

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Consider  
Distributed Energy Resource Program Cost-  
Effectiveness Issues, Data Access and Use,  
and Equipment Performance Standards.

Rulemaking 22-11-013  
(Filed November 17, 2022)

**OPENING COMMENTS OF  
THE CALIFORNIA EFFICIENCY + DEMAND MANAGEMENT COUNCIL ON  
PROPOSED DECISION ADOPTING THE SOCIETAL COST TEST**

June 13, 2024

**Joseph Desmond**  
**Executive Director**  
**California Efficiency + Demand**  
**Management Council**  
849 E. Stanley Blvd #264  
Livermore, CA 94550  
Telephone: 925-785-2878  
E-mail: [policy@cedmc.org](mailto:policy@cedmc.org)

**Luke Tougas**  
**Consultant for**  
**California Efficiency + Demand**  
**Management Council**  
849 E. Stanley Blvd #264  
Livermore, CA 94550  
Telephone: 510-326-1931  
E-mail: [l.tougas@cleanenergyresearch.com](mailto:l.tougas@cleanenergyresearch.com)

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**I. INTRODUCTION**

The California Efficiency + Demand Management Council (the “Council”) submits these Opening Comments on the Proposed Decision Adopting the Societal Cost Test (“Proposed Decision” or “PD”), mailed in Rulemaking (“R.”) 22-11-013 (Customer Distributed Energy Resource (“DER”)) on May 24, 2024. These Opening Comments are timely filed and served pursuant to Rule 14.3 of the Commission’s Rules of Practice and Procedure and the instructions accompanying the Proposed Decision.

**II. BACKGROUND**

The Council is a statewide trade association of non-utility businesses that provide energy efficiency, demand response, and data analytics services and products in California.<sup>1</sup> Our member companies employ many thousands of Californians throughout the state. They include energy efficiency (“EE”), demand response (“DR”), and distributed energy resources (“DER”) service providers, implementation and evaluation experts, energy service companies, engineering and architecture firms, contractors, financing experts, workforce training entities, and energy efficient product manufacturers. The Council’s mission is to support appropriate EE, DR, and DER policies, programs, and technologies to create sustainable jobs, long-term economic growth, stable and reasonably priced energy infrastructures, and environmental improvement.

**III. SUMMARY OF THE COUNCIL’S POSITION**

The Council supports adoption of the Societal Cost Test (“SCT”) but strongly opposes doing so on an information-only basis. Instead, it should be binding with a Non-Energy Benefits

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<sup>1</sup> Additional information about the Council, including the organization’s current membership, Board of Directors, antitrust guidelines and code of ethics for its members, can be found at <http://www.cedmc.org>. The views expressed by the Council are not necessarily those of its individual members.

(“NEBs”) Working Group immediately convened to update the four proposed SCT inputs, and identify and quantify the NEBs that DER programs can provide. The updated SCT inputs and NEBs should then be included in the next update of the Avoided Cost Calculator (“ACC”). In the interim, only a single Social Cost of Carbon (“SCC”) should be used – the \$155/metric ton (\$2020) High SCC – given the highly dated vintage of the data underlying the two proposed SCC values. However, should the Commission retain a Base and High SCC value, additional details are needed in how they will be utilized. This is critical to ensure transparency and consistency in how the SCT is applied.

The Council requests the Commission consider these comments and revisions to the PD based on the comments below and the modifications in Appendix A.

#### **IV. THE COMMISSION SHOULD ADOPT THE SCT AS BINDING AND IMMEDIATELY COVENE A WORKING GROUP TO IDENTIFY AND QUANTIFY OTHER NEBS FOR INCLUSION IN THE NEXT ACC UPDATE**

The Council supports adoption of a SCT but strongly opposes adopting it on an information-only basis.<sup>2</sup> Instead, it should be adopted as a binding test in conjunction with the Total Resource Cost (“TRC”) Test. There is very little danger of overstating the societal value of a DER program because, though the proposed four inputs capture the societal benefits of a DER program, it does not capture the wide range of NEBs that a DER program can conceivably provide. Such a limited set of SCT inputs will most likely yield understated SCT values.

