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24-OIIP-03 and SB 100, Comment on Non-Energy Benefits and Social Costs

The attached comments supersedes TN# 256483.

Additional submitted attachment is included below.


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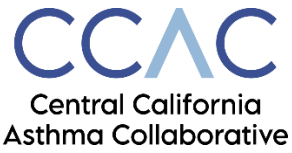
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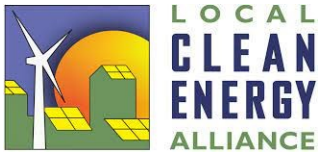
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ENVIRONMENT
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May 21, 2024

RE: 24-OIIP-03 and SB 100, Comment on Non-Energy Benefits and Social Costs.

To the California Energy Commission,

The Center for Biological Diversity ("Center"), Central California Asthma Collaborative, California Environmental Justice Alliance, Vote Solar, The Climate Center, Clean Coalition, 350 Bay Area California Alliance for Community Energy, Local Clean Energy Alliance, GRID Alternatives, The Protect Our Communities Foundation, the Building Energy, Equity & Power ("BEEP") Coalition, the Local Government Sustainable Energy Coalition, and Environment California provide the following comments on the California Energy Commission's ("CEC") Order Instituting Informational Proceeding, 24-OIIP-03, to integrate non-energy benefits ("NEBs") and social costs into energy planning and investment decisions ("NEBs and Social Costs OIIP"). This comment also informs the current SB 100 process and is submitted following the April 16, 2024 NEBs Workshop for the 2025 SB 100 Report.

I. INTRODUCTION

As a preliminary matter, we thank the CEC for granting the February 5, 2024 Petition of the Center, Central California Asthma Collaborative, California Environmental Justice Alliance, Asian Pacific Environmental Network, Greenlining Institute, Local Clean Energy Alliance, Sierra Club California, The Climate Center, Center on Race, Poverty and the Environment, Clean Coalition, 350 Bay Area, GRID Alternatives, The Protect Our Communities Foundation, the BEEP Coalition, the Local Government Sustainable Energy Coalition, and Environment California to initiate the NEBs and Social Costs OIIP to determine methodologies to integrate NEBs and social costs into "CEC analyses, policies and programs."[1] "Including non-energy benefits and social costs in CEC analysis and decision-making provides a more holistic understanding of the impacts and benefits of investments and decisions."[2] The Petition is attached as Attachment A.

NEBs "represent the array of diverse impacts of energy programs and projects beyond the generation, conservation, and transportation of energy."[3] These include improved health, safety and comfort to individuals, as well as NEBs that "accrue to society at large," including local job creation, increased community resilience, improved air quality and other environmental benefits,

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[1] CEC Order No: 24-0313-05b, *In the Matter Of Non-Energy Benefits and Social Costs*, Order Instituting Informational Proceeding, *available at* https://efiling.energy.ca.gov/GetDocument.aspx?tn=255178&DocumentContentId=90863.

[2] *See* CEC Findings, Order No 24-0313-05 *available at* https://www.energy.ca.gov/filebrowser/download/6144?fid=6144#block-symsoft-page-title.

[3] CEC 2022 IEPR Update at A-9.

such as reduced water use and water quality improvements.[4] Because the failure to consider these latter issues harms society at large, they are also often referred to as social costs.[5]

Contrary to certain parties' claims, NEBs and social costs are not speculative.[6] California has simply not yet completed work to determine their values, either quantitatively or qualitatively, and incorporating them into energy planning and decision-making.[7] This comment provides two alternative methodologies to do so in the context of the ongoing SB 100 pathway analysis. This comment also provides resources that illustrate certain approaches to valuing NEBs and social costs. Certainly, "the CEC may also consider how other federal, state, or local agencies incorporate NEBs and social costs into their policies, programs and analyses."[8] Finally, this comment emphasizes that adequate consideration of NEBs and social costs should not be further delayed due to other parties' unsubstantiated arguments that an adequate consideration of public health and environmental factors would increase electricity rates, discourage electrification, or otherwise impede California's goals for carbon-free, resilient, affordable and equitable energy.

II. SB 100 Report NEBs and Social Cost Methodologies Must Inform Resource Procurement and Investment Decision-Making to the Extent Feasible.

The development of the 2025 SB 100 Report must be refined by and work in tandem with the NEBs and Social Costs OIIP.[9]

As proposed in the SB 100 workshops, the 2025 SB 100 Report methodology could silo NEBs and related social cost impacts to a *post hoc* evaluation role that does not inform decision-making, and effectively "zero's out" their values, which is improper.[10] As illustrated in the current Pathway Analysis, the CEC proposes to include NEBs and social costs as metrics to identify and evaluate the NEB and social cost impacts of various resource portfolios or scenarios, which are formulated without considering NEBs and social costs.

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[4] *Id.* at A-9; *see also* Joint Agencies, 2025 SB 100 Report Vision, *available at* https://efiling.energy.ca.gov/GetDocument.aspx?tn=251690

[5] Opponents to adequate consideration of these social costs incorrectly argue that factors such as local air quality, water quality and quantity, resilience, local economic development and avoided land use impacts are merely private benefits or "subjective." *See e.g.* Independent Energy Producers Association Comments on SB 100 Non-Energy Benefits Workshop (April 30, 2024).

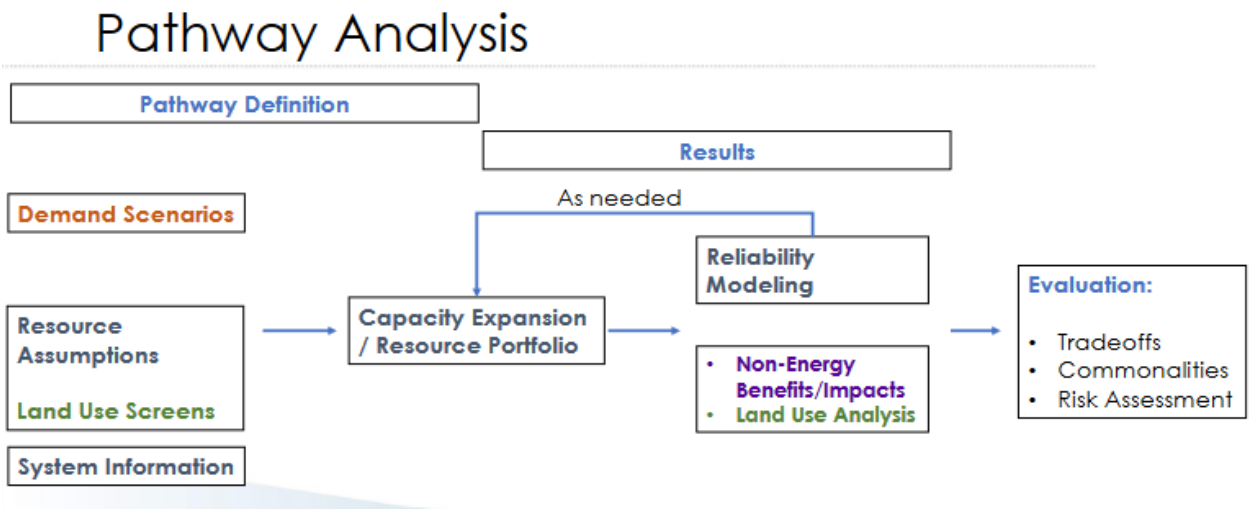
[6] *Id.*

[7] *See California v. Bernhardt*, 472 F. Supp. 3d 573, 616 (N.D. Cal. 2020) ("Costs and benefits shall be understood to include both quantifiable measures . . . and qualitative measures of costs and benefits that are difficult to quantify.")

[8] CEC Order No: 24-0313-05b at 3.

[9] *Id.* ("CEC staff will consider any available information and findings from this OIIP to inform the 2025 Report.")

[10] *Center for Biological Diversity v. Nat. Highway Traffic Safety Admin.* (9th Cir. 2008) 538 F.3d 1172, 1198-1201.



Importantly, under this framework, consideration of NEBs and social costs is subsequent to formulation of resource portfolio scenarios, cost-effectiveness determinations, and importantly, does *not* drive decision-making. Consequently, the CEC will not "minimize the cost to society" of reliable energy service, as the Warren-Alquist Act requires.[11] The Warren-Alquist Act also requires the CEC to use a "value for any costs and benefits to the environment" in "*calculating the cost effectiveness* of energy resources."[12] Absent integration of NEB and social cost values, quantitatively or qualitatively into cost-effectiveness determinations, the CEC neither meets the intent nor the plain language of the Warren-Alquist Act.

It is imperative to meet these mandates as soon as possible to minimize impacts of pollution in DACs and maximize community benefits of energy resources. In regards to harms, certain parties argue that consideration of local impacts of dirty energy resources rests solely with local agencies or air districts,[13] but the courts have routinely held that relying on permitted limits is insufficient to determine what is actually happening on-the-ground.[14] Unfortunately, the reality is that contrary to those same party contentions, air quality violations routinely happen, especially in DACs.[15] Even so, the existence of permits does not eliminate pollution impacts which the CEC must consider to minimize costs to society.

Given the statutory deadline to complete the SB 100 Report, however, there may not be enough time to allow for "meaningful public engagement and time for the CEC to make well-

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11 *See* Cal. Pub. Res. Code § 25000.1(a).

12 *See* Cal. Pub. Res. Code § 25000.1(c) (emphasis added).

13 *See e.g.* IEPA Comments on SB 100 Non-Energy Benefits Workshop at 5 (April 30, 2024).

14 *See e.g. Communities for a Better Environment v. South Coast Air Quality Management Dist.*, 47 Cal. App. 5th 588 (2020).

15 *See* Center for Biological Diversity, *Biomass Energy is Polluting: Biomass Power Plant Pollution Harms Vulnerable Communities, Worsening Environmental Injustice* (March 2021) *available at* https://www.biologicaldiversity.org/campaigns/debunking_the_biomass_myth/pdfs/Forest-Bioenergy-Briefing-March-2021-Book-3-Polluting-Communities.pdf.

informed determinations on this important topic [of NEBs and social costs]."[16] Therefore, at a minimum in the SB 100 Report process, the CEC should develop methodologies as proposed to evaluate tradeoffs, but at the same time, ensure that these methodologies can easily be subsequently improved to inform decision-making as required by Public Resources Code § 25000.1,[17] SB 100,[18] and meet the recommendations of the SB 350 Low-Income Barriers Study,[19] and the Disadvantaged Communities Advisory Group ("DACAG").[20]

III. Alternative Methodologies to Include NEBs and Social Costs in Resource Procurement and Investment Decisions.

As presented at the April 16 NEBs Workshop, we offer two alternative (quantitative and qualitative) methodologies to meet the mandates and recommendations to adequately consider NEBs and social costs. This section also details the contrasting inadequacies of the CPUC's approach in its Societal Cost Test ("SCT') Evaluation that distorts the benefits of local air quality improvements to public health, and discusses the overlap with the CPUC's NEBs Study for the Equity Segment of energy efficiency programs.

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16 CEC Order No: 24-0313-05b at 3.

17 Cal. Pub. Res. Code § 25000.1 ("resource planning and investment *shall* . . . minimize costs to society . . . improve environment . . . cost effectiveness . . . *shall* include a value for any costs and benefits to the environment") (emphasis added).

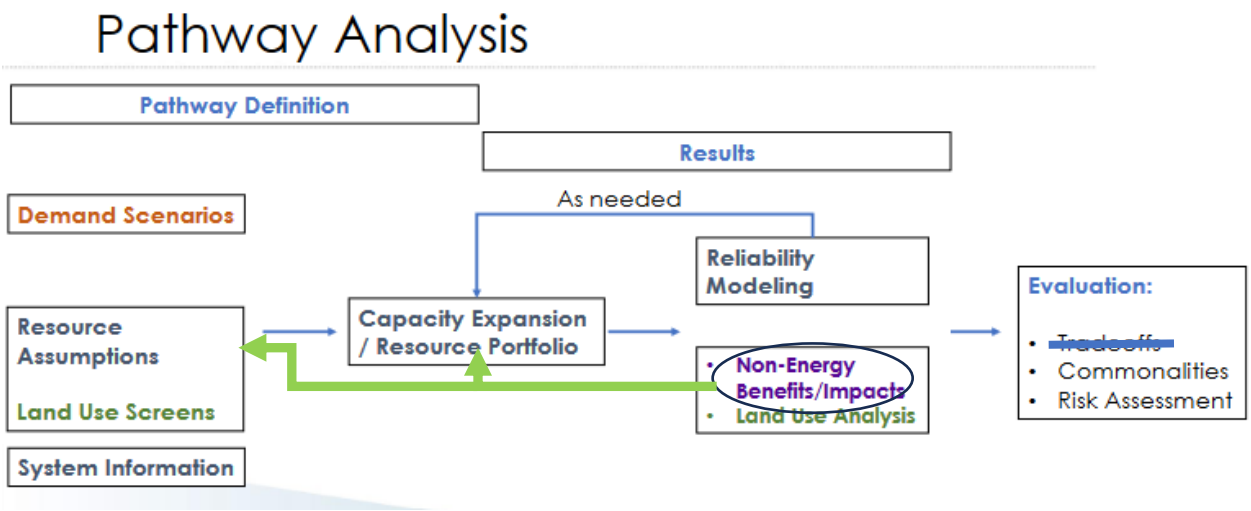
18 The plain language of SB 100 requires the CEC to consider air pollution and water quality. An explicit goal of the statute is "[r]educing air pollution, *particularly criteria pollutant emissions and toxic air contaminants*, in the state." Sen. Bill No. 100 (2017–2018 Reg. Sess.) § 2, subd. (b)(3) (emphasis added). Similarly, the CEC must "prevent unreasonable impacts to . . . water customer rates and bills resulting from implementation . . . taking in full consideration the economic and environmental costs and benefits[.]" *Id.* § 5, subd. (b)(2).

