

# DER Cost-Effectiveness Workshop

*Guiding Principles, Addressing Equity Concerns, and Changes to the Biennial Update Process for the Avoided Cost Calculator*

April 10, 2025

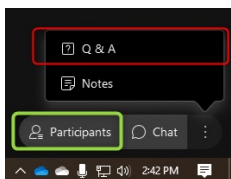


California Public  
Utilities Commission

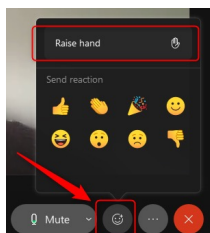
# General Information

- Please use the “**raise hand**” function if you want ask a question verbally and we will unmute you.
- Please use the **Q&A function** to ask questions.
  - This leaves the chat free for general announcements
- This workshop will be **recorded** and the recording and the slides will be made available.

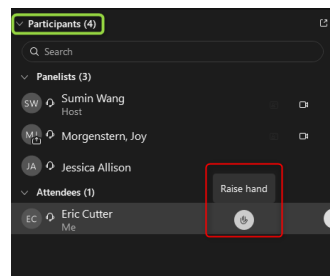
**Q&A Panel**  
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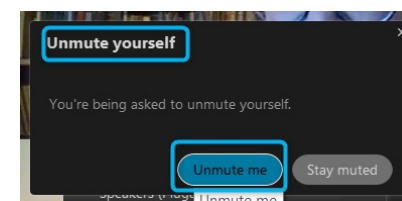
**Raise Hand**  
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**Participants Panel**  
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**Unmute**  
A host will unmute you –  
*then you must click  
button to unmute yourself*



# Agenda

Topic	Presenter	Duration
Introduction and Opening Remarks	Commissioner Houck and ED Staff	10:00-10:10 AM
Overview	ED Staff	10:10-10:15 AM
Block 1	CUE, SEIA, SBUA, and the Joint IOUs	10:15-11:05 AM
Break		11:05-11:10 AM
Block 2	SoCalGas, LGSEC, CLECA, and Vote Solar	11:10-12:00 PM
Lunch Break		12:00-1:00 PM
Block 3	California Public Advocates Office, I-REN, N-REN, 3C-REN	1:00-1:50 PM
Changes to the Biennial Update Process	ED Staff	1:50-1:55 PM
Q&A	ED Staff	1:55-2:15 PM
Next Steps and Close	ED Staff	2:15-2:20 PM

# Opening Remarks

Commissioner Houck



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Utilities Commission



# General Ground Rules



- Staying on time:
  - Time-moderators will ensure everyone has their allotted time and we finish on time
- This is a safe space for sharing ideas:
  - Today, we are sharing ideas and recommendations. We're tackling topics, not people
- We will practice E.L.M.O or “Enough, let’s move on”:
  - This supports time for everyone's input
- Maintaining our purpose: The Guiding Principles, Addressing Equity Concerns, and Changes to the Biennial Update Process for the Avoided Cost Calculator
  - Subject matter outside of these topics will be directed back to the key topics
- Matters outside the scope of R.22-11-013 Track 1 may not be discussed at this workshop

# Workshop Guidelines

- Each presenter will have 10 minutes to present the proposals they submitted to ED staff.
  - Inform staff when you want to change the slide if you are presenting remotely
- There will be a 10-minute Q&A after each block of presentations are finished.
- ED Staff will be keeping track of time to progress the workshop in a timely manner
  - If you go over time, we will end your presentation and move on to the next presenter

# **Stakeholder Presentations Block 1**

## CUE, SEIA, SBUA, and the Joint IOUs



# **ACC GUIDING PRINCIPLES: CUE RECOMMENDATIONS**

# Three Guiding Principles

1. Align the ACC with IRP
2. Ensure procedural transparency
3. Evaluate and address cost-effectiveness and equitable access issues separately



## The Basics

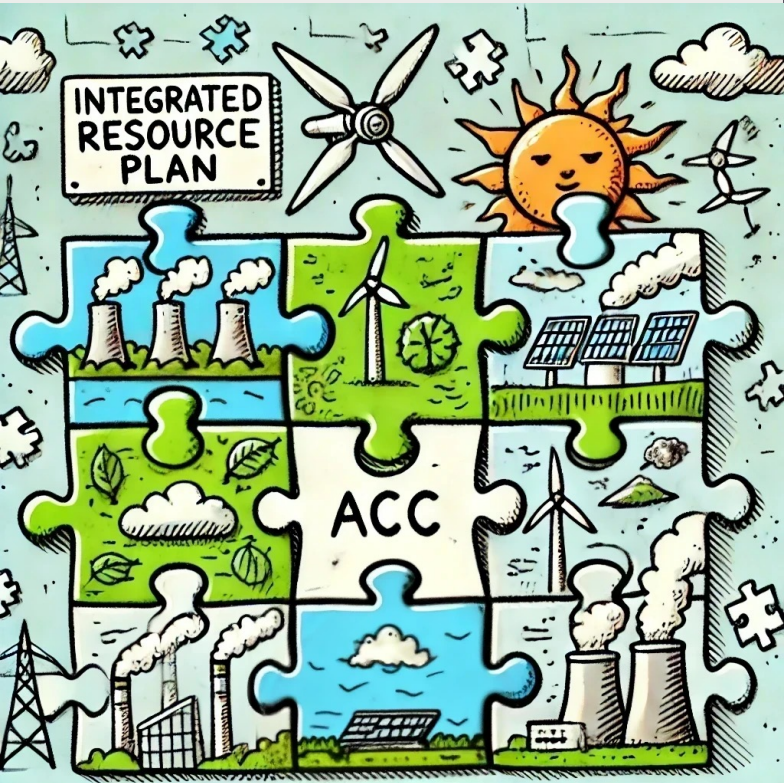
1. IRP identifies least-cost, best-fit portfolio of generation to meet clean energy goals
2. ACC identifies costs to utilities and ratepayers avoided because of DERs
3. ACC is used to determine value of DERs to the grid and payment for that value

# **1: ALIGNMENT**

The Commission Must Align the ACC and IRP

# Why?

- ACC/ IRP alignment ensures apples-to-apples cost comparison of supply-side and demand-side resources
- Alignment ensures most cost-effective resource portfolio selected consistent with least-cost, best-fit mandate
- Ensures DERs owners are appropriately compensated
- Avoids over-burdening ratepayers with high costs, which disproportionately harm low-income customers





## 2: TRANSPARENCY

ACC Updates Should be the Product of Transparent  
Public Process with Robust Stakeholder Engagement

# Why?

- Promotes robust, diverse stakeholder engagement and procedural fairness
- Improves accuracy of the tool, which promotes cost-effective procurement and affordability
- Significant agreement among stakeholders in 2024 ACC Update that process improvements are needed (Ex: No New DER Scenario)

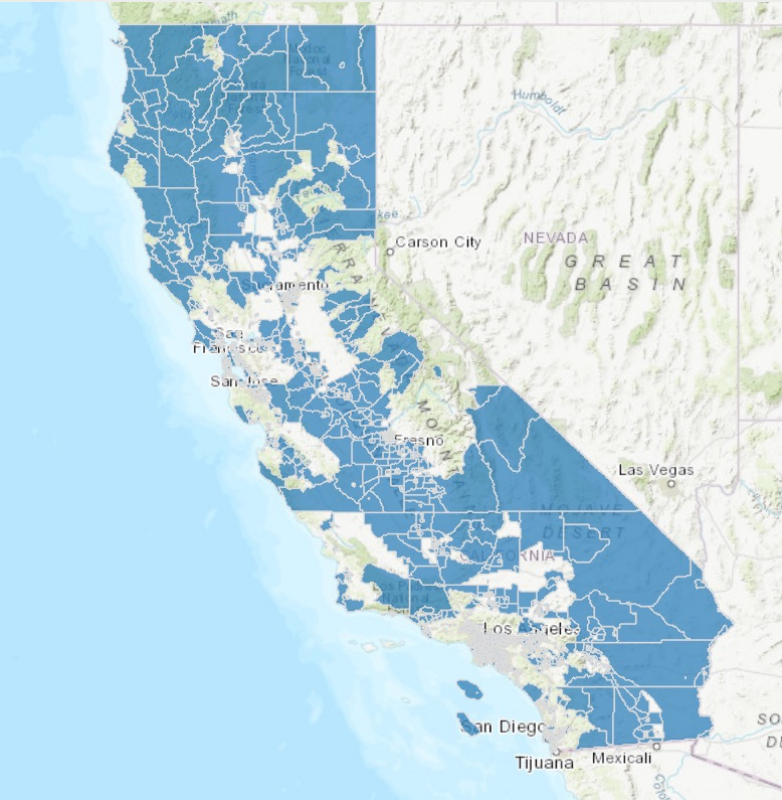


# 3: EQUITY

DERs Cost Effectiveness and DERs Access Issues are Distinct and Should be Addressed Separately

# Why?

- Cost-effectiveness metrics identify least-cost resources; protect low-income customers
- Distributional impact analyses identify impacts on specific sub-populations; can help identify DERs access gaps
- Inequitable access to DERs involves policy questions beyond the scope of the ACC



**THANK YOU**

**COALITION OF CALIFORNIA  
UTILITY EMPLOYEES**

Darion Johnston, J.D.