The decision should also direct the Energy Division to immediately convene a NEBs Working Group with the task of developing the guidelines for a study to identify and quantify all of the potential DER program NEBs as well as update the initial four SCT inputs, especially the SCC for reasons discussed below. This study should be completed by summer 2025 so that these NEBs can be included in the next update of the Avoided Cost Calculator which is expected to go into effect in January 2026.

At minimum, the NEBs Working Group should consider the following NEBs:

a. Load shifting benefits

Under the right market structure, load shifting enables a flattening of the load curve by incentivizing customers to meet their electricity needs (“take”) during periods of surplus generation, lower energy prices, and lower emissions (due to higher renewables production),

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<sup>2</sup> Proposed Decision, at p. 44 (Ordering Paragraph 1).

while reducing their consumption (“shed”) during periods of relative scarcity and higher emissions. According to the *Final Report of the California Public Utilities Commission’s Working Group on Load Shift* (“Load Shift WG Report”), in addition to avoiding renewable generator curtailment, the benefits of load shifting include:<sup>3</sup>

1. Energy Cost Reductions: By reducing the need to dispatch conventional generators, Load Shift has the potential to lower the marginal cost of generation in both day-ahead and real-time energy markets;
2. Emission Reductions: Where conventional generator dispatch is avoided, Load Shift also reduces both GHG emissions and local particulates, contributing to the mitigation of climate change, improving local air quality, encouraging environmental justice;
3. System, Local, and Flexible Resource Adequacy: Load Shift is not currently recognized in the current Resource Adequacy (“RA”) framework, but it has the potential to reduce peak and ramping needs, at both the system and local level;
4. Transmission Capacity: Like the impact on RA demands, Load Shift may contribute to a reduced need for high-voltage transmission;
5. Distribution System Services: Load Shift may reduce the cost of distribution systems while easing operations by giving operators new flexibility to shift load off circuit peaks, increase load in locations where distributed generation currently exceeds demand, and where the resource is inverter based, support voltage regulation;
6. Customer Bill Savings: Load Shift provides customers with the opportunity to reduce both volumetric and demand charges, shifting their consumption to periods of relatively low costs.

In addition to flattening the load curve, load shifting capability can provide system-wide benefits including, but not limited to avoided renewable generator curtailment, energy cost reductions, emission reductions, system resilience, reduce distribution and transmission system congestion, distribution system services, and customer bill savings.

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<sup>3</sup> *Final Report of The California Public Utilities Commission’s Working Group on Load Shift*, 2019, at pp. 3-4, which can be found here: [https://gridworks.org/wp-content/uploads/2019/02/LoadShiftWorkingGroup\\_report.pdf](https://gridworks.org/wp-content/uploads/2019/02/LoadShiftWorkingGroup_report.pdf).

- b. Mitigation of the effects of current and anticipated grid condition changes, including load growth, greater reliance on renewables, and forecasted long term impacts of climate change

Driven by its aggressive decarbonization goals, the state’s electric resource mix is changing significantly over a comparatively short period of time. These changes are challenging the stability of the grid for several reasons. As stated in *Advanced Strategies for Demand Flexibility Management and Customer DER Compensation: Energy Division White Paper and Staff Proposal*:

In addition to the widespread curtailment of renewable energy, the ability of the bulk system operator to ensure system reliability is also under duress, due in large part to:

1. Increasingly steep system ramping needs. The CAISO forecasts a 60% increase in the maximum three-hour ramp of system net load, from 15,600 megawatts in 2019 to 25,000 megawatts in 2030...
2. Increasing reliance on use-limited and intermittent supply resources. The penetration of use limited resources, such as energy storage or [Supply Side] DR resources, and intermittent resources, such as solar or wind, is growing rapidly. This, combined with adverse climate change impacts, such as extreme heat waves and drought, has contributed to increasing reliability challenges for California’s grid.<sup>4</sup>

Despite often being use-limited resources, if deployed properly, DERs can reduce the pressure of operating the electric grid by providing ramping services, reducing the rate and magnitude of ramping needs, and facilitating the integration of growing amounts of intermittent renewables.