19 Cal. Energy Com., *Low-Income Barriers Study, Part A: Overcoming Barriers to Energy Efficiency and Renewables for Low-Income Customers and Small Business Contracting Opportunities in Disadvantaged Communities Barriers Study* (December 2016) ("Barriers Study"), *available at* https://assets.ctfassets.net/ntcn17ss1ow9/3SqKkJoNIvts2nYVPAOmGH/7bc56e2692769abda31a2aace7b00147/TN214830_20161215T184655_SB_350_LowIncome_Barriers_Study_Part_A__Commission_Final_Report.pdf. (at 3: including NEBs and social costs can improve cost-benefit ratios up to 1.5 times for single-family households and 3.5 times for multifamily households; core recommendation at 5: "Establish common definitions of non-energy benefits, develop standards to measure them, and attempt to determine consistent values for use in *all energy programs*.").

20 The DACAG has submitted multiple letters to the CEC requesting that it begin work integrating NEBs and social costs into cost-effectiveness determinations. *See e.g.* DACAG Letter on SB 100, August 2020, *available at* https://efiling.energy.ca.gov/GetDocument.aspx?tn=234415&DocumentContentId=67287, (identifying "the need for the Joint Agency Report to address non-energy benefits and social costs of energy resources."); *see also* DACAG Comment on 2022 IEPR Update at 4, *available at* https://efiling.energy.ca.gov/GetDocument.aspx?tn=248461 ("[Environmental Justice] communities are often left behind, or receive a disproportionate share of benefits from state funded clean energy resources as a result of projects not 'penciling out.' Yet the reason for projects not penciling out is the CEC and CPUC's over-reliance on outdated cost-effectiveness tests. Those cost-effectiveness tests omit consideration of non-energy benefits . . . Until the CEC corrects these omissions, clean energy program design and deployment will always be skewed towards the status quo and will not achieve energy justice . . . [the CEC should] complete its work on non-energy benefits as soon as possible.")

A. Alternative *Quantitative* Methodology to Value NEBs and Social Costs.

As this first alternative Pathway Analysis below demonstrates, NEBs and social costs could be quantified to inform resource portfolios and the capacity expansion model. Each resource type to be considered by the capacity expansion model must be characterized by its values on all the NEBs and Social Costs, in addition to the other attributes normally considered by expansion modeling tools. This methodology to quantify NEBs moves away from using NEBs to simply evaluate tradeoffs, and—as required by the Warren Alquist Act—aims to minimize or even eliminate tradeoffs that impact environmental justice communities disproportionately and the environment.

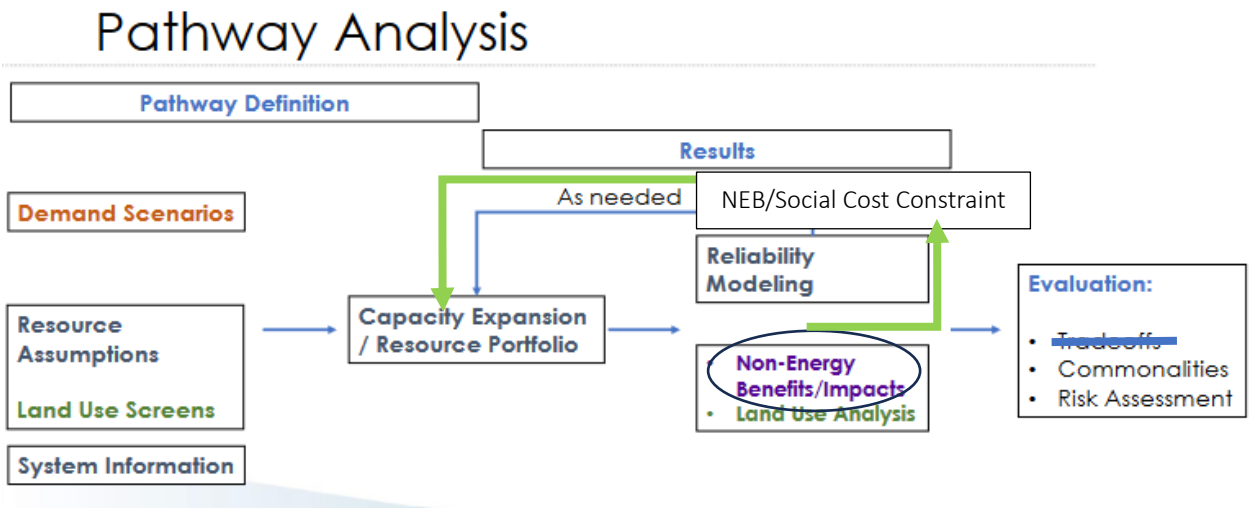


Under this methodology, it is critical to be able to differentiate between resource types based on their relative NEBs and social costs. This need is best illustrated by an example from the current SB 100 analytical framework. At the October 31, 2023 SB 100 workshop, CEC staff explained that solar PV would be one resource type for the expansion model to consider, and that the model would not distinguish between utility-scale solar connected to transmission versus community-scale solar connected to distribution. What the model does do is determine an overall quantity of solar PV; the CEC would then apply a rule to allocate a portion of the result to community-scale distribution-connected solar.

Instead, in this solar PV example, the model should be able to consider at least four different resource types: utility-scale solar connected to transmission, community-scale solar deployed on the built environment (warehouse roofs, schools, etc.) and connected to distribution, and both of these as hybrid resources with co-located storage to smooth their 24-hour power injection profiles. Each of these resource types will have different values on many of the crucial attributes, including NEBs and social costs. We therefore urge the Commission to include this type of capacity expansion modeling improvement into the NEBs and Social Costs OIIP when it begins, with the objective of having improved tools available to inform the SB 100 Report cycle—to the extent feasible—as well as other planning activities such as the IEPR.

B. Alternative *Qualitative* Methodology to Value NEBs and Social Costs.

As this second alternative Pathway Analysis shows, NEBs can also be valued qualitatively.



Under this second alternative methodology, NEBs and social costs again inform decision-making earlier in the process, and are not simply used to evaluate tradeoffs which is inconsistent with statutory mandates and agency recommendations. Valuing resiliency is one example of how a qualitative methodology could work, where the Pathway Analysis ensures that all Californians can maintain "equitable access to essential services."[21] Similarly, this methodology could be used where water quantity is also a constraint. This is not novel, and is currently how GHG and reliability constraints operate, requiring reformulation of resource portfolios (e.g. revisiting the portfolio and reducing GHG emitting resources in favor of non-GHG emitting resources) to meet respective constraints.

Overall, it is imperative to be able to reflect the *actual* total costs of energy resources and how those costs vary with the degree of demand for each resource. Only then can the CEC meet the requirements of the Warren Alquist Act to minimize costs to society.

Ultimately, any methodology that the CEC develops should adhere to the following principles:

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21 *See* Center for Biological Diversity, Central California Asthma Collaborative, California Environmental Justice Alliance, Asian Pacific Environmental Network, Greenlining Institute, Local Clean Energy Alliance, Sierra Club California, The Climate Center, the Center on Race, Poverty and the Environment, Clean Coalition, 350 Bay Area, GRID Alternatives, The Protect Our Communities Foundation, the BEEP Coalition, the Local Government Sustainable Energy Coalition, and Environment California, *Petition for Rulemaking to Integrate NEBs and Social Costs into Resource Planning and Investment Decision-Making* ("Petition") (February 5, 2024) at 26-27, attached as Attachment A; *available at* https://biologicaldiversity.org/programs/energy-justice/pdfs/Center-petition-CA-Energy-Commission-Net-Energy-Benefits-02052024.pdf.

- Constraints and goals establish the boundaries for solutions.

- As recommended by the Barriers Study, the CEC should "develop standards to measure [non-energy benefits], and attempt to determine consistent values for use in *all energy programs*."[22]

- Load modification should be treated like any other resource, *but* the CEC must first remedy the flawed status quo Total Resource Cost test and other frameworks to not diminish the benefits and inflate the costs of, for instance, behind-the-meter resources.

- Model/build the portfolio starting with existing contracted (and fully permitted or built) resources and then adding in resources to fill the need starting at the least cost (with NEBs and social costs included as described above) until a constraint is binding, and continue sequentially adding in the next least cost (again with NEBs and social costs) resource until the need is met.

C. The CPUC's SCT Evaluation is Flawed.

As is the case generally for cost benefit consideration of renewable energy, there is cause for serious concern that costs are, and will be, systematically overvalued while benefits are systematically discounted or ignored altogether.[23] First, "[a]s is the case generally for cost benefit consideration of renewable energy, there is cause for serious concern that costs are systematically overvalued while benefits are systematically discounted."[24] Second, there can be no standardized value for human or wild life.[25] As leading scholars have explained, "[t]he basic problem with narrow economic analysis of health and environmental protection is that human life, health, and nature cannot be described meaningfully in monetary terms; they are priceless."[26]

As discussed at the April 16 NEBs Workshop, the findings of the CPUC's SCT Evaluation is flawed due to both of these problems, and drastically underestimates the community health and environmental benefits of consideration of NEBs and social costs.

Furthermore, certain parties that oppose adequate consideration of NEBs and social costs cite to the CPUC's position that considering NEBs and social costs "won't make a difference."[27] This position lacks evidentiary support, and is inaccurate for several additional reasons.

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[22] *Supra*, fn. 19.

[23] *See* Petition at 20-21.

[24] *Id.*

[25] *Id.* at 21-22.

[26] *Id.* at 21-24; *see also* Fran Ackerman and Lisa Heinzerling, *Priceless* (2004) at 8.

[27] *See e.g.* California Wind Energy Association, Comments Following April 16, 2024, Workshop on Non-Energy Impacts for the Joint Agencies' SB 100 2025 Report (April 30, 2024).

First, the CPUC's SCT Evaluation's air quality adder ("AQA") improperly reduces local air quality benefits of distributed energy resources ("DERs") by utilizing a statewide average for air quality benefits, despite also determining that electrification disproportionately benefits DACs.[28] Certainly, it is well settled that dirty energy resources disproportionately impact DACs. It does not make sense to include a "statewide average" when the harms, and benefits of avoiding those harms disproportionately accrue to DAC residents. Averaging the benefits of local air quality forecloses an accurate examination of this public health benefit, and consequently diminishes the local benefits of improved air quality from less polluting resources.

Second, the AQA is based on the EPA CO-Benefits Risk Assessment Health Impacts Screening and Mapping Tool to "estimate the air quality impacts of natural gas generation," but then improperly assumes no gas capacity retirement by 2045, despite SB 100's mandates.[29] Of course there is little air quality improvement if dirty resources are not retired, and the CPUC is not even examining the local air pollution impacts of other non-fossil gas combustion resources.

Third, the CPUC asserts that there is little difference in procurement for solar PV (utility-scale or DER) when considering local air quality *alone*, but such selective cherry-picking of a single NEBs factor glazes over the importance of considering NEBs and social costs holistically. For instance, as detailed in the resources in Attachment C, the buildout of utility-scale resources presents significant land use and biodiversity impacts that DERs do not.[30] Consideration of these latter impacts will certainly produce a different procurement mix, contrary to the CPUC's incorrect and limited position. In addition, as discussed below in section IV, the CPUC has no sound basis to conclude that consideration of NEBs and social costs will increase electricity rate impacts.

Finally, the SCT Evaluation is also outdated. The CPUC used values for the Social Cost of Carbon and a Societal Discount Rate that were current at the time of the evaluation. However, in November 2023, the Biden Administration issued the final regulation for the Social Costs of Carbon, Methane, and Nitrous Oxide. The EPA 2020 meta-analysis value was $200 per metric ton of CO2, above the $155 "high" value considered in the SCT Evaluation, and well over 3 times the base case of $53. The mid-point discount rate used in the EPA regulation was 2%, in contrast to the 3% used in the CPUC evaluation.[31] It is therefore inappropriate to conclude that

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[28] *See also* CPUC Rulemaking 22-11-013, Center for Biological and The Protect Our Communities Foundation Comments on Societal Cost Test and Air Quality Research Results at 23-25 (April 28, 2023), *available at* https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M507/K820/507820041.PDF.