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# SEIA'S PROPOSED GUIDING PRINCIPLES AND THE CONSIDRATION OF EQUITY IN THE ACC

Tom Beach

Crossborder Energy, Consultant to SEIA

## Proposed Guiding Principles for the ACC

1. The ACC should be an accurate source for the costs that California IOUs avoid or incur when customers install DERs at their premises, or for front-of-the-meter generation interconnected to the distribution system.
2. The ACC should be applicable as a starting point to assess the benefits of all types of DERs, regardless of the DER technology.
3. The ACC should use long-run avoided costs, and should include hourly avoided costs for a 30-year forecast period, such that the avoided costs from the ACC can be applied over the full economic life of DER technologies.
4. The avoided costs used in the ACC should be based on and consistent with the state's current Integrated Resource Plan (IRP) and with the state's goals to reduce GHG emissions.

## Proposed Guiding Principles for the ACC (continued)

5. The ACC's avoided costs should be consistent with the long-run marginal costs used for ratemaking.
6. The ACC should be updated regularly, at least once every two years, on a schedule coordinated with updates to the IRP.
7. To provide relevant information for all of the *Standard Practice Manual* tests, the ACC should be supplemented with the quantification of important societal benefits.



## Considering Equity in Evaluating DER Cost-effectiveness: the Role of the RIM Test

- Stringent – a “No Losers” test means “Hardly Any Winners”
  - RIM test is rarely used for other demand-side resources.
- A RIM score  $< 1$  is not inequitable if there is equal access.
  - Community solar and incentives for LMI customers will promote equal access.
- The RIM test does not measure all the benefits for ratepayers
  - Societal benefits
  - Consider a Societal RIM test that includes such values

## Considering Equity in Evaluating DER Cost-effectiveness: the Role of the RIM Test (continued)

- Distributed generation leads to electrification DERs
  - Storage increases the value of DG.
  - EVs & heat pumps increase loads.
- Customers want diverse, low-cost sources of reliable, delivered electricity.
- A focus on a narrow RIM test ignores that the pie is growing; there should be plenty for all.

# SBUA Comments on ACC Guiding Principles & Equity in DER Cost Effectiveness

Ted Howard

Small Business Utility Advocates

[ted@utilityadvocates.org](mailto:ted@utilityadvocates.org)



# Guiding Principles in Benefit-Cost Analysis...and ACC

## **NSPM Benefit-Cost Analysis (BCA) Principles**

1. Recognize that DERs can provide energy/power system needs and should be compared with other energy resources and treated consistently for BCA.
2. Align primary test with jurisdiction's applicable policy goals.
3. Ensure symmetry across costs and benefits.
4. Account for all relevant, material impacts (based on applicable policies), even if hard to quantify.
5. Conduct a forward-looking, long-term analysis that captures incremental impacts of DER investments.
6. Avoid double-counting through clearly defined impacts.
7. Ensure transparency in presenting the benefit-cost analysis and results.
8. Conduct BCA separate from Rate Impact Analyses because they answer different questions.

# Additional Guiding Principles in ACC

- Alignment with IRP and Other DER-related Proceedings
- DER Technology Neutrality
- Address Equity—from Distributional Equity Analysis
- Undertake refined estimates of DER free ridership, and utilize resulting Net-to-Gross ratios to determine the relative value attributed to DERs by different customer classes
- Apply the economics principle of Diminishing Marginal Utility, which reasons that, all else held equal, the lower the customers' income, the higher the value they place on financial assistance in purchasing a product or service (in this case, DERs)

# Equity Issues in Evaluating DER Cost Effectiveness

- Distributional Equity Analysis—separate from Benefit Cost Analysis
- Benefit Cost Analysis—average costs and benefits for all customers
- Distributional Equity Analysis—how priority populations (e.g. DACs, HTR, ESJ) are impacted
- Identify Equity Impacts via Metrics (e.g. Energy Burden; Pollution Exposure; Service Reliability; Access to Services; Affordability)
- Policymakers Weigh Benefit Cost Analysis in Context of Distributional Equity Analysis, Seeking Optimal Balance and Maximum Net Benefits for Both
- SBUA recommends an expedited CPUC workshop for stakeholder consideration of Distributional Equity Analysis
- See Berkeley Lab Report: *Distributional Equity Analysis for Energy Efficiency and Other Distributed Energy Resources*<sup>2</sup>

# Intergenerational Equity

- The ACC should apply a social discount rate which reflects a fair balance between current and future generations
- The Commission has acknowledged that the appropriate social discount rate may be lower than the 3% currently applied, but lacks the record<sup>3</sup>
- SBUA's Comments (8/23/24) cited several organizations which have concluded that a 2% social discount rate achieves the greatest net benefits: e.g. Federal Council of Economic Advisors, EPA, NY State Department of Environmental Conservation
- The Commission should consider running the ACC with a 2% discount rate, and include the results in the record
- The Commission should consider a stakeholder workshop focused on the optimal social discount rate

## Action Items Recommended:

- SBUA recommends an expedited CPUC workshop for stakeholder consideration of Distributional Equity Analysis
- The Commission should consider running the ACC with a 2% discount rate, and include the results in the record
- The Commission should consider a stakeholder workshop focused on the optimal social discount rate

Ted Howard

Small Business Utility Advocates

[ted@utilityadvocates.org](mailto:ted@utilityadvocates.org)





# ACC Guiding Principles and Addressing Equity

Joint IOUs



# Agenda

- ACC
  - Guiding Principles
- Equity
  - Joint IOU Proposal
  - Where can equity be considered?
  - Limitations of Current Cost Effectiveness Tests
  - Distributional Equity Analysis

## Guiding Principles for the ACC

- The Joint IOUs proposed three guiding principles for the ACC:<sup>1</sup>
  - Avoided Costs in the ACC should be clearly linked to IOU revenue requirements and customer bills, not broader societal or non-energy benefits
  - Avoided Costs in the ACC should reflect costs that are universally avoided by all DERs
  - The ACC should be used for planning, not for the evaluation of utility procurement, solicitations, or compensation for qualifying facilities or DER programs.

<sup>1</sup> Opening testimony of PG&E, SDG&E, and SCE in Response to Administrative Law Judge's Ruling Issuing the 2024 Avoided Cost Calculator Staff Proposal for Party Input (R.22-11-013) ("Opening Testimony"), pg. 41-46.

# Addressing Equity

## Joint IOU Statements on Equity<sup>2</sup>

- The Joint IOUs are open to considering the possibility of standardized or more consistent analysis in the equity context (e.g. Distributional Equity Analysis)
- Current approaches to equity have mostly been piecemeal and a more standardized approach is reasonable.
- Distributional Equity Analysis (DEA), which considers the fair distribution of benefits and burdens across different customer segments, should be considered to assess equity outcomes.
- DEA should be used to supplement and not replace cost effectiveness analysis, which should continue to be based on the tests outlined in the CPUC's Standard Practice Manual.

<sup>2</sup> Opening testimony, pg. 46-57.

