as the health of the economy translates directly to the health of local businesses. Our continual efforts to work with businesses to solve their most serious barriers to business have revealed that access to a reliable and resilient electricity supply is currently one of the key issues presently facing the South Coast economy.



Roadmap to Recovery: Power On

This document summarizes our work to investigate, define, quantify, explain, and solve the growing electricity reliability and quality concerns of local businesses on the Santa Barbara South Coast.

In the following Chapters we will:

- Reveal why unexpected outages, inadequate communications regarding outages, and fluctuating power quality have led local businesses and the Chamber to take action on this issue.
- Explain how a complex and aging grid has created, and will continue to create, these complications if we do not explore new approaches and take immediate action.
- Outline several solution pathways:
    - Private self-help solutions (Businesses and Property Owners)
    - Grid upgrades (SCE)
    - Customer service and data sharing (SCE)
    - Advocacy (Chamber Coalition)
    - State Legislation (Chamber Coalition and Legislators)
- Provide case studies on the impact these issues have had on real businesses in our community, and how that compares to the efficacy of other electrical utilities around the country.

Thank you to all participants who made this paper possible:

Santa Barbara South Coast Chamber of Commerce - Electricity Reliability Working Group

Members of the Electricity Reliability Working Group: Randy Berg, Romi Kadri, Larry Doris, Demis John, Steve Greig, Kristen Miller, and Dustin Hoiseth

State Senator Monique Limon & Senator Limon's Office

California Public Utilities Commission - Commissioner Darcy Houck California

Public Utilities Commission - Christopher Moore

Chapter 1: The Energy Transition

Economic Development

In order to maintain and grow our region as a Tech Hub, and to preserve our thriving industrial core in Coastal California, we must have reliable electricity. We can't propose economic development, grow jobs, provide investment in our communities, without reliable infrastructure including access to reliable, high-quality electrical power. As the state and nation move toward an energy future that relies primarily on electricity provided by a variety of sources including wind and solar, and diminishes reliance on fossil fuels, this electricity supply problem becomes more acute. The pace of change is at issue, not the desire to change. The path forward must emphasize growing technologies that support this energy transition and not stifle those industries by limiting their growth.

Thanks in large part to the presence of UC Santa Barbara, the Santa Barbara South Coast stands at the forefront of climate technology solutions with global potential.

Technologies born of UCSB like energy-efficient lighting and advanced computing, touch billions of lives around the world every day, shaping a more prosperous and sustainable future. Supporting these initiatives with a reliable energy framework will further enable the South Coast to be a launchpad for solutions that can benefit both local and global communities. Strengthening the region's power infrastructure will ensure that the South Coast continues to be a leader in technology and innovation.

While renewable sources such as solar and wind are pivotal to environmental stewardship, the South Coast's specific needs require a diversified energy mix that balances renewables with adequate supply, and stable infrastructure. This approach not only aligns with the state's green goals but also ensures reliability for critical local businesses. By investing in battery storage, microgrids, distributed generation, and improved distribution networks, the region can pioneer resilient energy solutions that enhance sustainability and stability in lock step.

Today, California is responsible for less than 2% of global emissions, and dropping quickly – much more from increases in emissions elsewhere than from reductions in our own. If California were to flip a switch and achieve net zero tomorrow, the resulting emissions reduction would be almost irrelevant to climate change. Perhaps other wealthy economies that can afford similar subsidies and tax credits as California could flip similar switches and follow suit, but still – climate change would continue to proliferate due to the vast expansion of energy demand in the developing world.

Our region's most important role in the energy transition is to leverage the powerhouse of innovation that is the backbone of our local economy, to develop and commercialize clean energy solutions that compete - not just in the rich world, but also in the poor. To do that, we need to provide a stable foundation for that development to occur. Reliable power infrastructure is a prerequisite for the continuation of our region's global impact.