[29] CPUC SCT Evaluation at 14.

[30] *See also* CEC, Staff Report, Land-Use Screens for Electric System Planning (September 2023) *available at* https://efiling.energy.ca.gov/GetDocument.aspx?tn=252354&DocumentContentId=87368 (at 5: "There are several benefits to integrated energy and land-use planning, such as the early identification of issues or barriers to development, increased transparency in decision-making, limiting impacts, more rapid deployment of environmentally and socially responsible renewable energy projects, and guiding transmission planning.")

[31] EPA, *Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances* (November 2023) *available at* https://www.epa.gov/system/files/documents/2023-12/epa_scghg_2023_report_final.pdf.

the CPUC evaluation represents an accurate assessment of the impact of a Societal Cost Test, even limited to the few variables considered by the CPUC.

D. There are Many Differences Between the NEBs and Social Costs OIIP and the CPUC's Energy Efficiency NEBs Study.

While the CEC could coordinate with the CPUC's Energy Efficiency ("EE") proceeding efforts to examine NEBs in its NEBs Study,[32] the CEC should also recognize the several differences with the NEBs and Social Costs OIIP.

First, social costs; the CPUC is not also focused on social costs. As a result, achieving NEBs *targets*, and not considering relative social costs of different resources, could still allow achievement of NEBs, but maintenance of local impacts, pollution and environmental degradation, contrary to the directives in the Warren Alquist Act.

Second, the CPUC's analysis, its "NEBs Study" is for the equity segment of the EE portfolio only. Thus, the NEBs Study does not provide an opportunity to compare resources side by side.

Third, the CPUC will not complete the NEBs Study until approximately 2028.[33] The NEBs and Social Costs OIIP seeks to be an iterative process to "over time, refine methodologies and include other NEBs and social costs."[34] Given the CPUC's NEBs Study timeline, results of that Study could inform this future iterative process, but cannot replace the CEC's instant and urgently needed focus on local air quality, water quality and quantity, resilience, local economic development and avoided land use impacts.

IV. Adequate Consideration of NEBs and Social Costs Does Not Increase Rate Impacts.

In proceeding with its work on NEBs and social costs, the CEC should not make unchecked assumptions that consideration of NEBs and social costs will increase rate impacts. Parties opposed to adequate consideration of NEBs either mischaracterize the alternative methodologies described above, or rely on the CPUC's flawed analysis arguing that consideration of public health and environmental damage will increase ratepayer impacts.

Certain parties suggest that the CEC should explore other "funding to capture" NEBs, such as "taxes or other revenue sources."[35] This mischaracterizes the above alternative methodologies. Those alternatives do not seek to increase the overall ratepayer impact of meeting SB 100, but actually reduce it, as the state invests in less dirty—and financially costly—energy resources, that also present more social costs and less community benefits compared to clean energy resources. The CEC, for instance through the EPIC program,

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[32] *See e.g*. PG&E Comments on 2025 Senate Bill 100 Non Energy Benefits Workshop (April 30, 2024).

[33] CPUC Decision 23-06-055, Orders 17, 18 and 19.

[34] CEC Order No: 24-0313-05b at 3.

[35] *See e.g*. PG&E Comments on 2025 Senate Bill 100 Non Energy Benefits Workshop (April 30, 2024) at 2, citing NRDC.

has invested hundreds of millions of ratepayer dollars in carbon capture, utilization and sequestration, dairy biomethane, and biomass projects.[36] The alternative methodologies seek to prioritize investment away from those expensive dirty technologies, and instead towards clean technologies. Suggestions for additional funding are misplaced, and still, do not absolve the CEC's obligation to minimize costs to society.

Similarly, concerns that consideration of public health and environmental impacts will "discourage electrification" are misplaced.[37] Both alternative methodologies seek to meet SB 100 goals, but in a just and at least equitable way. In this regard, the alternative methodologies do not "raise the costs" of dirty resources.[38] To the contrary, they are designed to allow for informed decision-making in cost/benefit comparisons to lead to different procurement and investment decisions that minimize local impacts and maximize community benefits.

Furthermore, the CPUC's limited analysis of rate impacts itself is flawed. *There has been no adequate evidence that consideration of NEBs and social costs will increase rates*. The CPUC's SCT Evaluation relies on the flawed assumption that all DERs will be paid for through rates *alone*.[39] This ignores private investment, as well as state and federal subsidies, which could all be encouraged or bolstered once the full range of community and environmental benefits of certain energy resources are understood. These additional subsidies are substantial.

For example, in 2018-2020, Energy Efficiency Program Administrators received a budget of $2.0 billion.[40] Expenditures, however, only reached $1.6 billion "with annual spending levels decreasing over time."[41] Almost half a billion ratepayer dollars subsequently reverted to the IOUs, but could have reached the hardest to serve residences with an adequate consideration of NEBs.

Similarly, the federal Environmental Protection Agency ("EPA") has determined a priority project area for EPA to achieve federal Greenhouse Gas Reduction Fund program objectives and the near-term climate goals of the United States: "Distributed Power Generation and Storage."[42] This include "[p]rojects, technologies, or activities that generate and/or store zero-emissions power near to the point of use, instead of in centralized plants. Examples include distributed solar, distributed wind, geothermal, stand-alone energy storage, and community-wide

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[36] *See e.g.* EPIC Database, *available at* https://database.epicpartnership.org/projects.

[37] CalWEA Comments Following April 16, 2024, Workshop on Non-Energy Impacts for the Joint Agencies' SB 100 2025 Report (April 30, 2024).

[38] IEPA Comments on SB 100 Non-Energy Benefits Workshop at 5 (April 30, 2024).

[39] CPUC SCT Evaluation at 6.

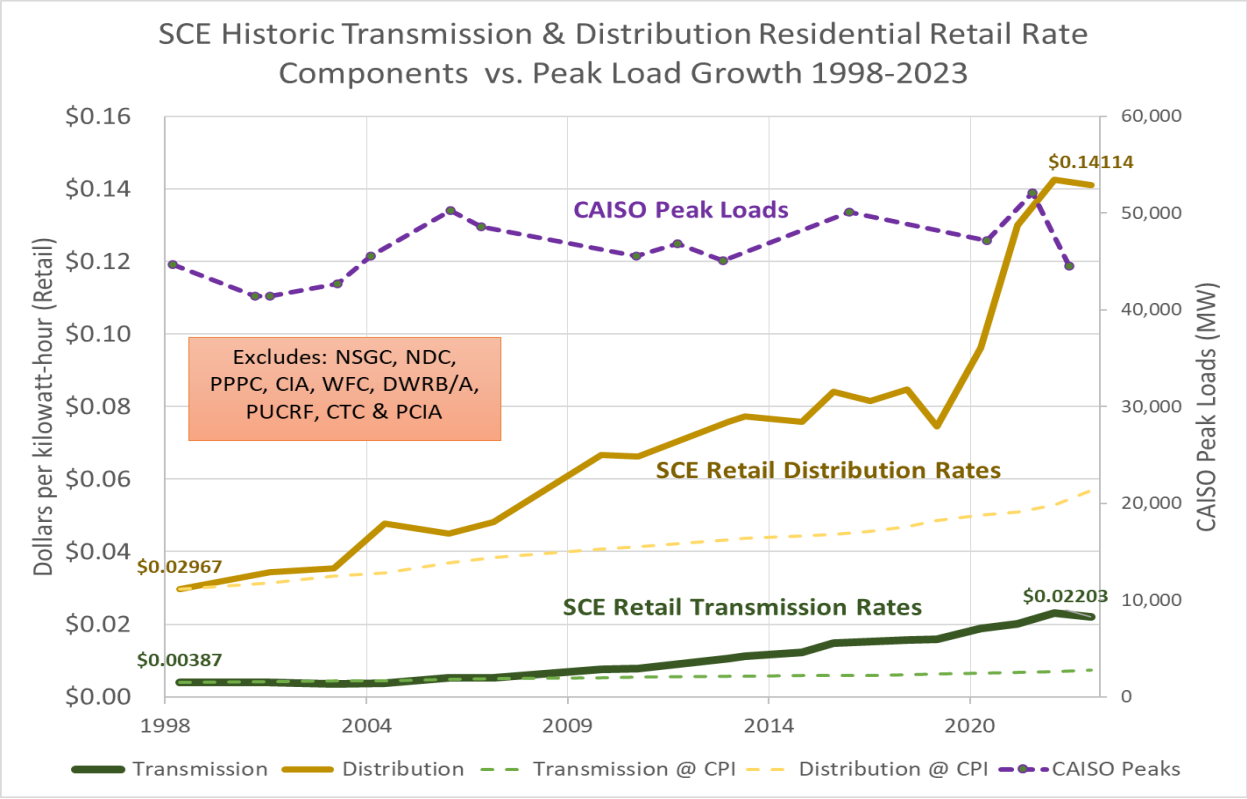
[40] CPUC, Report on Energy Efficiency Portfolio Pursuant to PUC Section 913.5 (July 2022) at 14 *available at* https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/office-of-governmental-affairs-division/reports/2022/2022-cpuc-ee-portfolio-legislative-report.pdf.

[41] *Id.* at 15.

[42] EPA's Implementation Framework for the Greenhouse Gas Reduction Fund, *available at* https://www.epa.gov/system/files/documents/2023-04/GGRF%20Implementation%20Framework_730am.pdf

microgrids."[43] EPA has similarly just launched the $7 billion Solar for All program, with California receiving at least $250 million.[44]

As the below chart shows, taking out fixed costs (for instance, the power charge indifference adjustment, or the nuclear decommissioning charge), still reveals startingly increasing rates due to transmission spending and uncontrolled and unexplained distribution spending.[45]



(Source: Richard McCann, M.Cubed)

There are clearly real reasons for rate increases, independent of NEBs and social costs.

V. RESOURCES

Finally, we offer the following three groups of studies into the NEBs and Social Costs OIIP docket. First, attached as Attachment B, studies that show the need to adequately account for NEBs to drive more community benefits. Second, attached as Attachment C, studies that

[43] *Id.* at 16.

[44] EPA, *Solar for All, available at* https://www.epa.gov/greenhouse-gas-reduction-fund/solar-all.

[45] *See also* San Francisco Chronicle, Opinion, Loretta Lynch, *Here's the real reason PG&E rates are skyrocketing in California* (April 20, 2024), *available at* https://www.sfchronicle.com/opinion/openforum/article/california-electric-bills-news-puc-19410274.php

show the local impacts or social costs that an adequate analysis or methodology would address. Third, attached as Attachment D, studies that provide examples of methodologies to value, either qualitatively or quantitatively, NEBs and social costs.

We thank the CEC for initiating the NEBs and Social Costs OIIP, and respectfully request that the development of the 2025 SB 100 Report coordinate with work in the NEBs and Social Costs OIIP to the extent feasible.

Sincerely,

Roger Lin
Howard Crystal
Center for Biological Diversity

Barbara Stebbins
California Alliance for Community Energy

Jessica Tovar
Local Clean Energy Alliance

Malinda Dickenson
The Protect Our Communities Foundation

Kurt Johnson
The Climate Center

Katie Valenzuela
Building Energy, Equity & Power (BEEP) Coalition

Steven King
Environment California

Kevin Hamilton
Central California Asthma Collaborative

Steve Campbell
Vote Solar

Mari-Rose Taruc
California Environmental Justice Alliance

Andie Wyatt
GRID Alternatives

Ben Schwartz
Clean Coalition

Claire Broome, MD
350 Bay Area

Demian Hardman-Saldana
Local Government Sustainable Energy Coalition

ATTACHMENT A

Center for Biological Diversity, Central California Asthma Collaborative, California Environmental Justice Alliance, Asian Pacific Environmental Network, Greenlining Institute, Local Clean Energy Alliance, Sierra Club California, The Climate Center, the Center on Race, Poverty and the Environment, Clean Coalition, 350 Bay Area, GRID Alternatives, The Protect Our Communities Foundation, the BEEP Coalition, the Local Government Sustainable Energy Coalition, and Environment California.