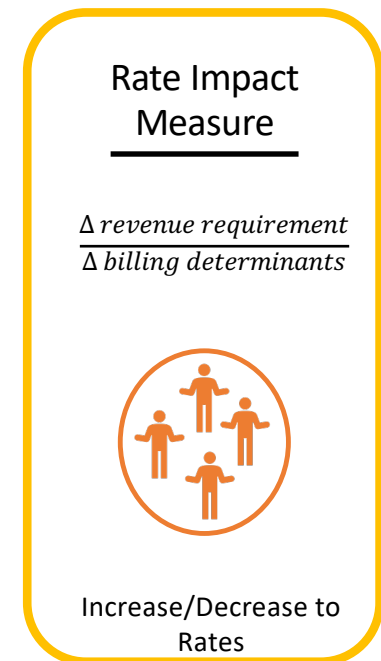
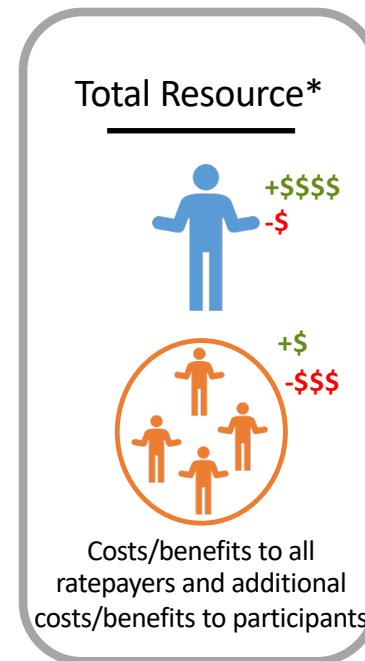
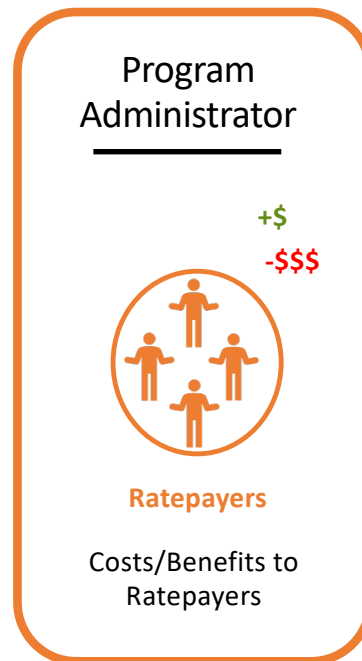
## Where Can Equity Be Considered?

- The ACC only defines and quantifies costs on a system-wide basis. It cannot alone address equity.
  - The ACC must still be accurate as an input to Cost Effectiveness and equity analyses.
- Cost Effectiveness compares costs of programs and benefits in total and whether the program is overall net beneficial.
  - Equity can partially be addressed via cost effectiveness (i.e., costs/benefits to participants vs non-participants).
- Examining equity between different types of customers, such as income groups, requires a distributional equity analysis.

# Cost Effectiveness – A matter of perspective

Different cost effectiveness tests set different boundaries for what costs and benefits are considered. They do not directly address equity.

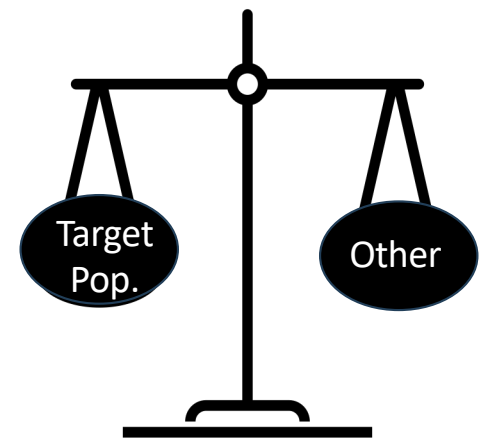
Cost-effective?



\*Societal Cost Test is a variant of the TRC with changes to some of the TRC benefit values

## Distributional Equity Analysis (DEA)

- **What is DEA?** An analytical framework that considers the fair distribution of benefits and burdens across different customer segments and is used alongside cost-effectiveness analysis.
- **How does DEA work?** A DEA separates customers into two distinct groups—target populations and all other customers—to allow analysts to assess how benefits and costs may affect each group. Applying the equity metrics to target populations in a DEA will help decision-makers understand the extent that DERs and programs have the potential to deliver equitable cost-benefits for target populations relative to other non-targeted customers.
- **Recommendations**
  - Examine concepts from the LBNL DEA framework as a starting point to answer the question: *What are the distributional equity impacts of utility resource investments in the context of cost-effectiveness evaluation?*
  - The CPUC can explore complementing benefit-cost analysis with distributional equity analysis results to inform decision-making.





## Summary/Next Steps

- Equity cannot be addressed within cost-effectiveness tests alone and the CPUC should look at complementary analysis, such as DEA, to provide additional insight into how program benefits and costs are distributed among groups of ratepayers.
- Support further workshops/working groups to address the feasibility and applicability of DEA
  - Assess the appropriateness of DEA to certain applications
  - Analytical framework issues (i.e. application, timeframe, populations, pilots, etc.)
  - Data requirements (type, accessibility, costs)
  - Appropriate metrics
  - Guidelines/structure of potential DEA results
  - Invite Lawrence Berkeley National Laboratory (LBNL) to an upcoming workshop/working group to present their DEA solution

# Reference

# Limitations of Current Cost Effectiveness Tests

- Cost effectiveness tests measure net benefits in total from the perspective of a particular group.
  - Participant cost test measures net benefits to participants. It does not reflect costs/benefits to ratepayers.
  - Program Administrator (PAC) measures the costs borne by ratepayers relative to the benefits received by ratepayers.
  - Total Resource Cost (TRC) measures total costs/benefits to ratepayers and program participants together.
    - The TRC doesn't show transfers from ratepayers to program participants, such as through incentives.
  - Rate Impact Measure (RIM) test shows the change in revenue requirement relative to the change in billing determinants as a change in rates.
- The ability of cost-effectiveness to determine which customers pay and which benefit is limited.

# **Q&A: Presentations from Block 1**

## CUE, SEIA, SBUA, and the Joint IOUs

# Break


**Please return by 11:10 AM**



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# **Stakeholder Presentations Block 2**

## SoCalGas, LGSEC, CLECA, and Vote Solar



# **SOCALGAS CUSTOMER DER AVOIDED COST CALCULATOR (ACC) GUIDING PRINCIPLES PROPOSAL**

**CPUC GUIDING PRINCIPLES AND  
EQUITY WORKSHOP**



# Avoided Cost Calculator (ACC) and Cost-Effectiveness

ACC values inform downstream analysis in other proceedings, each with their own goals and evaluation criteria. The ACC needs to be able to accommodate the different, unique, and non-uniform needs of ACC-related programs.

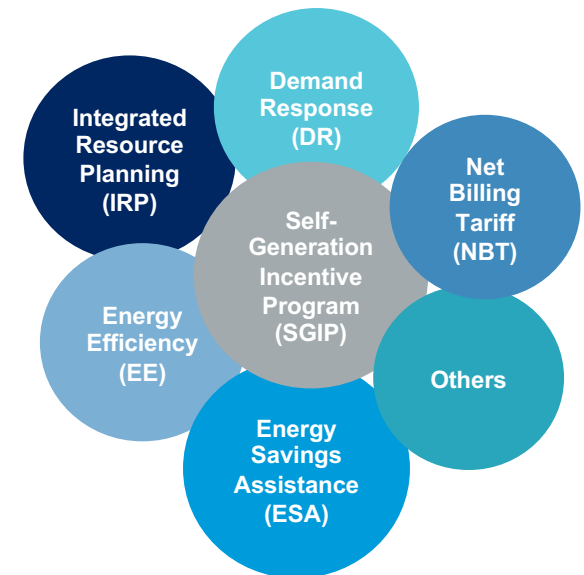
## Gas and Electric ACCs



## Downstream Analysis

Distributed Energy Resource analyses may use ACC values for unique purposes or in different ways.