Chapter 2: Watts the Problem? – Defining the Issue

Reliable power is essential to any thriving economy, but the Santa Barbara South Coast is experiencing greater challenges than most.

In response to growing concerns from our members (specifically those in the hospitality and advanced manufacturing sectors) regarding electricity reliability, the Chamber established a working group of our affected members and energy experts with the goal of defining the issue, identifying root causes, and proposing solutions that can benefit everyone in our region.

Unexpected Power Outages

Frequent Outages and Financial Impact

- Businesses in our region face frequent power outages, costing an estimated $1.5 billion per year, or 5% of our local GDP[1].
- Grid reliability varies across the South Coast, with Chamber members reporting up to 8.5 outages per year.
- This outage rate is over six times worse than the national average, 8.4 times worse than the average for Southern California Edison (SCE), and more than three times worse than the least reliable electrical utility in the country[2].

Unreliable Communication

- Poor communication regarding unexpected outages exacerbates challenges for businesses.
- Manufacturing-focused employers struggle to decide whether to keep staff working or shut down operations during outages due to a lack of timely information.
- This uncertainty causes significant disruption.

Cost Factor

- Our research compared the region's electricity prices to its reliability.
- The average residential electricity rate is $0.36/kWh, which is 20% higher than the California average, 2.2 times the national average of $0.163/kWh, and higher than any US state except Hawaii[3].
- Using the Price-Reliability Index (PRI)[4] to measure the value received by electrical service customers, the South Coast ranks second-worst in the lower 48 states, after West Virginia.

This indicates that we have some of the most expensive and least reliable power in the nation, outside of Hawaii and Alaska.

The Agilent Story

It started with one email. Frustrated by mounting power outages and a lack of responsiveness from Southern California Edison, local biomedical company Agilent Technologies' message to the Chamber lit the spark for a 3-year initiative to improve electricity reliability for the region's technology and manufacturing companies. For Agilent, outages weren't just inconveniences – they triggered production shutdowns, forced employees to be sent home, and led to a loss in productivity, scrapped materials, and delayed shipments of life-saving products. As an FDA-regulated company, Agilent – like many other companies offering quality jobs throughout the region – have much stricter power reliability needs. Outages can disrupt the manufacturing of critical cancer diagnostics, delaying biopsies for patients.

More than the outages themselves, it was the lack of a meaningful response from SCE that caused their greatest concern. But Agilent was not alone. Their story resonated with many other local companies facing similar disruptions. This collective frustration fueled the Chamber's advocacy, culminating in this Power On document – a collaborative roadmap to address regional reliability and customer service challenges. Today, thanks to this sustained effort, Agilent has seen tangible improvements in reliability after increased engagement from Southern California Edison – even as work continues to solve our broader regional issues. Agilent's story serves as a reminder that when industry speaks with a unified voice and calls upon the leadership of their local Chamber of Commerce, progress is possible.

Planned Outages Require Effective Communication

While planned electricity outages for safety, maintenance, or other reasons are expected, many businesses struggle to make informed decisions due to insufficient communication. Instances of less than 24-hour notice for planned outages have been reported, particularly affecting hospitality businesses like hotels. These short notices disrupt operations and guest experiences, especially during peak travel weekends.

Despite efforts by Southern California Edison to reschedule outages to less disruptive times, discrepancies between the communicated and actual downtime have persisted, sometimes differing by up to 24 hours. Such impacts from planned outages can be as detrimental as unplanned ones, complicating business decision-making.

Power Quality

Business challenges related to electricity extend beyond planned and unplanned outages. Technology and manufacturing companies face additional issues due to power quality problems, such as unstable voltages and AC frequency. These fluctuations can severely disrupt advanced equipment, causing operational, financial, and reputational damage to medical and high-tech businesses, which are crucial to our local economy. Voltage drops, or sags, resulting from the grid's inability to manage fluctuations in power supply and demand, particularly affect high-tech manufacturing businesses in the Goleta region.