Petition for Rulemaking to Integrate NEBs and Social Costs into Resource Planning and Investment Decision-Making **(February 5, 2024)**

STATE OF CALIFORNIA
STATE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION

Petition to Adopt An Order Instituting Rulemaking Pursuant to California Code of Regulations § 1221	Petition/Docket _____ (Filed February 5, 2024)

CENTER FOR BIOLOGICAL DIVERSITY, CENTRAL CALIFORNIA ASTHMA COLLABORATIVE, CALIFORNIA ENVIRONMENTAL JUSTICE ALLIANCE, ASIAN PACIFIC ENVIRONMENTAL NETWORK, THE GREENLINING INSTITUTE, LOCAL CLEAN ENERGY ALLIANCE, SIERRA CLUB CALIFORNIA, THE CLIMATE CENTER, CENTER ON RACE, POVERTY AND THE ENVIRONMENT, CLEAN COALITION, 350 BAY AREA, GRID ALTERNATIVES, THE PROTECT OUR COMMMUNITIES FOUNDATION, BUILDING ENERGY, EQUITY & POWER (BEEP) COALITION, LOCAL GOVERNMENT SUSTAINABLE ENERGY COALITION, AND ENVIRONMENT CALIFORNIA

PETITION FOR RULEMAKING TO INTEGRATE NON-ENERGY BENEFITS AND SOCIAL COSTS INTO RESOURCE PLANNING AND INVESTMENT DECISION-MAKING

I. INTRODUCTION

Pursuant to 20 California Code of Regulations § 1221, the Center for Biological Diversity ("Center"), Central California Asthma Collaborative, California Environmental Justice Alliance, Asian Pacific Environmental Network, Greenlining Institute, Local Clean Energy Alliance, Sierra Club California, The Climate Center, the Center on Race, Poverty and the Environment, Clean Coalition, 350 Bay Area, GRID Alternatives, The Protect Our Communities Foundation, the BEEP Coalition, the Local Government Sustainable Energy Coalition, and Environment California (hereafter "Petitioners") submit this Petition, respectfully requesting the California Energy Commission ("CEC") to adopt an order to institute a rulemaking proceeding to determine methodologies to integrate non-energy benefits ("NEBs") and social costs into the CEC's resource planning and investment decision-making processes.[1] This rulemaking proceeding should inform development of the 2025 Joint Agency Report.

[1] 20 CCR 1222(a) ["The commission may, upon its own motion or upon granting a petition filed pursuant to section 1221 of these regulations, *adopt an order to institute a rulemaking proceeding* in accordance with the procedures of Sections 11346.4, 11346.5 11346.7, and 11346.8 of the Government Code."]

The CEC is long overdue in satisfying statutory mandates to consider NEBs and social costs in its decision-making. Until the agency does, the CEC's decisions will continue to ignore the local environmental impacts—that fall disproportionately on disadvantaged and other environmental justice communities ("DACs")—of energy production, and contribute to leaving the same communities behind in the clean energy transition, risking the overall achievement of SB 100 and other State climate policy.

As the CEC has recognized, NEBs "represent the array of diverse impacts of energy programs and projects beyond the generation, conservation, and transportation of energy."[2] These include improved health, safety and comfort to individuals, as well as NEBs that "accrue to society at large," including local job creation, increased community resilience, improved air quality and other environmental benefits, such as reduced water use and water quality improvements.[3] Because the failure to consider these latter issues harms society at large, they are also often referred to as social costs.

In other words, both NEBs and social costs are the externalities of our energy procurement decisions. The key proposal presented by this Petition is for the CEC to no longer disregard these externalities when comparing the costs and benefits of different energy resources.

This work is particularly critical because the electricity transmission and distribution system is run by private Investor Owned Utiliti

es ("IOUs"), where the model of continuous profit and growth has caused massive cost-externalization. Pollution is a traditional kind of a negative externality, where the polluter makes decisions based solely on the direct cost of, and profit from, energy production and ignores costs suffered by third parties harmed by the pollution.[4]

To date, the CEC has followed in lock step and has not corrected this failure. For example, consider the production of biomethane with feedstock from industrial dairies. In planning for how much biomethane to include in the State's energy portfolio, the CEC's current analyses of these projects exclude detrimental impacts to local communities and ecosystems.[5] The reality is that communities local to expanding industrial dairies suffer from consequent

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2 CEC 2022 IEPR Update at A-9.

3 *Id.* at A-9; *see also* Joint Agencies, 2025 SB 100 Report Vision, *available at* https://efiling.energy.ca.gov/GetDocument.aspx?tn=251690

4 Thomas Helbling, "Externalities: Prices Do Not Capture All Costs," International Monetary Fund, *Finance & Development,* (February 24, 2020), *available at* https://www.imf.org/external/pubs/ft/fandd/basics/external.htm.

5 *See e.g. Prepared Testimony of Dr. Dustin Mulvaney, Julia Jordan, and Leslie Martinez on behalf of Sierra Club and Leadership Counsel for Justice and Accountability on the Application of Southern California Gas Company and San Diego Gas & Electric Company for Renewable Natural Gas Tariff* at 31, CPUC Docket A.19-02-015 (Oct. 14, 2019).

increasing air and water pollution, which in turn causes detrimental health impacts that need to be appropriately considered.[6]

Indeed, addressing this issue is particularly important because it is also well documented that these externalities ***are centralized in and around DACs***. This means that the failure of the CEC's existing cost benefit framework to identify and properly track these externalities leads to disproportionate impacts in DACs, because it masks environmental harms in CEC resource planning and investment activities that perpetuate, and even exacerbate, harms in low-income communities of color.[7] At the same time, the failure to consider these externalities in outdated cost-effectiveness determinations diminishes clean energy investments targeted towards DACs and low-income communities.

We can identify and ameliorate these inequitable harms by including NEBs and social costs in resource planning and investment decision-making. The SB 100 2021 Joint Agency Report provides an illustrative example. In that Joint Agency Report, the projected average cost (cents/kWh) indicated that the adopted SB 100 Core Scenario (16.0), which includes continued fossil fuel combustion, was more cost-effective than the No Combustion Scenario (18.1).[8] This suggested a preference for continuing fossil-fuel power generation until at least 2045.

However, this biased conclusion failed to take into account externalities that a proper inclusion of NEBs and social costs would incorporate, including the social costs of maintaining fossil fuel infrastructure and combustion under the Core Scenario, and NEBs from the No Combustion Scenario, such as improved indoor and outdoor air quality and reduced health impacts. Even relying on an underestimated quantification of air quality benefits—at a statewide average value of 2 cents/kWh—demonstrates the importance of integrating NEBs into cost benefit determinations, for incorporating just this single (and underestimated) externality *alone* shows that the Core, fossil-fuel scenario is in fact *not* more cost-effective than the No Combustion scenario.[9]

Failing to account for these externalities in decision-making not only contributes to distorted planning and implementation; it also exacerbates inequitable climate policy, risking—in the words of one expert—having California's transition "to a low-carbon future replicate the

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6 *Id.* at 30-31.

7 *See* Catherine Garoupa White, *Reframing Air Pollution as a Public Health Crisis in California's San Joaquin Valley*, Case Studies in the Environment (April 9, 2020) *available at* https://doi.org/10.1525/cse.2020.sc.965681.

8 Cal. Energy Comm'n, *SB 100 Draft Results* (Sept. 2, 2020) at 23, 35.

9 *See* E3, New E3 Reports Quantify the Health Benefits of Reducing Fossil Fuel Use in California (December 2020), *available at* https://www.ethree.com/new-e3-reports-quantify-the-health-benefits-of-reducing-fossil-fuel-use-in-california/

mistakes and inequalities of the extractive past and present."[10] Adequate consideration of NEBs and social costs would also benefit *all* California residents and the environment. It is precisely because the fossil fuel industry has successfully hidden these externalities that we now face the climate emergency. Similarly, as another commentator has aptly summarized, "all Californians are affected by higher insurance premiums, medical costs and lost productivity due to the many illnesses caused by air pollution, and all stand to benefit from an equitable system that would work toward minimizing these costs as opposed to adding to this growing burden."[11]

Accordingly, and as explained in detail below, Petitioners respectfully urge the CEC to initiate a rulemaking to finally integrate NEBs and social costs into the cost-effectiveness determinations that drive state energy planning. Petitioners emphasize the need for a rulemaking that is an iterative process that begins with certain NEBs and social costs, and over time, refines methodologies and includes other NEBs and social costs.[12] Importantly, to accurately reflect the value of these externalities, this rulemaking must develop a methodology that also qualitatively values NEBs and social costs—as standards for resource portfolios to meet—utilizing appropriate lifecycle analyses.[13]

Pursuant to the Code of Regulation, Petitioners file this petition with the Executive Director,[14] and request a response within 30 days.[15]

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10 Mijin Cha, *A Roadmap to an Equitable Low-Carbon Future: Four Pillars for a Just Transition* (April 2019) at 3, *available at* https://dornsife.usc.edu/assets/sites/242/docs/JUST_TRANSITION_Report_FINAL_12-19.pdf.

11 Shonkoff *et al., Minding the Climate Gap: Environmental Health and Equity Implications of Climate Change Mitigation Policies in California* (December 2009) at 2, *available at* https://www.liebertpub.com/doi/abs/10.1089/env.2009.0030.

12 In addition to the factors already identified by the CEC (local economic development, local air quality, water quality and supply, and resilience), there are also other NEBs and social costs that must also be considered, including but not limited to other economic considerations, energy security, reductions in connections/termination of service, and comfort. *See e.g.* Jim Lazar and Ken Colburn, *Recognizing the Full Value of Energy Efficiency (What's Under the Feel-Good Frosting of the World's Most Valuable Layer Cake of Benefits)* (September 2013), *available at* https://www.raponline.org/wp-content/uploads/2016/05/rap-lazarcolburn-layercakepaper-2013-sept-09.pdf.

13 Cal. Pub. Res. Code § 25008 ("Criteria used in [cost of energy] analysis of proposed actions shall include lifecycle cost evaluation.")

14 20 CCR 1221(b) ["Such petition shall be filed with the executive director who shall within seven (7) days after its filing determine whether the petition contains the information specified in subsection (a).]

15 20 CCR 1221(c).

II. PETITIONERS' INFORMATION

The Center is a non-profit membership organization with more than 1.7 million members and online activists who care about the country's urgent need to expedite the renewable energy transition and protect human health, the natural environment, and species from the ravages of the climate emergency, extinction crisis, and environmental degradation. As part of that mission, the Center strives to reduce the environmental impacts of energy policy and development, including greenhouse gas emissions and harm to imperiled plants and wildlife. The Center's Energy Justice Program advocates for and educates the public about renewable energy, including the need to maximize distributed energy resources and other aspects of the transition off fossil fuels to create a justice-centered energy future.

The Center has an office in Oakland, California, located at 1212 Broadway, Suite 800, and is available at (510) 844-7100.

Details for other Petitioners are Contained in Appendix A.

III. STATUTORY AND REGULATORY BACKGROUND

A. The CEC's Legislative Mandate To Incorporate NEBs Into Cost-Effectiveness Determinations.

In creating the CEC through the Warren-Alquist Act decades ago, the Legislature directed that the agency appropriately incorporate NEBs and social costs into energy decision-making. In particular, Division 15 of the Public Resources Code, which governs activities at the CEC, includes specific mandates to consider these externalities, directing that "resource planning and investment shall . . . *minimize the cost to society* of the reliable energy services that are provided by natural gas and electricity, and to improve the environment,"[16] explaining that:

> [i]n calculating the cost effectiveness of energy resources, including conservation and load management options, *the commission shall include a value for any costs and benefits to the environment*, including air quality.[17]

As discussed throughout this Petition, "costs to society" and "any costs and benefits to the environment" include, but are not limited to, the NEBs and social costs that the CEC has already identified: local air quality impacts, water quantity and water supply, local economic development opportunities, and resiliency.[18]

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16 Cal. Pub. Res. Code § 25000.1(a) (emphasis added).

17 Cal. Pub. Res. Code § 25000.1(c) (emphasis added).

18 *See supra* fn. 3.

Legislation over the last decade has further reinforced the Legislature's intention that the CEC appropriately consider NEBs and social costs. SB 350, passed in 2015, directed the CEC to study the barriers to accessing renewable energy faced by low-income customers and DACs. SB 350 explicitly recognized the lack of sufficient information to understand the costs and benefits of distributed energy resources ("DER") to low-income customers in disadvantaged areas.[19] These are some of the precise NEBs and social costs that this Petition urges the CEC to finally address.

Even more recently in 2018, California passed SB 100, which once again echoes the calls for consideration of NEBs and social costs. In particular, in SB 100 the Legislature specifically directed the CEC to "tak[e] into *full* consideration the economic *and environmental costs and benefits* of renewable energy and zero-carbon resources."[20]

In short, it is evident that the CEC is statutorily mandated to finally incorporate NEBs and social costs into cost-effectiveness determinations, and that the CEC has failed to fulfill this mandate.

B. The CEC Has Not Met The Legislative Mandate For NEBs and Social Costs.

A review of the CEC's work to date demonstrates that the steps it has taken on NEBs and social costs are insufficient to meet its statutory mandate. The CEC should complete a separate and transparent rulemaking to systematically and comprehensively address this critical issue.

Past CEC Efforts Are Insufficient to Meet Legislative Mandates.