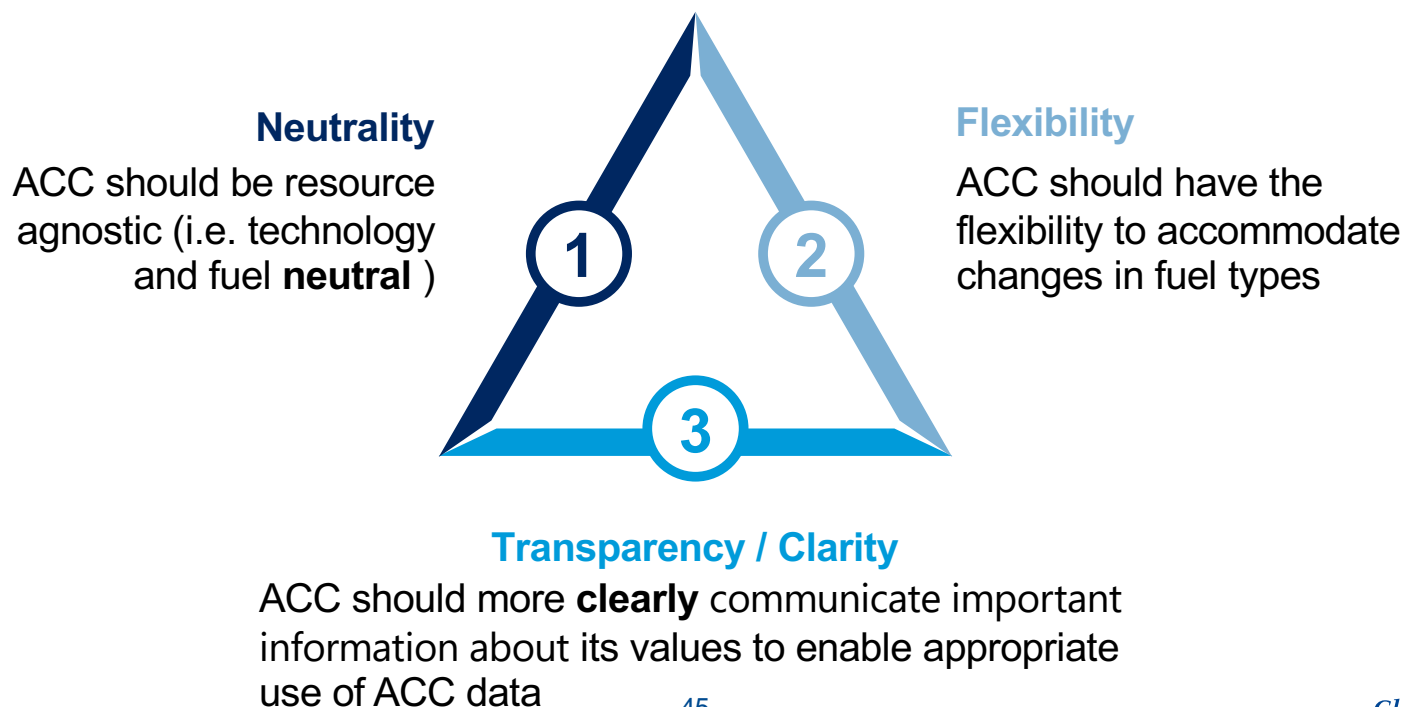
## Resource Activities





# Guiding Principles

SoCalGas's main proposal is to emphasize **neutrality, flexibility, and transparency** in the ACC to enable users to select the appropriate values to suit their purposes



# Guiding Principles: Neutrality and Flexibility

Neutrality and Flexibility can support evaluation and consideration of all potential DER solutions. A diverse range of DERs can increase the pool of cost-effective options, promoting ratepayer affordability.

- » The intent of the ACC calculators is to help find cost-effective DERs by monetizing benefits in \$/therm or \$/kWh
- » The ACC can further help enable a broad selection of potential cost-effective DER solutions by ensuring the ACC is neutral to different DERs
  - For example: supply-side DERs, demand-side DERs, electric-based DERs, and fuel-based DERs
- » Neutrality requires consistent treatment of fuels in the Electric ACC and the Gas ACC
- » Flexibility can accommodate clean fuel blending in pipelines, such as renewable natural gas or hydrogen
- » Neutrality also requires analogous updates and treatments of the Electric and Gas ACCs
  - Only with consistent treatment between both ACCs will users be able to determine when fuel substitution is cost-effective
- » Neutrality and consistent treatment in the ACC can help users find cost-effective DERs, supporting ratepayer affordability

# Guiding Principle: Transparency /Clarity

ACC Values and Outputs should be clearly marked to enable appropriate selection and use of the ACC in downstream analysis

- » The ACC should include clear labels to for the consistent and appropriate use of ACC values
  - Identifying each component's cost category is critically important. Cost category labels could include ratepayer costs, non-ratepayer costs, and energy vs non-energy costs, among others.
  - Current TRUE/FALSE designations for potentially included components in the ACCs lack transparency and may result in the incorrect use of ACC values, potentially resulting in a miss-assessment of the cost-effectiveness of DERs
  - The transparent categorization of ACC values is important for downstream users of ACC values and outputs
- » The ACC should be transparent on the precision of its outputs
  - Some ACC values with 10 or more significant digits imply an extreme level of confidence
  - The ACC should include descriptive statements regarding the relative uncertainty of its inputs/outputs

**Thank You!**



# Guiding Principles for the Avoided Cost Calculator (ACC)

Steven Moss

Partner, M.Cubed

**On behalf of the Local Government  
Sustainable Energy Coalition**

April 10, 2025





LOCAL GOVERNMENT  
**SUSTAINABLE  
ENERGY COALITION**

Contact us: [contact@lgsec.org](mailto:contact@lgsec.org)

## LGSEC Members



# Guiding Principles for the Avoided Cost Calculator (ACC)

Rather than “avoiding utility costs,” ACC should be redefined as an Affordability Cost and/or Reliability Assurance Calculator, calibrated at the local level.

- ACC, properly calibrated, should be applied in a neutral fashion to traditional grid and DER technology.
- Aligning ACC with integrated resource planning requires broader consideration of all available assets and measures to reliably meet demand while advancing social and environmental goals.



# What the ACC Does and Doesn't Do

- Focuses largely on financial costs with a greenhouse gas (GHG) emission adder.
  - Pursues elusive “efficiency criterion” as a mythical measure of social welfare
  - Ignores differences in risk exposure, ancillary economic benefits and other environmental consequences
- Relies on short term market price indicators as full valuation
  - California Independent System Operator (CAISO) market revenues were sufficient to support new investment in a single year (2006) since 2001
  - Uses different basis for generation marginal costs as compared with transmission and distribution
- Ignores CAISO and Resource Adequacy market and operational flaws that suppress prices
- Ignores hedging value to avoid price volatility
- Ignores past values created by existing resources, and treats long term investments as speculative market plays
- Ignores differences between grid and behind-the-meter (BTM) distributed energy resources (DERs) that create value
  - Ignores differences in reliability at grid- and meter levels, including reserve margins and line losses
  - Ignores resilience differences at grid- and meter levels, with over-reliance on transmission
- Assumes social costs and benefits are measured through uniform dollar basis
  - Ignores differences in affordability and how households “value” an incremental dollar differently
  - Ignores bill and risk protections created by customer-owned investments





# California Public Utilities Commission (CPUC) skeptical of framing used in ACC

CPUC “Report to the Legislature in Compliance with PUC Sec.913.3” (May 2016)

*The concern with the IOUs’ approach is two-fold. First, using the measure of savings (or costs avoided) proposed by utilities, few, if any resources in any of the large IOUs’ portfolios would be considered cost-effective – even comparatively low-cost hydroelectric and nuclear resources. By comparison, the overall generation rates in 2015 were approximately 10 cents per kWh for PG&E, meaning that the average cost of generation resources far exceeded the avoided costs calculated by the large IOUs. Second, the large IOUs’ calculations are **based on short-run avoided costs** and it seems **unlikely that the large IOUs would be able to procure 20 percent** or more of their portfolios accounted for by the RPS program at these prices.*

Pacific Gas and Electric’s generation rate is 17.9 cents/kilowatt-hour(kWh); San Diego Gas and Electric, 23.5 cents/kWh in the summer and 9.6 cents/kwh in the winter; Southern California Edison, 11.1 cents/kWh.