The Council suggests using the National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources (2020) (“NSPM”) as a primary resource in considering any updates or changes to the modernized SCT.<sup>5</sup> This NSPM is designed to provide objective, policy- and technology-neutral guidance that regulators, utilities, consumer advocates, DER proponents, state energy offices, and other stakeholders can apply using a systematic

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<sup>4</sup> *Advanced Strategies for Demand Flexibility Management and Customer DER Compensation*, June 2022, at p. 14, which can be found here: <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/demand-response/demand-response-workshops/advanced-der---demand-flexibility-management/ed-white-paper---advanced-strategies-for-demand-flexibility-management.pdf>.

<sup>5</sup> This manual and related materials, including prior NSPM publications, can be found here: [www.nationalenergyscreeningproject.org/R/national-standard-practice-manual/](http://www.nationalenergyscreeningproject.org/R/national-standard-practice-manual/).

approach to develop benefit-cost analysis practices that inform decisions regarding which DERs merit acquisition or support from utilities. The manual incorporates and expands upon the 2017 NSPM for Assessing Cost-Effectiveness of Energy Efficiency Resources (“NSPM for EE”).<sup>6</sup>

c. Community-based benefits

DER NEBs can also provide general benefits to local communities in the form of jobs, local economic development, general societal and participants health & safety, comfort, and local resilience to catastrophic events like wildfires and earthquakes.

**V. THE PROPOSED SCC OF CARBON ARE OUTDATED SO ONLY THE VALUE OF THE HIGH SCC SHOULD BE USED**

The Council generally supports three of the proposed input values for all DER programs.<sup>7</sup> The three percent Social Discount Rate, 2.3 percent Base Value of Methane Leakage, and \$14/MWh Statewide Air Quality Adder are reasonable and generally have a good basis.<sup>8</sup> However, it is unclear why it is necessary to use two different SCCs. Furthermore, the SCC values are outdated so, to compensate for this fact, the Commission should only use the \$155 (\$2020) / metric ton value of the proposed High SCC.

The PD directs that the SCT be conducted with a Base SCC value of \$53/metric ton and a High SCC value of \$155 (both in \$2020) to ensure that “the Commission can have a range of policy options to determine the best societal outcome while balancing ratepayer costs and affordability.”<sup>9</sup> The Council disagree with using a Base and High SCC for two reasons. First, it is unclear exactly how the two resulting SCT values would be used by the Commission to make a determination on the cost-effectiveness of a DER program. The Council can foresee a potential scenario in which parties will argue over which SCC should carry more weight or how they should be used in conjunction with one another.

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<sup>6</sup> NSPM In March, 2022, the NSPM published, Methods, Tools and Resources: A Handbook for Quantifying Distributed Energy Resource Impacts for Benefit-Cost Analysis, a Companion Guide to the *National Standard Practice Manual* which can be found here: [www.nationalenergyscreeningproject.org/national-standard-practice-manual/](http://www.nationalenergyscreeningproject.org/national-standard-practice-manual/).

<sup>7</sup> Though this may be implicit, the Council recommends the final decision explicitly adopt the definition of DERs indicated on page 5, footnote 2 in the *Societal Cost Test Impact Evaluation* (January 2022): “‘Distributed Energy Resources’ or ‘DERs’ refers to all behind-the-meter electric sector resources. It encompasses both traditional load-reducing measures such as energy efficiency and behind-the-meter solar, and also carbon-reducing measures that add load such as electrification.”

<sup>8</sup> Proposed Decision, at p. 44 (Ordering 2).

<sup>9</sup> *Id.*, at p. 28.