Since at least 2016, after the Legislature passed SB 350, the CEC has been exploring some of these issues but has failed to complete a comprehensive and systematic application of including NEBs and social costs in cost-benefit analyses. As required by SB 350, the CEC developed "Part A of the Low-Income Barriers Study" ("Barriers Study") to examine structural and political difficulties with increasing deployment of clean energy resources in low-income communities. [21]

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19 *See e.g. id.* § 7 (Pub. Resources Code § 25327, subd. (a)(1)) ("There is insufficient information available to fully realize the potential of solar photovoltaic energy generation to serve low-income customers, including those in disadvantaged communities.").

20 Sen. Bill No. 100 (2017–2018 Reg. Sess.) § 5 (Pub. Util. Code 454.53, subd. (b)(2)) (emphasis added).

21 Cal. Energy Com., *Low-Income Barriers Study, Part A: Overcoming Barriers to Energy Efficiency and Renewables for Low-Income Customers and Small Business Contracting Opportunities in Disadvantaged Communities Barriers Study* (Dec. 2016) ("Barriers Study"), *available at* https://assets.ctfassets.net/ntcn17ss1ow9/3SqKkJoNIvts2nYVPAOmGH/7bc56e2692769abda31a2aace7b00147/TN214830_20161215T184655_SB_350_LowIncome_Barriers_Study_Part_A__Commission_Final_Report.pdf.

Importantly, the Barriers Study determined that including NEBs and social costs in decision-making will "place energy efficiency and renewable upgrades in the proper context, one in which infrastructural, environmental, and social benefits are part of the calculus for future energy policy."[22] As the CEC explained, "[u]nrecognized non-energy benefits are often not considered in cost-effectiveness tests, which devalues some of the most important factors that motivate investment in clean energy . . . such as family health and safety . . ."[23]

In fact, the Barriers Study found that including NEBs and social costs can improve cost-benefit ratios up to 1.5 times for single-family households and 3.5 times for multifamily households.[24] Consequently, the CEC in the Barriers Study included a core recommendation for itself to :

> Establish common definitions of non-energy benefits, develop standards to measure them, and attempt to determine consistent values for use in *all energy programs*.[25]

Separately, SB 350 also required the formation of the DAC Advisory Group ("DACAG") "to advise the California Public Utilities Commission ("CPUC") and the CEC (together, "Commissions") regarding the development, implementation, and impacts of proposed programs related to the Clean Energy and Pollution Reduction Act of 2015 [also known as SB 350] in disadvantaged communities."[26] One of three Guiding Principles for the DACAG is to

> Increase the benefits of clean energy programs in disadvantaged communities (e.g., by supporting growth in local employment and small business development, *as well as other non-energy benefits* including reducing pollutants and health risks).[27]

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22 *Id.* at 59.

23 *Id.* at 3.

24 *Ibid.*

25 *Id.* at 5 (emphasis added).

26 Charter of the DACAG at 1, *available at* https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/infrastructure/disadvantaged-communities/dacag-charter-updated-march-2020.pdf?sc_lang=en&hash=9237213411E88653040D370D055DC2C5

27 *Id.* (emphasis added).

Despite the CEC's own Barriers Study, the DACAG,[28] and other agency recommendations,[29] the CEC did not initiate a separate rulemaking to address how to incorporate NEBs and social costs into decision-making.

In March 2021, the Commissions and the Air Resources Board ("Joint Agencies") published the first (2021) Joint Agency Report, detailing the State's approach to meeting SB 100. The 2021 Joint Agency Report documents the commitment to "continue engaging with the DACAG and other stakeholders to explore opportunities to better integrate [NEBs and social costs] into future analyses."[30] The Report also recognizes the importance of integrating local air pollution impacts into cost-effectiveness determinations, given that "California still suffers some of the worst air quality in the nation, resulting in more than 7,000 premature deaths and thousands of illnesses and emergency room visits each year."[31] Similarly, the 2021 Joint Agency

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[28] The DACAG has since submitted multiple letters to the CEC requesting that it begin work integrating NEBs and social costs into cost-effectiveness determinations. *See e.g.* DACAG Letter on SB 100, August 2020, *available at* https://efiling.energy.ca.gov/GetDocument.aspx?tn=234415&DocumentContentId=67287, (identifying "the need for the Joint Agency Report to address non-energy benefits and social costs of energy resources." *See also* DACAG Comment on 2022 IEPR Update at 4, *available at* https://efiling.energy.ca.gov/GetDocument.aspx?tn=248461 ("[Environmental Justice] communities are often left behind, or receive a disproportionate share of benefits from state funded clean energy resources as a result of projects not "penciling out." Yet the reason for projects not penciling out is the CEC and CPUC's over-reliance on outdated cost-effectiveness tests. Those cost-effectiveness tests omit consideration of non-energy benefits . . . Until the CEC corrects these omissions, clean energy program design and deployment will always be skewed towards the status quo and will not achieve energy justice . . . [the CEC should] complete its work on non-energy benefits as soon as possible.")

[29] *See e.g.* SB 100 2020 Draft Results Workshop, Recording 1 at 5:57, *available at* https://energy.zoom.us/rec/play/bUuRf6kjOhSZ7g8MIGF_J-Dox3NUx-JR3jwfmhJU2l4gvy8tok-MowBJUJB5gruufv1CQlP8E2A726Jb.sxqE-UdkX6egs13i?continueMode=true&_x_zm_rtaid=bbtqRRIvRxyZtiwxKkIvGQ.1599261507324.db25140b864492794d7ec91acedd47c1&_x_zm_rhtaid=490. [At the 2020 SB 100 Draft Results Workshop, the Executive Officer of the California Air Resources Board stated that including NEBs and social costs is a critical issue to include in any cost effectiveness analysis. "Equally important is cost benefit. What are those amortized cost of capital outlay as well as the annualized operation costs relative to those benefits . . . in the context of NOx . . . as part of the underlying rationale for regulatory work is avoided premature mortalities associated with those air quality impacts, avoided asthma cases, avoided workdays lost and school days. In fact, those become more significant from a benefits standpoint than the carbon element and associated social costs of carbon, which also needs to be included . . . Our ability to monetize benefits falls far short of the actual social costs that can be monetized."]

[30] 2021 Joint Agency Report at 114, *available at* https://efiling.energy.ca.gov/GetDocument.aspx?tn=237167&DocumentContentId=70349

[31] *Id.* at 117.

Report concludes that "it will be imperative for water quality and quantity impacts to be considered in planning . . . processes."[32]

In issuing the 2021 Report, the agencies explained it was intended as "a first step in an iterative and ongoing effort to assess barriers and opportunities to implementing the 100 percent clean energy policy . . . [t]opics for additional assessment include . . . better integrat[ing] social costs and NEBs."[33] However, to date no further progress has been made.

To be sure, in April, 2022, the CEC once again mentioned NEBs and social costs in its Scoping Order for the 2022 Integrated Energy Policy Report ("IEPR") Update. The Scoping Order stated that, as part of the CEC's efforts to "center equity and environmental justice," the agency intended to further analyze energy resource "benefits, non-energy considerations, and social costs."[34]

Similarly, when the CEC produced the final 2022 IEPR Update in November, 2022, the agency acknowledged that, "[i]ncorporating nonenergy benefits may produce greater benefits to all Californians by increasing the societal benefits produced by public funds," and repeated its now long-stated conclusion that, "[i]ncorporating and tracking these benefits supports investments essential to California's transition to a clean energy economy."[35]

The CEC, however, again deferred consideration of NEBs and social costs.[36]

The Proposed SB 100 Pathway Analysis is Still Insufficient to Meet Legislative Mandates.

The CEC has indicated it may address NEBs and social costs in the 2025 Joint Agency Report, still years away.[37] However, even there the agency intends to address NEBs and social costs only as a *separate factor*, after undertaking cost-effectiveness determinations, as shown in this graphic from the CEC,[38] representing the analytical pathways to meet SB 100:

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32 *Id.* at 121.

33 *Id.* at 18; *see also id.* at 20 ("The Joint Agencies will continue evaluating available modeling tools . . . to capture non-energy benefits and social costs in future SB 100 analyses.").

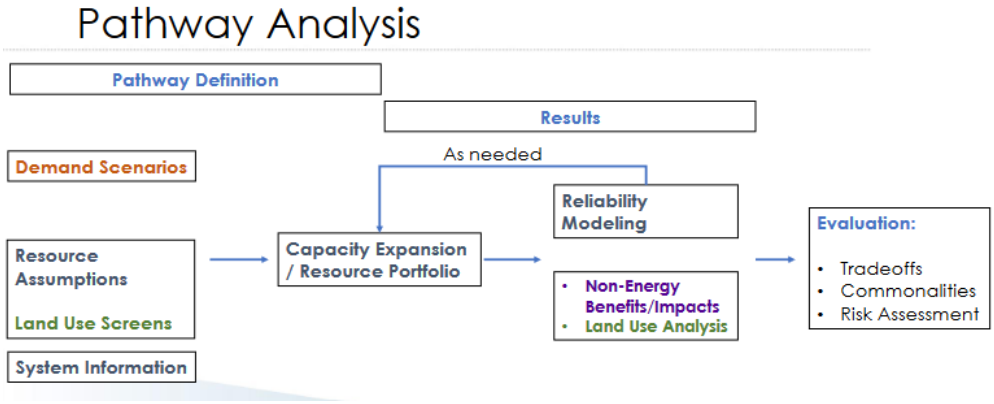
34 2022 IEPR Update Scoping Order at 4, *available at* https://efiling.energy.ca.gov/GetDocument.aspx?tn=242747&DocumentContentId=76300

35 2022 IEPR Update at A-8, *available at* https://www.energy.ca.gov/media/7901

36 *Id.* ("Non-energy benefits and social costs should also be considered in [future] analyses.")

37 CEC, 2025 Joint Agency Report Vision (August 22, 2023) at Slide 16, *available at* https://efiling.energy.ca.gov/GetDocument.aspx?tn=251718&DocumentContentId=86699.

38 *Id.* at Slide 17.



The SB 100 Pathway Analysis depicted above produces different resource portfolios, or the mix of resources the State will pursue to meet SB 100. However, it silos NEBs and related social cost impacts to a *post hoc* evaluation role. In other words, the CEC proposes to include NEBs and social costs as a metric to evaluate or study various resource portfolios or scenarios in order to determine the degree of "tradeoffs" necessary under the ultimately adopted scenario or resource portfolio. Importantly, under this framework, consideration of NEBs and social costs is outside of the formulation of resource portfolio scenarios and cost-effectiveness determinations and importantly, does *not* drive decision-making.

This planned framework fails to meet the mandates of the Legislature in two distinct respects.

First, under this methodology, the CEC will not "minimize the cost to society" of reliable energy service, as the Warren-Alquist Act requires.[39] Rather, the agency will make decisions by considering the degree of tradeoffs—costs to society—between each resource portfolio or scenario. Thus, while it is conceivable this approach could result in a choice that in fact minimizes the cost to society, that is not the driver for decision-making.

Indeed, a result of "minimizing the cost to society" is further unlikely given the CEC's treatment of "study" scenarios in the prior 2021 Joint Agency Report that were used for informational purposes only.[40] There, various scenarios (including No Combustion and Accelerated Timelines) were "intended to provide additional information for consideration and support broader state energy, climate planning, and public health efforts" but are claimed to be—surprisingly and inappropriately—beyond the "interpreted scope of SB 100."[41] Especially given

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39 *See* Cal. Pub. Res. Code § 25000.1(a).

40 *See e.g.* 2021 Joint Agency Report at 7.

41 *Id.*

the CEC's track record of failing to adequately consider NEBs and social costs detailed above, there is no reason to expect the CEC's *post hoc* recognition of NEBs and social costs to effectively address these issues.

Second, the Warren-Alquist Act also requires the CEC to use a "value for any costs and benefits to the environment" in "*calculating the cost effectiveness* of energy resources."[42] Absent integration of NEB and social cost values, quantitatively or qualitatively into cost-effectiveness determinations, the CEC neither meets the intent nor the plain language of the Warren-Alquist Act.

Instead, as it stands the CEC will continue to rely predominantly on the Total Resource Cost test ("TRC Test") to determine the cost-effectiveness of energy resources. The TRC Test considers limited costs and benefits: "existing system costs (baseline costs), capital investments and operation costs."[43] The TRC Test ignores NEBs and social costs, such as disproportionate public health impacts on DACs and other low-income and environmental justice communities. Reliance on the TRC Test therefore leads to distorted cost comparisons and provides the agencies and stakeholders with inaccurate cost-effectiveness data. By undercounting NEBs and ignoring social costs, the TRC Test provides biased comparisons of resource portfolios. Even assuming the CEC addresses these biases after the fact with NEBs and related impacts as a metric, the decisions of the appropriate mix of resources to meet SB 100 will have already been made. The only difference is that the CEC would now have a means to see "how bad" the adopted scenario could be relative to another.