Compared to a total ACC of 13.6 cents/kWh, including transmission and distribution and environmental adders

**The same 2016 disconnect is occurring today.**





# Refocusing the ACC

1. Subject all utility investments to scrutiny with ACC and disallow any excess costs
  - a. All alternatives should be measured against this metric
2. Any resources increasing utility revenue requirements should be measured against an affordability index that reflects rate and bill changes across income groups
3. Along with energy and capacity metrics, changes in reliability and resilience at the customer meter valued and balanced against costs among alternatives
4. Changes in market cost volatility as well customer bill uncertainty should be valued and included
5. Job creation and economic activity metrics added for each resource choice plus changes in these from rate changes from new resources





CALIFORNIA LARGE  
ENERGY CONSUMERS  
ASSOCIATION

Guiding Principles for the  
Avoided Cost Calculator (ACC)  
CLECA Recommendations  
(R.22-11-013)

# Guiding Principles Should Promote An Accurate, Transparent, Predictable, And Consistent ACC Update Process

## Key Goals:

- Encourage a Broad Resource Inclusion Approach
- Transparent, Simple, and Understandable Update Process

# The ACC Process Should Be Truly Technology Agnostic

- The ACC process should not substitute for the full IRP process by determining the particular avoided cost value stream characteristics of resources necessary to be cost-effective
- The ACC process should provide the resource characteristic input data sufficient to run the Integrated Calculation for all resources relied upon in the IRP PSP
- The ACC process should consider resources like demand response programs that must be re-contracted annually as marginal resources

## The ACC Update Process Should Strive For Transparency, Simplicity, and Understandability

- Avoid unnecessary complexity whenever possible
- Ensure stakeholders have sufficient time to review and comment on major process updates, including understanding the proposed results based on the current ACC year underlying assumptions
- Maintain consistency and predictability as much as possible; avoid large swings in resulting avoided cost values, and strive for regulatory certainty
- The ACC value streams for avoided distribution and transmission costs should be fairly and consistently applied based on interconnection voltage, regardless of resource type; and that consistent policy should be aligned in DER-related proceedings



VOTE SOLAR

February 2025

# Broader Community- Level Benefits

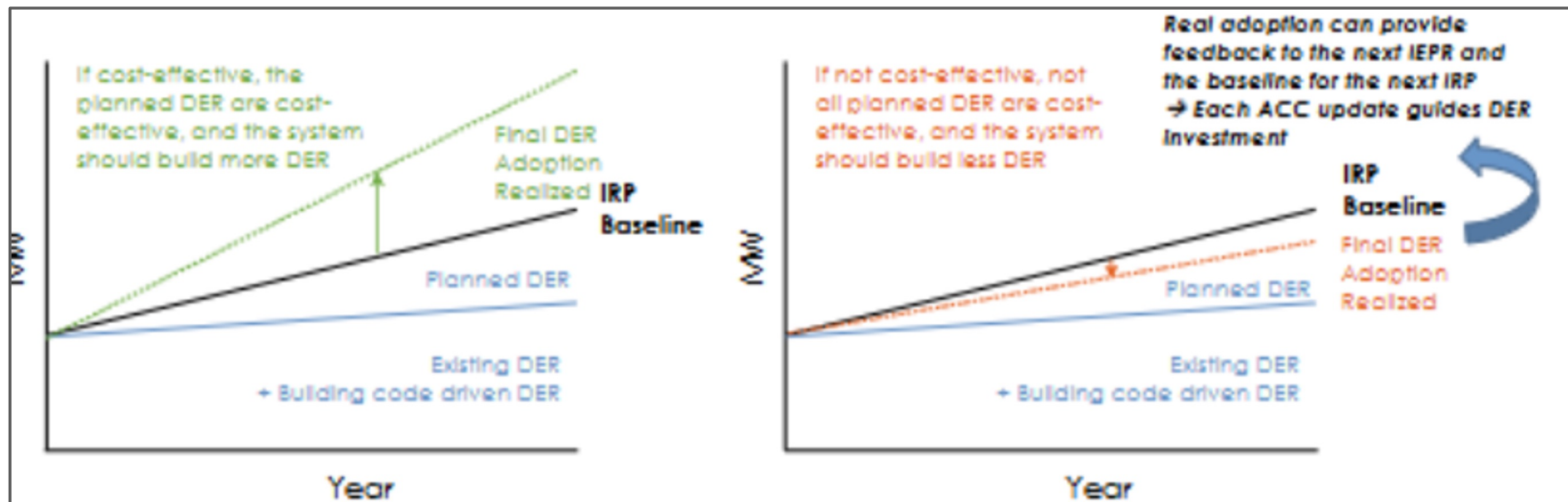
# Energy Planning is Complex

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- The Air Resources Board's Scoping Plan establishes a target range for the electricity sector's greenhouse gas (GHG) emission reductions.
- The Energy Commission's Integrated Energy Policy Report (IEPR) provides a demand forecast to anticipate statewide load in the next decade or longer.
- The CPUC's integrated resource plan (IRP) forecasts system generation resource needs to meet the customer demand forecast by the IEPR 10 years in the future.
- The CPUC's resources adequacy (RA) process identifies resources needed to meet customer demand and ensure reliability today.
- CAISO's transmission planning process (TPP) identifies the transmission needs to interconnect and balance the system supply described by the IRP with the customer demand projected by the IEPR.
- The TPP relies on the CPUC's IRP planning targets. CAISO receives the IRP results as inputs into its TPP. The CAISO also considers recommendations from the Energy Commission's IEPR. The plan is updated annually, and culminates in a CAISO Board of Governors-approved transmission plan that identifies the needed transmission solutions and authorizes cost recovery through CAISO transmission rates, subject to federal regulatory approval.



# Where does the ACC fit in?



# Where does equity fit in?

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D.24-07-015 authorized use of the SCT as an informational cost test to “enable the Commission to consider the societal benefits of avoided energy generation.” The information-only cost test uses the following four societal components:

1. Base Societal Cost of Carbon (SCC), and High SCC,
2. Three percent discount rate,
3. Base value of Methane Leakage, and
4. Statewide Air Quality Adder of \$14/MWh

## “Each ACC Update Guides Investment”

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If so, then equity demands fair accounting.

The ACC undervalues DER benefits by excluding known local benefits from C/E tests that DERs deliver.

- Improved local resiliency
- Improved local health outcomes
- Improved use of the built environment (reducing land use tension)

At the same time, the ACC may underestimate transmission cost because reliability is the primary metric instead of *also* considering customer-level (distribution system) resiliency.

- Cross-sector optimization is complicated but critical to avoid wasted investment.

**Result:** DER avoided costs are undercounted

1. Transparency

**GP1:** The 2026 ACC shall be used for **all cost tests** included in the Standard Practice Manual

**How it started (2001) SPM:** “The tests...in this manual are not intended to be used individually or in isolation. The results of tests that measure efficiency, such as the Total Resource Cost Test, **or the Societal Test**, and the Program Administrator Cost Test, must be compared not only to each other but also to the Ratepayer Impact Measure Test.” p.6

**How it's going (2022)**

Evaluator's Response
While we appreciate your comments, the Societal Cost Test (SCT) is not approved for use in the NEM Lookback Study. This analysis will maintain what we are calling the Societal Total Resource Cost (sTRC) test, which only differs from the TRC in the lower discount rate.

## 2. Consistency

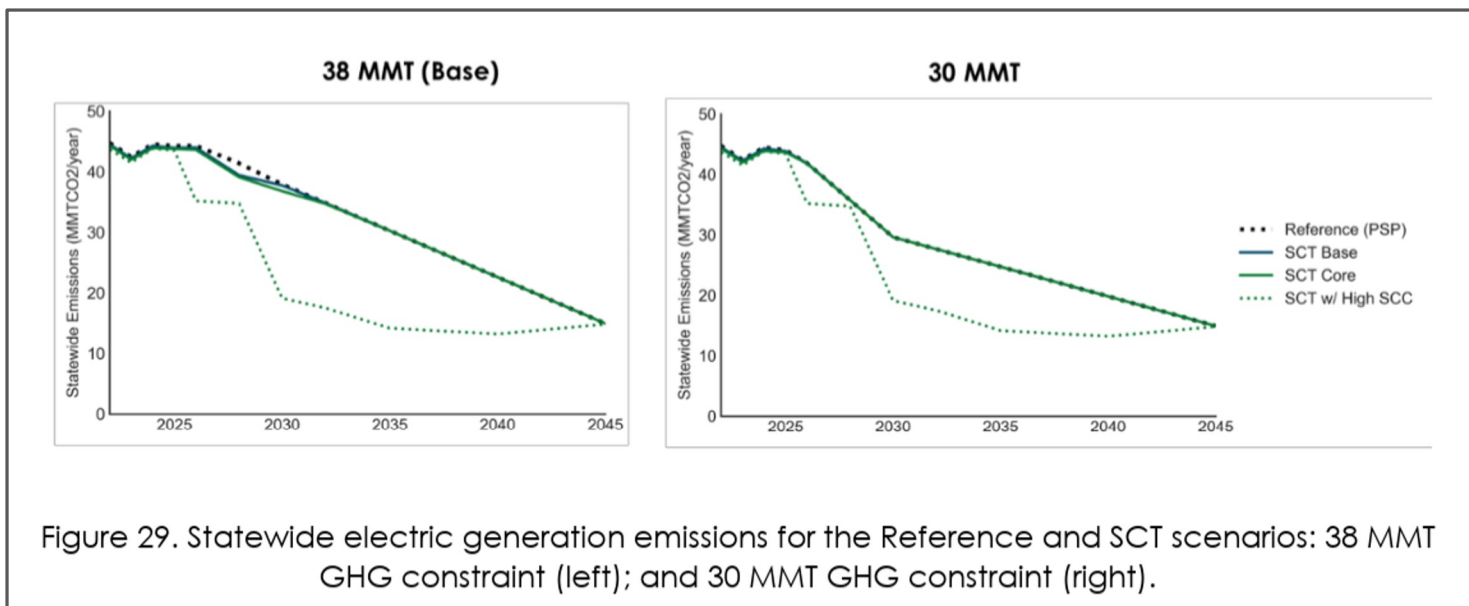
**GP2:** The 2026 ACC shall ensure the **total benefits** of distributed energy resources are included to ensure a consistent resource evaluation framework

The Societal Cost Test should be analyzed each and every time the other CBAs are run.