The problem is that SCE states that they meet the power quality standards set by the California Public Utilities Commission[5]. The allowable frequency range required by the utility is not precise enough to sustain the high level of exact voltage needed by many businesses in this high-tech hub region. SCE is providing the power according to acceptable standards, but it is not a high-enough standard for what is needed.

This new level of energy that is needed in the most modern and innovative businesses should be addressed. However, it is challenging to solve a problem without defining it. There are differing opinions about the quality of the power behind the meter, and whether the quality standard is indeed being met.

Chamber members are reporting that they have monitored power quality at their manufacturing facilities for multiple years, as close to the meter as possible, with results showing frequent sags, surges, harmonic distortion and other artifacts that exceed the limits of the power quality standards.

SCE is not required to report is power quality data at this level. This means that there is no mechanism to fully verify power quality standards and compare the standard to real-time experiences at local businesses.[6]

A High-Cost Solution

Southern California Edison (SCE) recommended that local businesses install uninterruptible power supplies (UPS) to provide immediate, temporary power during outages. UPS systems use battery power to maintain functionality when the main electricity supply fails.

However, this recommendation presents significant challenges. Estimates for a suitable UPS and battery supply range from $250,000 to over $1 million, totaling upwards of $1.25 million. These costs are prohibitive for small, advanced manufacturing start-ups on the South Coast. Additionally, these figures do not account for the costs associated with the permitting process.

Economic Development and Infrastructure Solutions

Some communities offer economic development grants or loans to help businesses in key industry sectors purchase competitive equipment. Others collaborate with utilities to advocate for upgraded power supply, water, or other infrastructure to ensure success and prosperity.

Our goal is to build consensus on this issue, acknowledge its importance, and identify solutions—whether private, public, or a combination of both.

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[1] Economic impact was estimated from the average percentage revenue loss due to unplanned power outages reported by Chamber members in a range of sectors, and applying that percentage to the South Coast's $30B GDP in 2023.

[2] Benchmarks from US Energy Information Administration Data (https://www.eia.gov/electricity/annual/)

[3] Data from the California Public Utilities Commission (https://www.eia.gov/electricity/annual/) and US Energy Information Administration (https://www.eia.gov/electricity/annual/)

[4] The Price Reliability Index ("PRI") for a given utility or geography is calculated as the product of its SAIDI and the average residential power price in a given period. This methodology was employed by the Working Group to provide a useful benchmark for the 'value' of the electricity service we receive from SCE vs others, as shown in Figure 1. The PRI was computed using rate data from the California Public Utilities Commission (https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-rates), rate and reliability data from the US Energy Information Administration (https://www.eia.gov/electricity/annual/), and SCE's reported SAIDI reliability data (https://www.sce.com/outage-center/outage-information/reliability-reports), which shows far fewer outages than those logged and reported by our members.

[5] Power Quality Standards are defined by CPUC Electric Rule 2 as "Character of Service"

[6] SCE is required to investigate and respond to power quality complaints when filed

Chapter 3: Power Struggle – Identifying the Causes

An Aging Grid in a Cutting-Edge Economy

The South Coast grid, one of California's oldest, faces significant challenges in electricity reliability and power quality. Our aging infrastructure, coupled with historically low growth and development, has led to insufficient capital improvements. Consequently, there's a stark mismatch between our region's status as a world-class innovation hub and its outdated power grid.

Electricity Reliability Analysis

While it's commonly believed that being "at the end of the line" for the SCE region is a major issue, our research indicates that this is not the primary cause of our electricity reliability challenges. The boundary between SCE and PG&E near Goleta is a factor, but not the most significant one.

Another common misconception is that our high-voltage transmission lines through the mountains are at capacity, or are otherwise impacted by vegetation, high winds, wildfires, or other adverse weather conditions in the mountains. While these issues are common across California, our investigation into the data found that over half of our region's outages are caused by equipment failure in our local distribution system.