Second, the accuracy of the proposed Base and High SCC values is not representative of the higher carbon-induced damage from more recent projects. According to the PD, the proposed Base and High SCC values were derived by Energy Division Staff from the Obama administration's Interagency Working Group ("IWG") estimates, which were also adopted as interim values by the Biden administration.<sup>10</sup> To add more detail, the Biden administration adopted the previous values from the Obama administration, but the data used had not been updated since 2010. The 2013 and 2016 updates to the IWG SCC model did not include changes to the actual data used. Given the amount of time that has elapsed and, with this passage of time, more insights into the value of climate change-related damage, more recent values should be used. Indeed, the PD states that "recent scientific studies and literature support using higher values of SCC."<sup>11</sup> Consequently, the Commission should use the proposed value for the High SCC until a new SCC based on more recent data and analyses can be developed in the NEBs Working Group.

Another important reason for adopting the proposed value for the High SCC is to ensure that the full benefits of energy efficiency ("EE") fuel substitution measures are accounted for. This is critical because these measures can be powerful drivers of electrification, a key element to decarbonization. The SCT Report states that fuel substitution has by far a greater impact on emissions than displacing natural gas generation:

However, due to decades of improvements to pollution control technology at fossil fuel power plants, as well as investment in tens of GWs of renewable energy, natural gas power generation is only responsible for about 2% of the total air quality impacts associated with power generation, buildings, and transportation in California (Figure 5). This means that the potential for the electric sector, and any measures that reduce gas generation in the electric sector (such as electric energy efficiency), to impact air quality is minimal in comparison to the potential for measures such as electrification to impact air quality. Thus, it is crucial that any SCT that is implemented captures the air quality benefits of electrification.<sup>12</sup>

The SCT Report also demonstrates that Single Family Space Heating Electrification can deliver far greater societal benefits if they are accurately accounted for.

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<sup>10</sup> Proposed Decision, at p. 26.

<sup>11</sup> *Id.*, at p. 28.

<sup>12</sup> SCT Report, at p. 10.

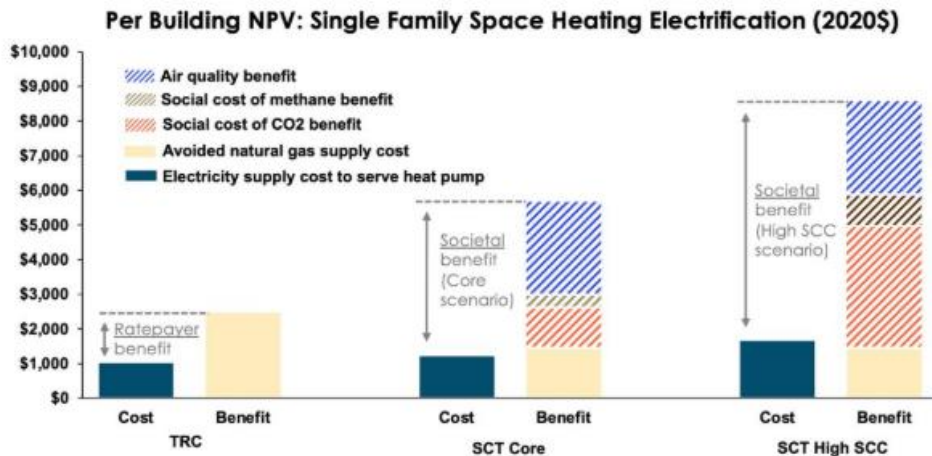


Figure 3. Cost effectiveness of a sample building electrification measure under a TRC vs the "Core" and "High SCC" SCT scenarios.

Unfortunately, many of the fuel substitution measures available for EE are not cost effective under the current TRC calculation using the 2024 ACC.<sup>13</sup> The PD expresses concern that a higher SCC could cause rates to increase and decrease electricity affordability;<sup>14</sup> however, Footnote 5 of the SCT Report correctly states that an increase in rates would only occur be necessary if DER budgets rise.<sup>15</sup> Indeed, EE program expenditures are far below their budgets so a higher SCC would not necessarily lead to higher rates even with a higher Societal value. As it stands now, according to the California Energy Data and Reporting System, the total 2023 EE budget was \$952 million and expenditures were only \$591 million.