TABLE 5-1: SUMMARY OF COST-EFFECTIVENESS RESULTS BY ELECTRIC UTILITY

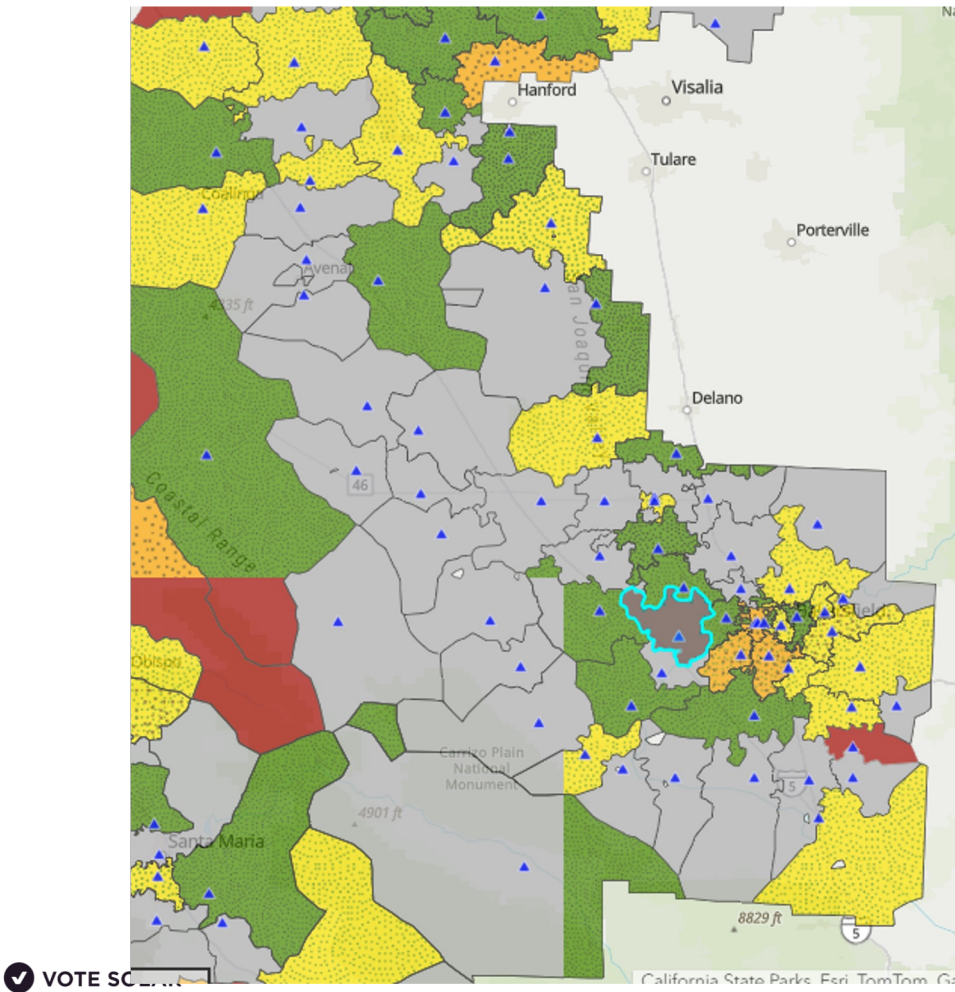
Utility	Weighted Average Benefit-Cost Ratio			
	PCT	TRC	RIM	PA
PG&E	1.81	0.80	0.33	41.08
SCE	1.54	0.91	0.49	10.99
SDG&E	2.03	0.84	0.31	129.58
Total	1.77	0.84	0.37	22.98
NPV Total Benefits (\$M)	21,329	7,960	7,576	7,576
NPV Total Costs (\$M)	12,041	9,462	20,583	330

# Half a penny?!?



- The system cost increases are negligible for the SCT Core scenario, after subtracting out the societal cost adders, while the SCT with High SCC scenario increases costs by about \$1B/yr in 2030, which is equivalent to a 0.5¢/kWh increase in average rates. This scenario effectively accelerates the State’s midcentury GHG reduction targets to 2030.
- No gas capacity is retired in any scenario due to system reliability needs.

# Case Study: Tupman



1 of 2	
TUPMAN BANK 1	
Upstream Bank Name	TUPMAN BANK 1
Upstream Substation ID	25456
Upstream Substation Name	TUPMAN
Division	Kern
GNA Facility Type	BANK
2024 Peak Load (MW)	22.26
2025 Peak Load (MW)	32.4
2026 Peak Load (MW)	31.36
2027 Peak Load (MW)	31.34
2028 Peak Load (MW)	31.23
Peak Loading (%)	204.52
Facility Rating (MW)	15.84
Last Update on Map	10/23/2024, 7:30 PM

# Proposed Solutions

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1. Localize health benefits in the avoided cost framework
1. Localize resiliency benefit based on customer/community level metrics (CAIDI > SAIDI)
  - a. Distribution system optimization (i.e. microgrids instead of default capacity upgrade)
1. Include a 'built environment' kicker in ACC+
  - a. E.g. Constrained circuit kicker (Tupman example)
1. Update risk analysis for Transmission and Distribution systems in/near cities
  - a. PSPS events likely to increase in future
1. Place the SCT as a co-equal cost-test



# **Q&A: Presentations from Block 2**

## SoCalGas, LGSEC, CLECA, and Vote Solar

# Lunch Break

**Please return by 1:00 PM**



California Public  
Utilities Commission

# **Stakeholder Presentations Block 3**

The Public Advocates Office

Inland REN (I-REN)

Northern REN (NREN)

Tri-County REN (3CREN)