In sum, while the CEC has made continuous commitments to capturing NEBs and social costs in future analyses, concurrently highlighting the importance of those commitments, especially to environmental justice communities,[44] it has failed to do so for practically a decade. By continually failing to include NEBs and social costs in decision-making, the CEC cannot accurately determine the costs and benefits of energy resources and determine an equitable, let alone chart a just way forward to a clean energy future.[45]

Given these consequences of continuing to ignore NEBs and social costs in energy decision-making, and the CEC's ongoing failure to comply with the Legislature's directives in the Warren-Alquist Act, SB 350, and SB 100—as well as the recommendations of the SB 350

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42 *See* Cal. Pub. Res. Code § 25000.1(c) (emphasis added).

43 *See e.g.* SB 100 Draft Results Workshop (September 2, 2020) at Slide 24, *available at* https://efiling.energy.ca.gov/getdocument.aspx?tn=234549.

44 *See e.g.* 2021 SB 100 Joint Agency Report at 18, 20, 114, 134; 2022 IEPR Update Scoping Order at 4; 2022 IEPR Update at A-8.

45 *See e.g.* Skumatz Economic Research Associates, Inc., *Non-Energy Benefits/Non-Energy Impacts (NEBs/NEIs) and their Role & Values in Cost-Effectiveness Tests: State of Maryland* (Mar. 31, 2014) *available at* https://www.energyefficiencyforall.org/resources/non-energy-benefits-non-energy-impacts-nebs-neis-and-their-role-and-values/.

Barriers Study and the DACAG—Petitioners maintain that the CEC should initiate the requested Rulemaking and finally undertake this vital task.

IV. DISCUSSION

A. The Adequate Consideration of NEBs and Social Costs in Resource Planning and Decision-Making is Critical to Meet California's Climate and Equity Goals.

The CEC must not leave communities behind in the clean energy transition. Moreover, SB 100 does not allow the CEC to do so. Achieving the 100% clean energy target simply means that all Californians' electricity needs are met with clean energy. However, continuing to fail to integrate NEBs and social costs into decision-making risks leaving environmental justice and other low-income communities behind in at least three ways. First, projects targeted to DAC and other low-income communities will continue to not "pencil out," meaning that those projects will not happen even if there is clean energy funding available. Second, those same projects and populations will not receive additional and needed funding, as factors to warrant additional investment—NEBs and social costs—continue to be left out of the equation. Finally, the CEC will continue to miss opportunities to evaluate climate mitigation strategies that would avoid disproportionate impacts or "hot spots" of pollution.

1. Adequate Consideration of NEBs and Social Costs Would Allow More Environmental Justice and Low-Income Projects to "Pencil Out."

As one commentator has aptly summarized, there are serious limitations with the current approach toward bringing clean energy benefits to DACs in California:

> [T]he current extent of [environmental justice and low-income communities'] "prioritization" is mostly constrained to program administration and outreach efforts. The fundamental problem with this is that these underlying programs overwhelmingly rely on market economic incentives to determine actual outcomes - i.e., what gets built where. Thus, despite the best intentions to increase program participation within [environmental justice and low-income communities], their below average per capita energy usage and above average transaction costs make it such that real world projects seldom "pencil out" as easily as they do within more affluent communities.[46]

This observation is important in the context of NEBs and social costs for two reasons: first, whether projects pencil out is due in large part to whether the projects are cost-effective,

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46 Fournier et al, *Net GHG Emissions and Air Quality Outcomes from Different Residential Building Electrification Pathways within a California Disadvantaged Community*, Sustainable Cities and Society 86 (2022) 104128 at 13, *available at* https://www.sciencedirect.com/science/article/pii/S2210670722004413?via%3Dihub.

with a TRC test score of at least or greater than 1.0; and second, funding allocations are directly correlated with the cost-effectiveness of the project.

As the Ninth Circuit explained in *Center for Biological Diversity v. National Highway Traffic Safety Administration* ("*NHTSA*"), where an agency must evaluate the costs and benefits of regulatory action, "it cannot put a thumb on the scale by undervaluing the benefits and overvaluing the costs" of that action.[47] In the *NHTSA* case, the court rejected as arbitrary the agency's decision to ignore the benefits of carbon emissions reductions from increased gas mileage standards even though the agency admitted the value was not "zero."[48]

Similarly here, the CEC's continued reliance on the TRC test, which omits NEBs and societal benefits, improperly undervalues or zeroes out these benefits, to the particular detriment of DAC and low-income communities. "Equity programs" or those that are intended to serve DAC and low-income communities, generally do not perform well under the TRC test, scoring well below 1.0. Yet those programs offer significant NEBs or societal benefits that the TRC test does not account for. The approval of Regional Energy Network ("REN") programs provides an illustrative example.

In 2012, the CPUC authorized REN energy efficiency programs; local government efforts established to fulfill local needs unmet by IOU programs.[49] Specifically, as the CPUC has recognized, "[m]any of the REN program plans address hard to reach market segments," and which IOU programs have traditionally left behind.[50] Notably, REN program plans do not have "a threshold cost-effectiveness level," meaning that the TRC test score does not have to be at least 1.0.[51] At the time of initial authorization of these REN energy efficiency program plans,

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47 *Center for Biological Diversity v. Nat. Highway Traffic Safety Admin.* (9th Cir. 2008) 538 F.3d 1172, 1198-1201 (agency rule was arbitrary and capricious for failing to adequately monetize environmental factors); *see also Nat. Ass'n of Home Builders v. E.P.A.* (D.C. Cir. 2012) 682 F.3d 1032, 1040 ("[W]hen an agency decides to rely on a cost-benefit analysis as part of its rulemaking, a serious flaw undermining that analysis can render the rule unreasonable."); *California v. Bernhardt* (N.D. Cal. 2020) 472 F.Supp.3d 573, 615-16 ("Where an agency chooses to engage in a cost-benefit analysis, it cannot short shrift the benefits side of the equation by failing to monetize certain benefits."), *appeal docketed*, No. 20-16801 (9th Cir. Sept. 17, 2020); *Montana Environmental Information Center v. U.S. Office of Surface Mining* (D. Mont. 2017) 274 F.Supp.3d 1074, 1093-99 (agency analysis that quantified benefits but not costs was inadequate).

48 *NHTSA,* 538 F.3d at 1198, 1200; *see also High Country Conservation Advocates v. U.S. Forest Service* (D. Colo. 2014) 52 F.Supp.3d 1174, 1190-93 (finding an analysis of costs and benefits arbitrary where the record did not suggest that costs were zero, but "by deciding not to quantify the costs at all, the agencies effectively zeroed out the cost.").

49 CPUC Decision 12-11-015 (November 8, 2012) at 8, *available at* https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M034/K299/34299795.PDF

50 *Id.* at 19.

51 *Id.*

however, the CPUC determined that these REN programs collectively contribute to "4,000 gigawatt-hours and 750 megawatts of electricity savings *over the next two years*, reducing the need for at least two large power plants."[52]

This shows that REN programs offer significant NEBs or societal benefits, including improved local air and water quality from displaced gas plant electricity generation that are disproportionately located in environmental justice communities.[53] Yet even today, REN programs are still largely "cost-ineffective" under the status quo cost/benefit framework.

For instance, one Bay Area REN program focuses on energy efficiency for "underserved properties and overburdened populations, specifically multifamily (MF) buildings and tenants that are not served well by traditional programs."[54] This program alleviates the health burden on residents "in areas with high levels of exposure to particulate matter and other airborne toxins,"[55] and helps "residents be more resilient to extreme heat events."[56] In 2022, this program alone produced net lifecycle savings of 5,824,429.60 kWh, more than double the savings projected during the filing of BayREN's implementation plan.[57] Precisely because the TRC test ignores NEBs and social costs, however, the TRC test score was 0.2, and the program was therefore not considered to be cost-effective.[58]

Whether or not these or other California programs pass the TRC test and are therefore found to be cost-effective has critical real-world consequences. In particular, "cost-effective" programs under the status quo cost/benefit framework ***receive a far more substantial budget*** than programs which target more DAC and low-income communities.

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52 CPUC Press Release, CPUC Approves Energy Efficiency Plans and Leverages Local Governments to Ensure Consumer Benefits (November 8, 2012) *available at* https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M033/K963/33963319.PDF (emphasis added).

53 *See* PSE Healthy Energy, California Power Map, *available at* https://www.psehealthyenergy.org/california-power-map/.

54 *See e.g.* Bay Area Regional Energy Network, BayREN02: Multifamily Subprogram Program Implementation Plan (February 9, 2023) *available at* https://cedars.sound-data.com/documents/download/2788/main/.

55 *Id.* at 5.

56 *Id.* at 6.

57 See Details for BAYREN02: Multi Family (2022 results), *available at* https://cedars.sound-data.com/programs/BAYREN02/details/2022/?include_c_n_s=true

58 *Id.*

For instance, in the most recent budget for energy efficiency portfolios for 2024-2027 and business plans for 2024-2031, "cost-effective" programs received an approved budget of $3,603,369,471, while "cost-ineffective" programs under the existing framework that ignores NEBs and social costs—which are those that serve greater proportions of DAC and low-income communities—received an approved budget of $678,339,464.[59] In other words, ***due in large part to outdated cost-effectiveness tests, DAC and low-income communities receive about 18% of clean energy funding compared to more affluent areas of the state***. This is particularly concerning given the CEC's finding that low-income neighborhoods would reap the highest health benefits from clean electricity.[60]

Indeed, even in authorizing the REN programs, the State must still adhere to its *status quo* cost-effectiveness determinations, and maintain cost-effectiveness, throughout an entire service territory as a whole.[61] In other words, the "cost-ineffective" REN programs must be balanced by "cost-effective" IOU programs to reach an overall service territory TRC score of 1.0. This limitation defeats the intent to grow REN programs so that one day they become cost-effective. Quite simply, "cost-ineffective" programs will always remain "cost-ineffective" under the current framework that excludes consideration of externalities, dependent on the "balancing" offered by other cost-effective programs. In the meantime, the benefits of "cost-ineffective" programs—including things like displacing the need for inequitably located peaker plants, indoor air quality benefits, and improved resiliency—continue to go unnoticed at the regulatory level, and the disproportionate funding of programs remains skewed to the *status quo*.

2. Adequate Consideration of NEBs and Social Costs Would Allow for Greater Investments in DACs and Other Low-Income Communities.

As The Barriers Study concluded, "[r]ecognizing non-energy benefits not only helps *justify* the costs of such programs, but can convey a clearer picture of the societal benefits from such investments of public funds."[62] In other words, if more DAC and low-income projects "pencil-out," those projects justify greater funding. Putting equity considerations aside, the State must determine how to reach and fund more investments in DACs and low-income communities to simply meet SB 100. As the CEC echoes in its most recent IEPR update, "[i]ncorporating nonenergy benefits . . . and tracking these benefits supports investments essential to California's transition to a clean energy economy."[63]

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59 CPUC Decision 23-06-055 (June 29, 2023) *available at* https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M512/K907/512907396.PDF.

60 *See* 2021 Joint Agency Report Summary at 7.

61 *See* CPUC Decision 12-11-015 at 18-19.

62 Barriers Study at 59-60 (emphasis added).

63 2022 IEPR Update at A-8, *available at* https://www.energy.ca.gov/media/7901

Furthermore, investment in clean energy and energy efficiency within DACs "not only helps the neediest achieve the energy bill savings that other Californians enjoy, but such investments also result in substantially larger multipliers for economic development."[64] For example, distributed generation traditionally has higher upfront per kW costs than utility scale energy development, which benefits from inherent economies of scale and higher capacity factors. However, the economic NEBs of distributed generation are significant, helping to bring the economic and employment benefits of energy generation to the local communities that consume the energy. This means that, "[a] portion of the higher costs [for distributed generation] . . . are spent in the local economy, and thus provide a local economic benefit in excess of what would be spent on wholesale, central station renewable generation."[65] By ignoring these NEBs, the CEC's current cost-effectiveness framework forces resource planning decisions to continue to ignore opportunities to improve investment, whether through subsidies or subsequent economic multipliers, in DACs and low-income communities.

Consider the following hypothetical based on a real-world example from efforts to serve a small, low-income, rural, and hard to reach community school district with a majority of non-English speakers, contrasted with a large, more affluent school district.

The Small School District	**The Large School District**
• Limited staffing from superintendent or principal • No access to capital • No ability to hold debt • No benefit of economies of scale.	• Dedicated outreach and marketing manager • Access to capital • Ability to hold debt • Benefits from economies of scale to buy-down the cost of the clean energy measure.
Savings potential = **50kW**	Savings potential: **50kW**
	Hours needed by Developer to sell product:

64 Barriers Study at 1.

65 *See* Center for Biological Diversity, *Rooftop Solar Justice: Why Rooftop Solar is Good for People and the Planet and Why Monopoly Utilities Want to Kill It* (March 2023) at 5 *available at* https://www.biologicaldiversity.org/programs/energy-justice/pdfs/Rooftop-Solar-Justice-Report-March-2023.pdf; *see also* Sierra Club and Crossborder Energy, *Non-Energy Benefits of Distributed Generation* (2015) *available at* http://gridworks.org/wp-content/uploads/2020/02/1137-Distributed-Generation-White-Paper_03_low-1.pdf.