Put simply, the biggest problem is the failure of transformers, cables, connections, and other power electronics equipment.

Nature Vs. Nurture – Is it the environment or the equipment?

California Grid Transformation

California is undergoing a significant transformation, aiming for an all-electric grid and responding to weather-related natural disasters. Public utilities are mandated to prioritize resilience improvements, such as upgrading transmission lines to insulated conductors and hardening landscapes around distribution lines to minimize wildfire risks.

These efforts are showing results, particularly in our region. In 2022, only 1% of SAIDI[8] outages were due to resilience-related issues, down from 17% the previous year. However, this focus has deprioritized local equipment and distribution upgrades.

Distribution equipment failures are worsening annually. In 2023, SAIDI outages (excluding Major Event Days) increased by 53% from 2022 and 78% from the average of the prior four years. The root cause of our region's declining electricity reliability is multifaceted, involving aging infrastructure, shifting utility priorities, and a reactive approach to grid planning.

While SCE's wildfire resilience efforts have been beneficial, the increasing frequency and duration of outages highlight the impact of deferred maintenance and underinvestment. To maintain our region's status as an innovation hub, addressing these reliability issues must become a priority.

Systemic Challenges in Grid Management

Utilities operate at the intersection of local, state, and federal jurisdictions, navigating various policies, regulations, and incentives while ensuring reliable power delivery. These policies can shift faster than infrastructure can adapt. For instance, the push to electrify the grid conflicts with local readiness, as reliability issues persist.

The grid is immensely complex, and these components are expected to perform without so much as a hiccup for decades before being replaced. However, complex issues typically have systemic root causes. Utilities like SCE face the dual challenge of meeting shifting policy demands and delivering consistent financial performance to shareholders.

Agreeing on root causes and simplifying solutions will require a two-way discussion to get creative and solve our region's electricity reliability and quality challenges.

[7] SAIDI: "System Average Interruption Duration Index" is a measure of the duration of outages experienced by users in a given period, expressed as minutes per year

Chapter 4: Bright Ideas – Proposing Solutions

We have identified four categories of solutions: self-help, grid infrastructure upgrades, customer service & transparency improvements, and advocacy.

Self-Help – Private Sector Solutions

Local businesses and institutions are increasingly exploring microgrids and independent energy systems that offer resilience and stability. These localized solutions, often paired with battery storage, provide a reliable buffer against potential outages, allowing essential services and high-tech businesses to operate seamlessly.

Whether you are a homeowner, a business, or a commercial property owner, there are great local resources to get started exploring self-help solutions to your electricity reliability challenges. See “Resources” in the Appendix for more information.

GridStor Goleta Energy Storage project

The facility contributes to regional reliability by bolstering reliability through moment-to-moment grid stabilization and storing ever more midday solar power for delivery in the evening.

Chamber's Self-Help Solutions for Electricity Reliability

The Chamber is exploring self-help solutions, such as contracting for backup generators in business parks for emergency response, which would streamline the permitting process by obtaining a single permit for multiple businesses.

Other initiatives include assisting businesses with installing solar panels and battery storage. However, this model faces several challenges:

- High costs and unreliable reimbursement wait times for incentives
- Local permitting issues due to unfamiliarity with streamlined processes
- Lack of clarity and long wait times for permits from SCE

The Bega Story

A notable example is Bega North America, a Carpinteria-based, award-winning business. They invested $4 million in solar panels, battery storage, and a self-reliant energy system as part of their goal to achieve carbon neutrality. Despite a Chamber-led celebration to "flip the switch," it took an additional **two years** to obtain the necessary permits and become fully operational.

This example underscores the need for process reform before placing more emphasis on self-help measures funded by individual businesses.

4/13/2023

BEGA submitted their initial NEM application.

11/16/2023

After 7 months of correspondence, SCE rejected BEGA's Load Justification form, claiming it lacked "the estimated annual usage in kWh."