# Guiding Principles and Equity Considerations within the Avoided Cost Calculator

R.22-11-013

April 10, 2025

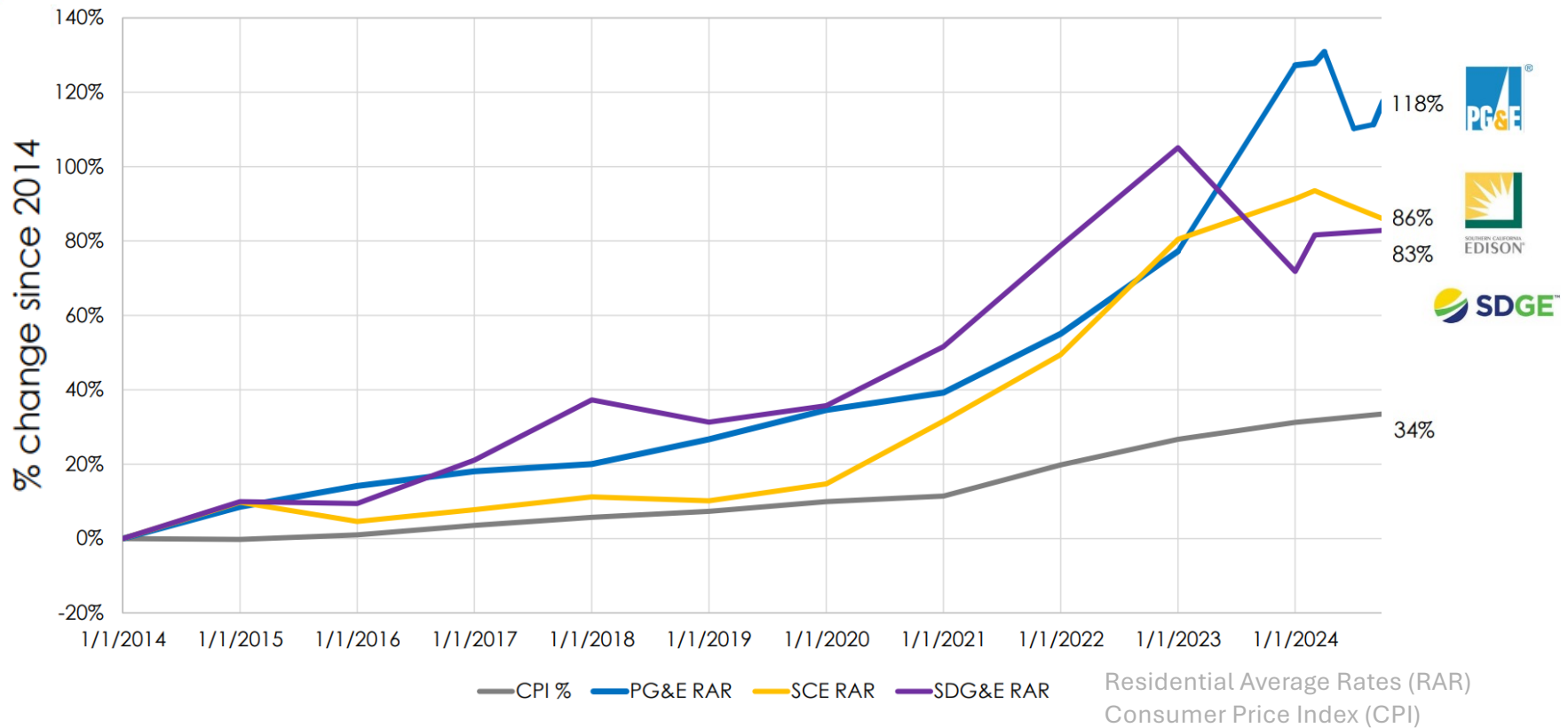
- 1. The Role of the Avoided Cost Calculator (ACC)**
- 2. Rate Affordability**
- 3. Proposed Guiding Principles**
- 4. Non-Energy Benefits (NEBs) in the ACC**
- 5. Impact on the Net Billing Tariff**
- 6. Conclusion**

# The Role of the Avoided Cost Calculator (ACC)

- The ACC is a technical calculator.
  - Calculates the monetary value of avoided utility costs from distributed energy resources (DERs).
  - Crucial tool to compare supply and demand-side resources.
- Standardized ACC-based cost-effectiveness (CE) tests help assess the value of DER programs.
  - DER Program evaluation may use CE tests in conjunction with other equity considerations.



# Electric Rates are Rising to Unaffordable Levels, Surpassing Inflation



Source: <https://www.publicadvocates.cpuc.ca.gov/-/media/cal-advocates-website/files/press-room/reports-and-analyses/241205-public-advocates-office-q3-2024-rates-report.pdf>

# Rate Affordability and the Governor's Order

- Executive Order (EO) N-5-24 (Oct. '24) identified electric rate affordability as a critical issue for the state.
- The EO instructed the CPUC to examine the benefits and costs to ratepayers of all programs including DER programs.
- The ACC is a critical tool for benefit/cost analysis and, as such, implementing the EO.



# Proposed Guiding Principles

Goal: Memorialize existing best-practices.

1. Only include cost categories utilities avoid.
2. Only include clearly known and identifiable costs.
3. Technology-neutral.
4. Strive for incremental improvements.
5. All DER Programs should utilize the ACC consistently in cost-effectiveness tests.
6. All methods, inputs, and assumptions should be transparent.

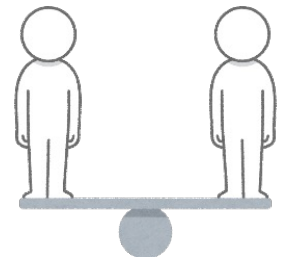


# Equal Access Principles

Goal: Foster equal access and identify barriers.

*All DER programs should:*

7. Collect data on low-income and disadvantaged customer participation.
8. Conduct distributional equity analysis and evaluate barriers to entry.
9. Provide equal access while maintaining cost-effectiveness standards.
10. Evaluate low-income and disadvantaged customer participation outside of cost-effectiveness tests.



## NEBs in the ACC

- The ACC determines the value of Utility costs that are avoided by DERs.
- Adding non-utility costs, such as those associated with NEBs, distorts the value of DERs.
  - This makes the ACC less valuable as a tool for comparison between supply and demand side resources as well as between different DERs.
- D.24-08-007 (p. 40) determined it was not necessary to include NEBs or societal costs in the ACC.
  - The CPUC already adopted the Societal Cost Test to consider the value of NEBs on DER programs.

# The ACC's Impact on the Net Billing Tariff (NBT) and Rooftop Solar Adoption

- The NBT compensates rooftop-solar customers based on the value of energy determined by the ACC.
- Recent data shows new rooftop solar installations have resumed a growth trajectory under NBT with ACC-based compensation rates.
- An accurate, unbiased ACC is crucial to balancing ratepayer value with sustained growth in rooftop solar.



# Questions?

## Contact

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James Ahlstedt: [james.ahlstedt@cpuc.ca.gov](mailto:james.ahlstedt@cpuc.ca.gov)





# Inland Regional Energy Network (I-REN) Guiding Principles and Equity Considerations for the Avoided Cost Calculator (ACC)

ACC Workshop on Guiding Principles, Equity, and Changes to the Biennial Update Process

Thursday, April 10, 2025

# Who We Are

The **Inland Regional Energy Network (I-REN)** is a partnership of Coachella Valley Association of Governments, San Bernardino Council of Governments, and Western Riverside Council of Governments partnered to serve Inland Empire communities.

- Authorized by CPUC in 2021
- EE portfolio includes public sector, codes and standards, and workforce education and training programs

*“Involving the types of customers and communities that I-REN’s Business Plan will serve is important to help California meet its energy and climate goals.”<sup>11</sup>*

- CPUC Decision 21-11-013 Approving I-REN





# I-REN Region & Communities

## A snapshot of who I-REN represents:

- 11% of CA population, 17% of the state's land area
- 52 cities and 78 unincorporated county areas
- 17 tribes
- 16% of residents who live in poverty (38% Hispanic and 34% Caucasian)

## Riverside County

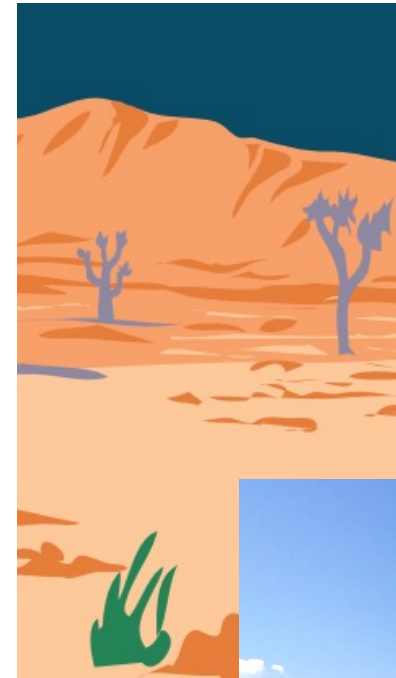
- Population: 2,189,641
- Covers: 7,208 square miles
- Population Density: 304 people per sq. mile

## San Bernardino County

- Population: 2,035,210
- Covers: 20,105 square miles
- Population Density: 101 people per sq. mile