Hours needed by Developer to sell product: 40 hours (due to time needed for increased outreach, education, travel time, lack of competition)	10 hours.
Simple Value Proposition: **1.25kW per hour worked**	Simple Value Proposition: **5kW per hour worked**

The result is clear. Developer programs, that must follow the outdated cost-effectiveness tests, are incentivized to capture easy and quick savings. Over time, this repeats itself, through multiple iterations of programming and market exposure. This process directly leads to "the entitlement of the status quo" where wealthier communities are consistently served (building wealth and resilience) and less-wealthy communities are passed over. Year over year, the climate gap widens, and the resources necessary to close the gap grows. As the gap grows, so does the cost to close the gap. Without incorporating NEBs into resource and portfolio decisions, the entitlement of the status quo remains.

Finally, we emphasize that meeting the CEC's mandate for greater realization and consideration of NEBs and social costs is not charity. As local government advocates and environmental and sustainability, public and environmental health researchers at UCLA summarize:

> Rather, it may in fact be necessary to additionally undertake more direct, redistributional investments within these communities. If we rightly acknowledge that the residents of [environmental justice communities] have been disproportionately burdened by the historical development and operations of the energy system, then we must similarly accept that this harm can only be undone by disproportionate future investments. These investments must be used both to accelerate the adoption of new DER technologies and the electrification of existing gas end-use appliances within [environmental justice community]
> homes as well as to accelerate the decommissioning of the fossil [electricity generator units] which negatively impact the health of their residents and the condition of their local environment.[66]

In sum, while the *status quo* cost-effectiveness framework directs substantially disproportionate funding to more affluent areas of the State, adequate consideration of NEBs and social costs would allow for equitable redistributional investments to DACs and low-income communities, which will ultimately benefit all Californians, contributing significantly to meeting SB 100.

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66 Fournier et al, *Net GHG Emissions and Air Quality Outcomes from Different Residential Building Electrification Pathways within a California Disadvantaged Community*, Sustainable Cities and Society 86 (2022) 104128 at 13, *available at* https://www.sciencedirect.com/science/article/pii/S2210670722004413?via%3Dihub.

B. Adequate Consideration of NEBs and Social Costs Would Allow for the Proper Evaluation of Climate Mitigation Strategies to Avoid Pollution "Hot Spots" and Alleviate Environmental Injustice.

Turning from benefits to harms, by failing to consider the externalities of resource planning and investment decisions, the CEC does little to guard against growing disproportionate impacts in DACs and low-income communities. Consequently, the CEC cannot fulfill its duty to "minimize costs to society." To the contrary, the continued failure to consider NEBs and social costs in decision-making simply exacerbates these harms. Biofuel production and combustion provide illustrative examples.[67]

Since at least 2010, biomethane production associated with dairies and concentrated animal feeding operations ("CAFOs") has led to thousands of water quality violations in DACs.[68]

Similarly, biomass power plants in California are often concentrated in communities of color and low-wealth communities in the Central Valley already suffering from high pollution burdens. For example in the San Joaquin Valley, four out of five active biomass plants and four out of five idle biomass plants are located in DACs.[69] Most of these communities are within the ninetieth percentile for air pollution burden, and some are in the top percentile. At the same time, these combustion sources are also among the largest emitters of particulate matter and

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67 Carbon capture, utilization and sequestration technologies raise the same concerns. Despite the large environmental justice and academic communities' opposition to the use of these technologies to meet our climate goals, the State has already predetermined that these false solutions are a cost-effective means to meet SB 32. *See* CARB 2022 Scoping Plan for Achieving Carbon Neutrality at 84-89; *see also* 128 California Academics Respond to California Air Resources Board 2022 Scoping Plan (June 14, 2022) *available at* https://caleja.org/wp-content/uploads/2022/06/Academics-Scoping-Plan-Letter-6.14.22-.pdf; *see also* 73 Organizations Call for A Just and Ambitious 2022 Scoping Plan (June 2, 2022) *available at* https://earthjustice.org/wp-content/uploads/73_orgs_letter_-_a_just_and_ambitious_scoping_plan.pdf.

68 *See* State Water Res. Control Bd., *California Integrated Water Quality System Project*: *Violation Report (Facilities)*, *available at* https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet?vioReportType=Violation&reportID=7606649&inCommand=drilldown&reportName=PublicVioFacilityReport; *see e.g.* State Water Res. Control Bd., *California Integrated Water Quality System Project*: *Violation Report for L & J Vanderham Dairy*, *available at* https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet?reportID=3464505&inCommand=drilldown&reportName=PublicVioDetailReport&group=&facID=235180 (cited for four Class 2 violations in 2017 alone: excessive nutrient application in crop fields, excessive standing water, excessive standing leachate, and dead, decomposing animals in the production area.)

69 *See generally* Cal. Office of Env. Health Hazard Assessment, SB 535, *available at* https://oehha.ca.gov/calenviroscreen/sb535. Four active biomass plants (Rio Bravo Fresno, DTE Stockton, Merced Power, and Ampersand Chowchilla) and four idle biomass plants (Community Recycling Madera Power, Covanta Mendota, Dinuba Energy, and Covanta Delano) are in census tracts designated as disadvantaged under SB 535.

nitrogen oxide in the state, and emit large amounts of hazardous air pollutants, such as dioxins, benzene, formaldehyde, arsenic, lead, and mercury.[70] The IPCC itself acknowledges, with high confidence, that biofuels can have "adverse socio-economic and environmental impacts, including on biodiversity, food and water security, local livelihoods, and rights of Indigenous Peoples."[71] In fact, biomass power plants are guilty of repeated air quality violations.[72]

Yet existing cost-effectiveness tests are blind to all of these disproportionate impacts. Remarkably, these projects score extremely well under the existing and inadequate TRC test. In one instance, for example, biofuel combustion with a large internal combustion engine scores well above 1.0, at 8.31.[73]

Water supply and water quality are similarly illuminating examples of where taking NEBs and social costs into account will help to address environmental justice concerns. It is well recognized that "utilities consume a tremendous amount of water each year and will be increasingly competing for finite water resources" for years to come.[74] Fossil gas, for example, requires large amounts of water for extraction and processing purposes. Some estimates show that "[t]he total amount of water injected and produced for conventional oil and gas production is greater than that associated with [high-volume hydraulic fracturing] and unconventional oil and gas production by well over a factor of 10.[75] While to date there is no dominant methodology for measuring the conservation value of water, this is not an excuse to overlook it in cost-benefit analyses.

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70 Partnership for Policy Integrity, Air pollution from biomass energy (2023), *available at* https://www.pfpi.net/air-pollution-2/

71 UN Intergovernmental Panel on Climate Change, 2023, AR6 Synthesis Report 2023, *available at* https://report.ipcc.ch/

72 *See* EPA Enforcement and Compliance History Online Database, *available at* https://echo.epa.gov/.

73 *See e.g.* Verdant Associates, Self-Generation Incentive Program, 2020 Biogas Generation Market Assessment and Cost-effectiveness Report (November 17, 2020), *available at* https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/self-generation-incentive-program/2020-sgip-biogas-generation-market-assessment-and-ce-report.pdf.

74 *See* Jason B. Keyes et. al., *A Regulator's Guidebook: Calculating the Benefits and Costs of Distributed Solar Generation, Interstate Renewable Energy Council*, Inc. (October 2013) *available at* https://irecusa.org/wp-content/uploads/2021/07/IREC_Rabago_Regulators-Guidebook-to-Assessing-Benefits-and-Costs-of-DSG.pdf; *See also* Heather Payne, Johas Monast, *Valuing Distributed Energy Resources: A Comparative Analysis*, University of North Carolina Center for Climate, Energy, Environment and Economics, June 4, 2018, https://law.unc.edu/wp-content/uploads/2019/09/derpaperfinal.pdf.

75 Groundwater, *Conventional Oil—The Forgotten Part of the Water-Energy Nexus* (June 10, 2019), *available at* https://ngwa.onlinelibrary.wiley.com/doi/abs/10.1111/gwat.12917.

The CEC must also address water quality. Gas infrastructure presents similar harms to the water quality impacts of biomethane production detailed above. For instance, improperly managed or poorly constructed fossil gas infrastructure can allow methane, volatile compounds, fracking fluids, diesel, or wastewater to leak into nearby groundwater or surface water resources.[76] These issues are particularly important as California continues to grapple with ongoing drought restrictions.

In sum, adequately considering NEBs and social costs would more appropriately address these environmental and environmental justice concerns.

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As is the case generally for cost benefit consideration of renewable energy, there is cause for serious concern that costs are, and will be, systematically overvalued while benefits are systematically discounted or ignored altogether.[77] But even putting those grave concerns aside, there is an even more fundamental problem: how can costs and benefits be accurately compared? It is therefore vital that nonmonetized NEBs and social costs be incorporated qualitatively—comporting with the standards in applicable statutes—and not simply reduced to simple numbers in the cost-effectiveness equation.[78] This Petition next discusses the importance of such qualitative evaluation, should the CEC grant this Petition and open a rulemaking which must also consider the lifecycle impacts of energy procurement decisions.

V. The Rulemaking Proceeding Should Integrate Qualitative Values For Certain NEBs and Social Costs And Incorporate Appropriate Lifecycle Analyses.

Having detailed the vital benefits that would accrue from properly incorporating NEBs and social costs into cost-effectiveness determinations, we next discuss two key considerations which should guide the CEC's consideration of these issues in instituting a rulemaking process.

A. Because They Are Often Difficult To Precisely Quantify, The Requested Rulemaking Should Address How Certain NEBs and Social Costs May Be Incorporated Qualitatively—or as Standards—Into Cost-Effective Determinations.

As the CEC works to integrate NEBs and social costs into its cost-effectiveness determinations, it is vital that the agency recognize the unique nature of these factors, which are

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76 *Id.*

77 *See e.g.* Eban Goodstein, "*Polluted Data*" American Prospect (Nov.-Dec. 1997) *available at* http://prospect.org/article/behind-numbers-polluted-data (finding agency compliance cost estimate predictions to be more than twice the actual costs in eleven out of twelve cases).

78 *See also* Amy Sinden, *The Problem of Unquantified Benefits, Temple University* (April 20, 2018) *available at* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3087370.

not nearly as easy to reduce to precise numerical values as are other measures with which the CEC is already familiar.

A key premise of cost-benefit analysis is that both sides of the ledger can be meaningfully reduced to dollar signs, allowing a decision-maker to allow the decision to be meaningfully informed by a simple math problem. But of course things are not that simple. Certain NEBs and social costs are inherently difficult to quantify, and the CEC must consider those benefits and costs qualitatively. Qualitative assessment can occur just as the CEC currently considers meeting the State's reliability and GHG targets: "[i]f any assessments do not meet the reliability constraints or policy objectives, the portfolio or capacity expansion model would be adjusted and reassessed."[79] Rather than failing to incorporate NEBs and social costs into decision-making, as remains the case today, the CEC's new rulemaking must consider how to add in NEBs and social costs as similar "constraints or policy objectives." In other words, CEC cost-effective determinations should comply with existing legal standards, and where necessary, incorporate new standards.

Just as existing portfolio models do not allow resource portfolios to exceed GHG limits and reliability standards, the CEC must similarly also not exceed, for instance, water quality, quantity or local air quality standards. We provide three examples to illustrate how this process should work: land use and species impacts; human health and welfare; and resiliency.

1. The CEC Should Quantitatively and Qualitatively Assess Land Use And Species Impacts.

We concur with the CEC's determination to evaluate land-use impacts separately from other NEBs.[80] Certainly, it is well settled that distributed generation avoids significant environmental impacts from avoided transmission and utility-scale renewable buildout.[81] Poorly sited large-scale solar development, for instance, can result in habitat fragmentation, loss of connectivity for terrestrial wildlife, destruction of carbon sequestration of soils, and introduction of predators and invasive weed species on intact habitat.[82] But to put dollar values on those

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79 2021 Joint Agency Report at 62.

80 *See* Petition at 9 (citing to CEC SB 100 Pathway Analysis that separates Non-Energy Benefits and Impacts from Land Use Analysis).

81 *See e.g.* CPUC 2022 Distributed Energy Resources Avoided Cost Calculator Documentation, *available at* https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/demand-side-management/acc-models-latest-version/2022-acc-documentation-v1a.pdf. (Although Petitioners dispute the values of avoided transmission used by the tool, and other social costs omitted by the tool thus far.)