## VI. MORE DETAILS ARE NEEDED ON HOW THE SCT WOULD BE APPLIED

The PD is not clear on exactly how the SCT would be applied other than to say that it would be on an "informational basis."<sup>16</sup> Notwithstanding the Council's recommendation that the SCT be adopted as a binding test using a single SCC, the Commission should provide some guidelines on how it plans to utilize the SCT. The Council identifies some initial key questions:

<sup>13</sup> Reviewing the 24,058 deemed energy efficiency permutations for a residential HPWH and HVAC fuel substitution, 91% have a TRC <1 before any program costs are even added. Only about 3% of the permutations are likely to have a TRC >1 once typical program and administration costs are included. See <https://www.caetrm.com/measure/SWWH025/07/>; <https://www.caetrm.com/measure/SWHC044/04/>; and <https://www.caetrm.com/measure/SWHC045/03/>

<sup>14</sup> Proposed Decision, at p. 38 (Finding of Fact 25).

<sup>15</sup> SCT Report, at p. 6 (Footnote 5).

<sup>16</sup> Proposed Decision, at p. 44 (Ordering Paragraph 1).



1. Will a DER program with a TRC value that is below the cost-effectiveness threshold be approved if the DER program's added SCT value pushes the Adjusted TRC (i.e., TRC adjusted for SCT values) above the cost-effectiveness threshold? If yes, would the Adjusted TRC only need to meet the cost-effectiveness threshold or would it need to exceed it by a specific minimum amount?
2. If the Commission disregards the Council's recommendation to utilize only one SCC, this will inevitably result in a range of SCT values (consisting of two data points); how will these two values be applied? For instance, for DER programs that are not cost-effective under the TRC only, if the Adjusted TRC was only cost-effective under the High SCC, would the Commission find that it is cost-effective?

If the SCT is adopted on an information-only basis, it will be especially critical for the Commission to provide clear explanations of how the SCT results affected the determination of a DER program's cost-effectiveness. This is critical for the sake of transparency and consistency to ensure that Program Administrators have as clear an understanding as possible of how the Commission will apply the SCT.

## **VII. CONCLUSION**

The Council asks that the Proposed Decision be modified for the reasons stated above. Those needed modifications are included in Appendix A (Proposed Modifications to Findings of Fact, Conclusion of Law, and Ordering Paragraph) attached and incorporated by reference hereto.

Dated: June 13, 2024

Respectfully submitted,

/s/ JOSEPH DESMOND  
Joseph Desmond  
Executive Director  
California Efficiency + Demand  
Management Council  
849 E. Stanley Blvd #264  
Livermore, CA 94550  
Telephone: 925-785-2878  
E-mail: [policy@cedmc.org](mailto:policy@cedmc.org)

## APPENDIX A

### **THE CALIFORNIA EFFICIENCY + DEMAND MANAGEMENT COUNCIL PROPOSED FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDERING PARAGRAPHS FOR THE PROPOSED DECISION ADOPTING THE SOCIETAL COST TEST**

The Council propose the following modifications to the Findings of Fact, Conclusions of Law, and Ordering Paragraphs in the Proposed Decision Adopting the Societal Cost Test, mailed in R.22-11-013 on May 24, 2024 (“Proposed Decision”).

Please note the following:

- A page citation to the Proposed Decision is provided in brackets for each Finding of Fact, Conclusion of Law, or Ordering Paragraphs for which a modification is proposed.
- Added language is indicated by **bold type**; removed language is indicated by **bold strike-through**.
- A new or added Finding of Fact, Conclusion of Law, or Ordering Paragraph is labeled as “**NEW**” in **bold underscored** capital letters.

#### **PROPOSED FINDINGS OF FACT:**

13. [38] ~~The aAdoptingioneof a binding an information-only SCT can be done without inflating the SCT value of a DER program because the proposed avoided social costs of carbon are outdated and because the SCT does not include all Non-Energy Benefits that DERs can providegives the Commission the flexibility to consider and balance multiple factors and achieve broader social goals, such as those outlined in the DER Action Plan 2.0 and the ESJ Action Plan, when appropriate.~~

20. [39] Energy Division staff, in compliance with the IDER Decision, tested two values of SCC, the High SCC and the Base SCC, **and are based on 2010 data.**

22. [39] The High SCC, which reflects the 95th percentile of possible climate impacts from IWG’s modeling, assumes approximately \$1**4455** (in nominal 2020 dollars) of damages per metric ton of carbon dioxide emitted.