11/20/2023

BEGA resubmitted their Load Justification form using anSCE-specific form to avoid confusion.

1/4/2024

SCE informed BEGA their application had been withdrawn due to misunderstanding of existing versus predicted future usage.

Our research indicates that the region's electricity reliability is below acceptable standards for business growth and community sustainability.

To address this, we propose significant investments in the local grid, particularly in Goleta and Carpinteria, where power quality and reliability issues are most severe. Recent investments in Santa Barbara have proven effective, and this model should be extended to Goleta and Carpinteria, where high-tech and manufacturing businesses are most impacted by reliability issues.

A key area of concern is the "last-mile" of the grid—the local distribution infrastructure. Addressing these challenges requires comprehensive upgrades, including:

- Upgrading transformers to meet modern demand and reduce failure rates.
- Improving local distribution lines to mitigate outages and enhance power stability.

These infrastructure upgrades will improve service reliability for residents and businesses, supporting the region's growing economy and ensuring that the power supply meets the demands of a technology-driven environment.

Customer Service & Data Communication

Customer Service Enhancements

Businesses frequently express frustration over the lack of real-time, actionable information during outages and maintenance events. Timely updates are crucial for adjusting operations, managing staff schedules, and mitigating financial losses. We propose the following enhancements for commercial customers:

- **Real-Time Updates:** Provide regular updates every 30 to 60 minutes during outages or maintenance, including estimated restoration times and changes. Ensure customers can reach a representative for estimated restoration times during outages.
- **Advance Notice:** Offer at least 48 hours' notice before planned outages. If 48 hours is not feasible, provide a minimum of 24 hours' notice. Commit to adhering to scheduled times and inform customers immediately of any changes.
- **Dedicated Representatives:** Assign dedicated SCE account representatives to the top 10 most impacted businesses on the South Coast. These representatives should be readily available to answer questions, address concerns, and provide outage updates. Current feedback indicates that assigned representatives often lack the necessary information to offer real-time, meaningful support.

Data Sharing

Our research reveals a disconnect between the power reliability data experienced by businesses and what is reported by SCE. While these discrepancies are likely unintentional, they hinder businesses' ability to advocate for necessary changes. Improved transparency in electricity reliability reporting is essential for accountability and long-term solutions.

We recommend the following transparency measures:

- **Granular Reporting on Power Quality:** Provide detailed, specific data on power quality issues.
- **Simplified and Accessible Reliability Data:** Improve SCE's data reporting mechanisms to offer clearer, user-friendly access to reliability information. A simplified reporting dashboard or periodic reliability summaries would be beneficial.
- **Independent Review of Reported Reliability Data:** Conduct an independent review of SCE's reported reliability data to ensure accuracy and credibility. This review should identify discrepancies between reported and actual performance and help establish a baseline for future improvements.

Advocacy

Despite high power costs, our region faces poor reliability and low power quality, making electricity one of the top three challenges for business. To address this, all stakeholders—including the Chamber, community members, businesses, policymakers, regulators, and SCE—must take swift, rational action to improve power affordability and reliability on the South Coast.

Collaboration is essential for the proposed solutions to be viable. Electricity reliability is a complex issue that requires a coalition of community members working together and advocating for various solutions.

We recommend the following advocacy actions:

- **Local Distribution System Upgrades:** Advocate to SCE and the California Public Utilities Commission (CPUC) for proactive, swift, and additional upgrades to achieve competitive energy reliability on the South Coast.
- **Customer Service and Transparency:** Advocate to SCE and the CPUC for increased customer service and transparency.
- **Legislative Action:** Advocate for the legislature to address the systemic causes allowing this issue to persist.
- **Funding for UPS Projects:** Advocate for local, state, and federal funding for individual projects to allow uninterruptible power supplies (UPS) on-site.