## Climate Zones

- 10, 14, 15, and 16





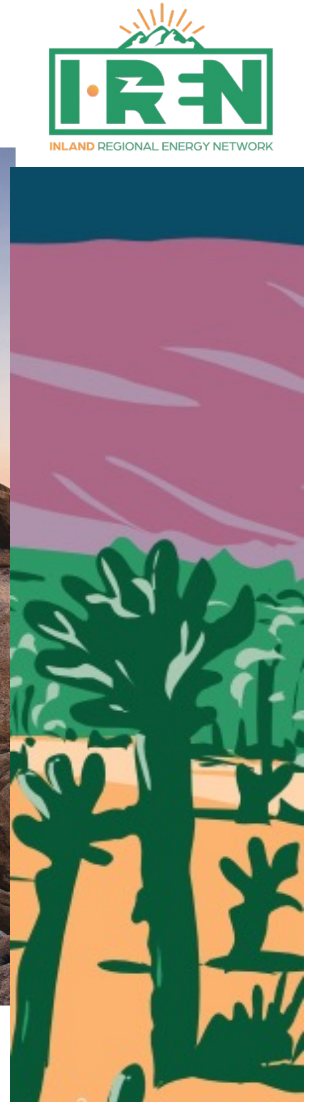
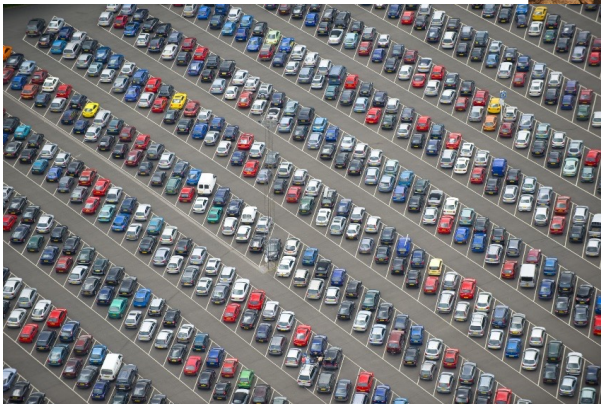
# ACC Equity Guiding Principles

- Climate-Responsive Valuation
- Locational and Environmental Justice Integration
- Health and Resilience Co-benefits Consideration



# Extreme Weather

- Extreme temperatures
- Wide variety of climates
- Peak pricing presents challenges
- Urban Heat Islands (UHI) may be considered



# Independent Communities, Tribal Land



- 17 tribes
- Distinct economic challenges and energy needs
- Differences in load profile should be explored
- Consider incorporating perspectives of Municipal Utilities (MOUs) and tribal communities

# Air Quality



- Higher than average commuting times
- Proximity to other high traffic regions
- Important logistics hub; warehousing and trucking
- Baseline pollution levels within the IE could justify greater weight to GHG reductions.





# Outages and Reliability

- Proportionally higher number of power shut offs
- Reliability concerns intersect with extreme weather
- ACC Power mix assumptions may address this, but could it be more precise?



# Summary and Recommendations

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Avoided Costs are not experienced equally

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Equity multipliers and adjustments can support underserved communities

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Weighting of equity flags in claims files can improve TRC

---

Added distribution impact overlay can generate benefits for DER projects

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April 2025

# Equity Considerations for the ACC

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Northern Rural  
Energy Network



# Northern California Rural REN

## Regional Energy Networks

- Local governments authorized to deliver ratepayer-funded energy efficiency programs

## Northern California Rural Regional Energy Network (NREN)

- Serves North Coast and Sierra regions
- Focus on equity for rural communities





## Geographic Considerations

Region	Counties Served	Land Area (Sq. Miles)	Population
North Coast	Humboldt	3,568	136,132
North Coast	Mendocino	3,507	91,145
North Coast	Lake	1,255	68,024
Sierra	Alpine, Amador, Butte, Calaveras, El Dorado, Lassen, Mariposa, Nevada, Placer, Plumas, Sierra, Sutter, Tuolumne, Yuba	21,014	1,309,382

## Climate Zones

NREN includes Climate Zones:

- 1, 2, 11, 12



## Resiliency Considerations

- Rural communities are more likely to face grid instability
  - Lower grid reliability
  - Lack access to backup power



# Tri-County Regional Energy Network



# Agenda



About 3C-REN



Our Community



Housing Stock Considerations



Public Health and NEBs Considerations



Questions



# About 3C-REN

3C-REN (Tri-County Regional Energy Network) is a collaboration between the three counties of San Luis Obispo, Santa Barbara and Ventura, in the California Central Coast region. The tri-county region represents a diverse service area that is geographically isolated from utility hubs and has pockets of rural and disadvantaged communities as well as large, underserved Spanish-speaking populations.



# Our Community

- **Agricultural Economy:** Major agricultural hubs throughout all three counties
  - Labor centers for many farmworkers that are often low-income, may be undocumented, and can face challenges such as wage theft, pesticide exposure, and lack of access to healthcare
- **Wealth Disparities:** Stark economic and geographic divides that isolate more agricultural and lower-income communities
  - Santa Barbara County has the 2nd-highest poverty rate out of all 58 counties in the entire state, according to a recent report released by the Public Policy Institute
- **Housing Affordability:** Housing costs exacerbate displacement and affordability issues for lower-income residents
  - San Luis Obispo has rental pricing pressures from Cal Poly San Luis Obispo and Cuesta College
  - Santa Barbara has some of the highest housing costs in CA
  - Ventura provides crucial affordable housing through mobile homes, but many are at risk of redevelopment





# Housing Stock Considerations

- Low-income households often occupy older homes or are renters
  - Older housing stock tends to have less efficient appliances, poor insulation, and outdated electrical systems
  - Renters have limited control over energy efficiency upgrades, appliance choices, and thermostat settings, making it harder to respond to price signals
- Participation in Demand Response programs often requires smart thermostats, Wi-Fi-enabled appliances, or home automation systems
- Households with high energy burdens may prioritize bill stability over potential savings from dynamic TOU pricing





# Public Health and NEBs Considerations

- **Many DACs have higher exposure to air pollution and associated health issues due to proximity to industrial zones, highways, and power plants**
  - In the 3C-REN region, the communities of Oxnard and Port Hueneme neighbor the Ormond Beach Generating Station, creating environmental justice work for organizations like CAUSE (Central Coast Alliance United for a Sustainable Economy)
- **Pollution, like energy, is not evenly distributed**
  - The public health burden of fossil fuel generation is not evenly distributed
  - If avoided health costs are not differentiated by location, it is not capturing all aspects of the benefits of energy efficiency and clean energy programs in high-risk areas
- **Equity Segment NEB Study (D.23-06-055) expected to begin March 2025**





# Questions

Alejandra Tellez  
Deputy Executive Officer  
Ventura County  
[Alejandra.tellez@ventura.org](mailto:Alejandra.tellez@ventura.org)

# **Q&A: Presentations from Block 3**

## California Public Advocates Office, I-REN, NREN, and 3CREN

# Changes to the Biennial Update Process for the Avoided Cost Calculator



California Public  
Utilities Commission

# Current Timeline

- July 2025: Staff Proposal published
- August 2025: Workshop on Staff Proposal
- November 2025: Opening Testimony and Rebuttal Testimony served
- January 2026: Evidentiary hearing
- February 2026: PSP finalized, Opening briefs
- March 2026: Reply briefs
- June 2026: Proposed Decision published
- July 2026 (>30 days after PD publishes): Decision voted on by the Commission
- July 2026: Draft calculator published
- August 2026 (>6 weeks after Draft calculator published): Draft Resolution published
- September 2026: Workshop on draft calculator
- October 2026 (>30 days after publication of Draft Resolution): Resolution voted on by the Commission

# Proposed Timeline

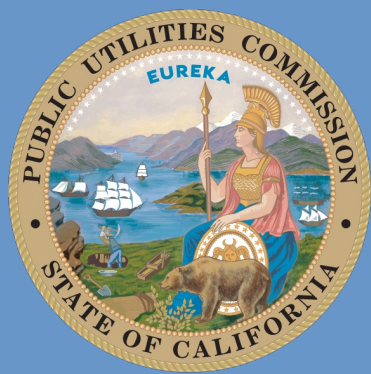
- February 2026: PSP finalized
- April 2026: Staff Proposal published, workshop on Staff Proposal, opening and reply comments submitted
- May 2026: Opening and Reply Briefs submitted
- June 2026: Proposed Decision published
- July 2026 (>30 days after PD publishes): Decision voted on by the Commission
- August 2026 (after decision is issued): Draft Resolution with draft calculator included published
- Late August 2026: Workshop on the draft calculator
- September 2026 (>30 days after Draft Resolution publishes): Resolution voted on by the Commission

# Questions on the Proposed Timeline Changes

## Next Steps

- Links to the workshop recording, slides, and transcript will be emailed to the R.22-11-013 Service List and posted on the [DER Cost-Effectiveness](#) webpage
- A Ruling covering the proposed biennial update process changes will be issued soon; comments on the ruling are due 20 Days after issuance
- Thank you for your participation today!





# California Public Utilities Commission