25. [39] Using the SCT results of modelling the High SCC value to guide the approval of demand-side resource programs could lead to increased electric rates and decrease affordability **if the program budgets increase.**

~~26. [39] Adopting both the Base SCC and High SCC values as inputs in the SCT provides the Commission with analyses of a range of societal outcomes and costs.~~

~~27. [40] Conducting the SCT with both the Base SCC and High SCC values provides the Commission with analyses of a range of societal outcomes and costs as well as policy options to determine the best societal outcome while balancing ratepayer costs and affordability.~~

**NEW. The Staff Report shows that using the four proposed SCT inputs undervalues the societal benefits of energy efficiency fuel substitution measures.**

**NEW. The four societal costs do not reflect all of the potential Non-Energy Benefits that DERs can provide.**

**NEW. The two proposed social costs of carbon are based on 2010 data.**

**PROPOSED CONCLUSIONS OF LAW:**

1. [42-43] The Commission should adopt the SCT with the following four inputs:

~~(a) Two Values for the Social Cost of Carbon (SCC): Base SCC = per metric ton values (in nominal 2020 dollars) in the range of approximately \$53 in 2020 and approximately \$81 in 2045 High SCC = per metric ton values (in nominal 2020 dollars) in the range of approximately \$155 in 2020 and approximately \$249 in 2045 (95th percentile of possible climate impacts)~~

(b) Social Discount Rate of three-percent

(c) Base Value of Methane Leakage (Based on the National Average Natural Gas Leakage Rate of 2.3%)

(d) A Statewide Air Quality Adder of \$14 per megawatt-hour

3. [43] The Commission should adopt the SCT as an ~~information-only~~ **binding** cost-effectiveness test.

4. [43] The Commission ~~should not~~ use the results of the SCT in conjunction with the TRC as the primary determinant in making cost-effectiveness assessments and funding decisions for DER programs.

~~5. [43] The Commission should retain the TRC as the primary DER cost-effectiveness test in making cost-effectiveness assessments and funding decisions for demand-side resource programs.~~

6. [43] ~~As an information-only cost-effectiveness test,~~ The Commission should review and consider the results of the SCT to assess the cost-effectiveness of DER programs.

**NEW. The Energy Division should immediately a NEBs Working Group to update the SCT inputs, and identify and quantify the NEBs that DERs can provide for inclusion in the next Avoided Cost Calculator update.**

**PROPOSED ORDERING PARAGRAPHS:**

1. [44] The Societal Cost Test is adopted as an additional binding information-only cost-effectiveness Distributed Energy Resource test.

2. [44] The following values are adopted as inputs in the Societal Cost Test (SCT):

(a) Social Discount Rate of three-percent.

(b) A Statewide Air Quality Adder of \$14 per megawatt-hour.

(c) ~~Two Values for the~~ Social Cost of Carbon (SCC):

~~(i) Base SCC = per metric ton values (in nominal 2020 dollars) in the range of approximately \$53 in 2020 and approximately \$81 in 2045;~~

~~(ii) High SCC = per metric ton values (in nominal 2020 dollars) in the range of approximately \$155 in 2020 and approximately \$249 in 2045 (95th percentile of possible climate impacts); and~~

(d) Base Value of Methane Leakage (Based on the National Average Natural Gas Leakage Rate of 2.3%).

The values adopted in this decision as inputs for the SCT may be re-evaluated during any Avoided Cost Calculator update cycle as appropriate.

**NEW. The Energy Division is directed to convene a NEBs Working Group to update the SCT inputs adopted in this decision, and identify and quantify all other NEBs; the work of the NEBs Working Group will be completed by June 30, 2025 for inclusion in the next Avoided Cost Calculator update.**