- **Stakeholder Collaboration:** Collaborate with and convene stakeholders to align on improved energy delivery and create an action plan for solutions measurable at the end-user site.

- **Support the Rate Case:** Advocate on behalf of SCE for increased funding from multiple sources, including rates, dependent upon an infrastructure improvement strategy, roadmap, and performance targets that specifically support our region's expressed needs

Legislative Action

Mandating Geographic Investment Transparency in Utility Rate Cases

California's investor-owned utilities (IOUs), such as Southern California Edison, submit General Rate Cases to the California Public Utilities Commission (CPUC) for rate increase approvals. Current CPUC regulations do not require utilities to provide geographically specific spending plans, allowing discretionary fund reallocation and potentially neglecting high-revenue areas with deteriorating grid reliability.

To address this, we urge the California Legislature to mandate geographic investment reporting and accountability in all future rate cases submitted to the CPUC. This legislation should include:

- **Geographic Investment Reporting:** IOUs must provide a detailed breakdown of how each geographic region will benefit from proposed rate increases, including:
    - Planned capital investments in distribution and transmission infrastructure
    - Grid reliability improvement targets (e.g., reduced outage frequency and duration)
    - Resilience measures for climate change, wildfires, and increased energy demand
- **Direct Tie Between Rate Increases and Regional Improvements:** The IOU must justify how increased customer spending (caused by proposed rate increases) will correspond with regional investment plans and demonstrate measurable benefits to local reliability and power quality.
- **Periodic Accountability Reports:** IOUs must periodically report to the CPUC on actual vs. planned spending on infrastructure upgrades per region and reliability performance metrics (e.g., System Average Interruption Duration Index - SAIDI). They must also justify any fund reallocations between regions. These reports should be publicly accessible for transparency.
- **Oversight and Enforcement:** A state agency, likely the CPUC, should conduct periodic independent audits to ensure IOUs' actions align with the reports. Non-compliant IOUs should submit corrective action plans to the CPUC.

This legislation ensures ratepayer fairness, prevents regions like the Santa Barbara South Coast from subsidizing investments elsewhere, and improves grid reliability by holding utilities accountable for proactive planning. It increases transparency and public trust by providing clear insights into rate spending and prevents fund misallocation by ensuring rate increases directly benefit the paying regions.

Summary of Solutions

Self Help Private Sector Solutions: Local businesses and institutions are turning to microgrids, solar power, and battery storage to enhance energy resilience. However, regulatory hurdles, slow approval processes, and unclear communication present challenges that need to be addressed for wider adoption.

Grid Infrastructure Upgrades: SCE must significantly invest in local grid improvements, especially in Goleta and Carpinteria, to enhance reliability.
Key upgrades should include modernized transformers, improved distribution lines, and a clear roadmap for integrating distributed energy resources.

Customer Service & Transparency: SCE should improve real-time outage updates, provide timely notices for planned outages, and assign dedicated representatives for high-impact businesses. Additionally, greater transparency in power reliability data and independent reviews are necessary to ensure accurate reporting and accountability.

Advocacy: A local coalition should advocate for increased infrastructure investments, improved customer service, and regulatory changes to promote energy reliability. Collaboration between businesses, policymakers, and the utility is essential to drive meaningful reforms.

Legislative Action: Proposed State legislation would mandate geographic investment transparency in rate cases, ensuring local ratepayers see direct benefits from increased electricity costs. Regular reporting and independent audits should hold utilities accountable for regional infrastructure improvements.

The Goleta Water District battery storage units, Corona Del Mar water treatment plant.

Chapter 5: Tales from the Grid - Case Studies

"Best Case" Examples of Power Suppliers

To better understand why Southern California Edison (SCE) has some of the highest electricity rates among investor-owned utilities (IOUs), we selected three comparable IOUs—Tucson Electric Power, Duke Energy, and Nevada Power Company—as case studies. These utilities were chosen based on their similarities to SCE in terms of climate conditions, infrastructure complexity, and population demands. By comparing our local utility to others, we can see that our local situation is not par for the course.

Figure 3

	Average Price
Tucson Electric Power	13.18 cents/kwh
Duke Energy	11.49 cents/kwh
Nevada Power Company	14.87 cents/kwh
Southern California Edison	26.28 cents/kwh

Price

- SCE's prices are, on average, 102% higher (about 2x greater) than the 3 other Investor Owned Utilities we chose to use as case studies (see Figure 3). [2]

- Out of 211 Investor Owned Utilities, SCE ranked 31st in terms of highest prices per/kwh (86th percentile). And 104th out of 3,349 electricity providers (97th percentile). [2]

Environmental Conditions

- SCE: Operates in a diverse climate, ranging from coastal to desert regions, leading to varied energy demands, particularly high during summer months due to air conditioning needs.

- Tucson Electric Power: Serves a semi-arid region with extreme temperatures, resulting in high energy consumption for cooling.

- Duke Energy: Covers a broad geographic area across multiple states with diverse climates, balancing energy demands for both heating and cooling.

- Nevada Power Company: Operates in an arid climate with high temperatures, similar to SCE's inland territories, leading to substantial cooling demands.

Climate Adaptation and Resilience

- SCE: SCE faces significant challenges due to California's wildfire-prone environment, leading to increased financial risks and the need for substantial investments in infrastructure to mitigate fire hazards.

- Duke Energy: Duke Energy has been impacted by natural disasters like hurricanes, necessitating robust infrastructure and recovery strategies to maintain service reliability. [3]

Infrastructure Complexity

- SCE: Manages an extensive and aging infrastructure network, requiring significant maintenance and modernization investments.
- Tucson Electric Power: Maintains a relatively localized grid with a focus on integrating renewable energy sources, resulting in lower transmission losses and infrastructure costs.
- Duke Energy: Oversees a complex infrastructure across multiple states, requiring sophisticated coordination and investment in grid modernization.

Population Demands:

- SCE: Serves a densely populated and economically diverse region, leading to fluctuating energy demands. The high population densities can also increase the complexity of infrastructure maintenance and expansion.
- Tucson Electric Power: Serves a growing population with increasing energy needs (admittedly on a smaller scale compared to SCE). Focused on a growing population rather than existing density has allowed for more targeted infrastructure development.
- Duke Energy: Serves a mix of urban and rural populations across different states, requiring adaptable strategies to meet varied energy demands and regulatory environments.
- Nevada Power Company: Serves a region experiencing significant population growth, particularly in urban centers like Las Vegas, requiring them to continually expand infrastructure.

Sources:

1. https://www.eia.gov/electricity/data.php#sales
2. https://www.eia.gov/electricity/sales_revenue_price/pdf/table_10.pdf
3. https://www.barrons.com/articles/duke-energy-stock-hurricane-milton-outages-64ad2e96

Chapter 6 – Conclusion and Call to Action

Hopefully, the findings in this report make one thing abundantly clear: the South Coast is at a crossroads. We are home to world-class innovation, cutting-edge industries, and a vibrant business community. Yet, we continue to be hindered by an outdated and unreliable electrical grid. This is not just a minor inconvenience; it is a fundamental challenge that threatens our region's economic resilience, competitiveness, and long-term prosperity.

But challenges like these are not impossible to tackle. History has shown that when businesses, policymakers, and community leaders come together with a shared vision, real change happens. It is now our responsibility to take that same approach to electricity reliability—because the stakes are too high to accept the status quo.

The South Coast has never been a region that waits for solutions to come from elsewhere—we create them. Just as we've led in environmental innovation, advanced manufacturing, and cutting-edge research, we now have an opportunity to set a new standard for energy reliability and resilience.

The Chamber is ready to champion this cause—but real change will require all of us working together. The power to shape our future is in our hands.

Let's get to work.

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