82 *See e.g.* Luke Gibson et al., *How Green is "Green" Energy?* 32 Trends in Ecol. & Evol. 2306 (2017) *available at* https://pubmed.ncbi.nlm.nih.gov/29074270/. Critically, although ample space exists to develop solar facilities outside areas of high conservation value, some of the nation's utility-scale solar development has occurred in core ecological habitats. Careful siting on already built environments, like residential and commercial building rooftops and parking lots, as well as degraded lands and areas without imperiled species, can avoid these impacts. *See* R.R. Hernandez et al., *Techno-Ecological*

environmental values—such as wildlife, ecosystem services, viewscapes and soundscapes—is impossible without diminishing their worth. As leading scholars have explained, "[t]he basic problem with narrow economic analysis of health and environmental protection is that human life, health, and nature cannot be described meaningfully in monetary terms; they are priceless."[83]

Moreover, attributing dollar values to biodiversity is simply not possible. Congress has made the value of species absolutely clear. The Endangered Species Act itself states, "The Congress finds and declares that . . . these species of fish, wildlife, and pants are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people."[84] Indeed when Congress passed the Act, it explained that "[t]he value of this genetic heritage is, quite literally, incalculable. . . . They are keys to puzzles which we cannot solve, and may provide answers to questions which we have not yet learned to ask."[85]

Accordingly, in *Tennessee Valley Authority v. Hill*, the Supreme Court recognized that the "plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, *whatever the cost*. This is reflected not only in the stated policies of the Act, but in literally every section of the statute."[86] There is no standard value of an endangered plant or animal, or of a species as a whole.

Valuation of habitat benefits to species is likewise difficult, and while valuing the benefits to humans from maintaining such habitats can be accomplished, it only tells one part of the story. Thus, for example, the value of maintaining healthy watersheds that supply clean water to towns and cities can be calculated by the cost of replacement services, but there is no way to calculate the loss of habitat values for plants and wildlife.[87]

Synergies of Solar Energy for Global Sustainability, 2 Nature Sustain. 560 (2019); D. Richard Cameron et al., *An Approach to Enhance the Conservation-Compatibility of Solar Energy Development*, PLOS One (2012). *See also* Patrick Donnelly & Jean Su, *No free lunch on green energy*, Las Vegas Review-Journal (June 19, 2021) *available at* https://www.reviewjournal.com/opinion/nevada-views-no-free-lunch-on-green-energy-2382525/; Noelle Swan, *Energy, Wildlife, and the Myth of the Zero-Sum Game*, Christian Science Monitor (July 12, 2021), https://www.csmonitor.com/Commentary/From-the-Editor/2021/0712/Energy-wildlife-and-the-myth-of-the-zero-sum-game.

83 *See* Fran Ackerman and Lisa Heinzerling, *Priceless* (2004) at 8.

84 *Tennessee Valley Auth. v. Hill,* 437 U.S. 153 (1978); 16 U.S.C. § 1531.

85 H.R. Rep. No. 93-412, 1973.

86 *Tennessee Valley Authority v. Hill,* 43 U.S. 153, 180 (1978) (emphasis added).

87 *See also* Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, *Methodological assessment regarding the diverse conceptualization of multiple values of nature and its benefits, including biodiversity and ecosystem functions and services*, *available at* https://www.ipbes.net/the-values-assessment.

Since there is no standardized way to assess the irreparable damage done when a species or habitat is harmed and no way to quantify the immeasurable benefit of a species' success, there can be no standardization of a cost-benefit analysis that will adequately address their value. The CEC should therefore quantify avoided land use impact values where possible, but recognize that those numbers will always be incomplete and therefore insufficient, warranting additional qualitative assessment.[88]

2. The CEC Should Quantitatively and Qualitatively Consider Impacts to Human Health and Welfare.

Similarly, putting precise cost values on public health is also an impossible task. Doing so involves judging how much life, or a healthy life, is worth—such as how much more valuable a life may be without asthma, a heart attack, or the myriad other adverse health effects caused by the air and water pollution. Indeterminate values are inherent in any "value of life" analysis, be they based on age, potential earnings, or any other factor. And even if a singular value is provided for every person, determining that value itself is loaded with subjective factors, typically based on numerous wage-risk related assumptions. Contingent valuation studies—which assign values based on participants' responses to survey questions regarding how they value something—suffer from similar limitations.

For these reasons among others, for example, the federal EPA's "Value of a Statistical Life" approach is both quantitatively and morally problematic.[89] This approach relies on the values that individuals themselves place on certain risks, which is inherently subjective, and due to income-based measurement, inequitable. In short, because traditionally, "the quantification and valuation of NEBs rely largely on self-report via survey responses," they "have a high degree of variability across participants," which "renders the reliable quantification of impacts particularly difficult."[90]

For precisely these reasons, the courts have recognized the importance of qualitative evaluation when valuing impacts to human health and welfare.

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88 *See* Nature, *Diverse values of nature for sustainability* (August 9, 2023), *available at* https://www.nature.com/articles/s41586-023-06406-9. ("A better understanding of how and why nature is (under)valued is more urgent than ever . . . combinations of values-centred approaches are proposed to improve valuation and address barriers to uptake.")

89 EPA, Mortality Risk Valuation, *available at* https://www.epa.gov/environmental-economics/mortality-risk-valuation#means ("when conducting a benefit-cost analysis of new environmental policies, the Agency uses estimates of how much people are willing to pay for small reductions in their risks of dying from adverse health conditions that may be caused by environmental pollution.")

90 California Institute for Energy and the Environment, Addressing Non-Energy Benefits in the Cost-Effective Framework, *available at* https://library.cee1.org/system/files/library/9734/CEE_EvalNEBCostEffect.pdf

The courts have generally rejected approaches that could devalue human life. In *Whitman v. American Trucking Associations*, the Supreme Court rejected the argument that EPA must weigh costs in determining air quality standards under the National Ambient Air Quality Standards ("NAAQS") program.[91] In that case, the Court found that Congress intended the NAAQS be set *solely* on the basis of the levels necessary to protect public health and welfare, without taking the costs of compliance into account.[92]

In specific regards to cost-benefit analyses, in *California v. Bernhardt*, the federal district court rejected a Bureau of Land Management's ("BLM") cost-benefit analysis precisely because BLM had failed to do the appropriate qualitative assessment of NEBs.[93] In that case, although BLM had recognized the negative impacts posed by air pollution on human health and welfare, the agency had "made no attempt to evaluate" them or "weigh them against the purported benefits."[94]

Rejecting that approach, the Court explained that "[c]osts and benefits shall be understood to include both quantifiable measures . . . *and qualitative measures of costs and benefits that are difficult to quantify.*"[95] More specifically, the Court found that the agency was required to "assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs."[96]

In making such a reasoned determination, the Court clarified that in assessing "all costs and benefits of regulatory actions," agency action must "also include[e] the qualitative and non-monetized factors."[97] In sum, as the Ninth Circuit has similarly explained, in utilizing cost-benefit analyses, "agencies cannot put a thumb on the scale by undervaluing the benefits and overvaluing the costs . . . [and should do so] in either quantitative or qualitative form."[98]

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91 *Whitman v. American Trucking Ass'ns., Inc.,* 531 U.S. 457 (2001).

92 *Id.*

93 *California v. Bernhardt*, 472 F. Supp. 3d 573 (N.D. Cal. 2020) at 616.

94 *Id.*

95 *Id.* at 615 (emphasis added).

96 *Id.*

97 *Id., citing* OMB Circular A-4 and Executive Order 12866.

98 *Center for Biological Diversity v. Nat. Highway Traffic Safety Admin.* (9th Cir. 2008) 538 F.3d 1172, 1198.

Consequently, the CEC should quantify values for health related costs where possible, but recognize that those numbers will always be incomplete and therefore insufficient, warranting additional qualitative assessment.

3. The CEC Should Qualitatively Consider Resiliency.

As the Interstate Renewable Energy Council has explained, "[q]uantifying resilience benefits is inherently difficult as it depends on the assumed risk of extended blackouts, the assumed cost to strengthen the grid to avoid that risk, and the assumed ability of DER to strengthen the grid."[99]

Rooftop solar, for instance, whether as community solar paired with storage, or as a component of a community microgrid, can reduce the length of outages from extreme weather events, or avoid them altogether, thereby reducing public health and safety risks.[100] In contrast, the current fossil-fuel reliant, centralized grid often fails to withstand natural disasters or extreme weather events, as damage at a small number of points causes life-threatening power outages for large numbers of residents.[101] The impacts and continued risks posed by transmission line induced wildfires in California is clear.

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99 *See* Jason B. Keyes et. al., *A Regulator's Guidebook: Calculating the Benefits and Costs of Distributed Solar Generation, Interstate Renewable Energy Council*, Inc. (October 2013), *available at* https://irecusa.org/wp-content/uploads/2021/07/IREC_Rabago_Regulators-Guidebook-to-Assessing-Benefits-and-Costs-of-DSG.pdf; *See also* Heather Payne, Johas Monast, *Valuing Distributed Energy Resources: A Comparative Analysis*, University of North Carolina Center for Climate, Energy, Environment and Economics, June 4, 2018, https://law.unc.edu/wp-content/uploads/2019/09/derpaperfinal.pdf.

100 Gridworks & GridLAB, *The Role of Distributed Energy Resources in Today's Grid Transition*, 7-9, (Aug. 2018) *available at* http://gridlab.org/wp-content/uploads/2019/04/GridLab_RoleOfDER_online-1.pdf; *see also* Power Engineering, *Microgrid with long-duration energy storage to help power California children's hospital* (Sept. 25, 2023) *available at* https://www.power-eng.com/on-site-power/microgrids/microgrid-with-long-duration-energy-storage-to-help-power-california-childrens-hospital/#gref. ("The microgrid system is designed to safeguard critical hospital operations during utility outages.")

101 Paul W. Parfomak, *Physical Security of the U.S. Power Grid: High Voltage Transformer Substations*, Cong. Rsch. Serv., June 17, 2014, . Numerous studies and reports highlight the climate resiliency advantages of DERs. *See* e.g. Nat'l Acad. of Science, Eng'g & Med., *Enhancing the Resilience of the Nation's Electricity System*, Washington, DC: The National Academies Press 108 (2017) *available at* https://nap.nationalacademies.org/catalog/24836/enhancing-the-resilience-of-the-nations-electricity-system; Dyson, M. and B. Li, *Reimagining Grid Resilience: A Framework for Addressing Catastrophic Threats to the US Electricity Grid in an Era of Transformational Change* (2020) *available at* https://rmi.org/wp-content/uploads/2020/07/reimagining_grid_resilience.pdf; *See also* Weinrub & Fairchild; Sherry Stout et al., Nat. Renewable Energy Lab., Distributed Energy Planning for Climate Resilience (2018) *available at* https://www.nrel.gov/docs/fy18osti/71310.pdf; *See also* John Farrell, *The New Rules Project, Community Solar Power: Obstacles and Opportunities*, Institute for Local Self-Reliance (2010) *available at* https://ilsr.org/wp-content/uploads/files/communitysolarpower2.pdf

Examples from Puerto Rico further illustrate the myriad of resilience benefits from DERs. When Hurricane Maria devastated Puerto Rico in 2017, many of the resulting deaths occurred during the long-standing outages after the storm as people were unable to run lifesaving medical equipment or refrigerate lifesaving medicine.[102] Yet, when Hurricane Fiona hit Puerto Rico last September, homes and essential community services that had installed rooftop solar with battery storage did not lose power.[103] Firefighters in Puerto Rico have emphasized the value of solar plus storage battery systems to allow them to receive emergency calls after the power goes out, whereas after both Hurricane Maria and a 2020 earthquake they had to rely on people yelling for help.[104]

In this regard, any standards for resilience that the CEC develops should penalize fossil fuel sources, specifically because those sources contribute to the climate emergency and increasing power outages. Resilience strategies must enable "communities not only to 'bounce back' from a disruption, but to 'bound forward' and improve the resilience and quality of life for all residents."[105]

Evidently, difficulties in quantifying a value of resilience are further complicated by the range of benefits conferred by distributed energy infrastructure. For instance, at the Blue Lake Rancheria, "tribal leaders have long embraced critical climate-smart infrastructure investment as a strategic pillar that supports 'lifeline sector' resilience . . . includ[ing] energy, water, transportation, communications, and food."[106] How can one adequately value all of the benefits of the tribal microgrid, that also encompass "continuity of operations, economic support,

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102 Ruth Santiago, *Puerto Rico's future is solar. Recovery funds should go there, not to its outdated grid*, Grist (July 26, 2021) *available at* https://grist.org/fix/opinion/puerto-rico-rooftopsolar-energy-fema-recovery-funds/; In addition, DERs can be used to create "islandable" generation that operates even when outages do occur. *See* Gridworks & GridLAB, *The Role of Distributed Energy Resources in Today's Grid Transition* 7-9 (Aug. 2018) *available at* http://gridlab.org/wp-content/uploads/2019/04/GridLab_RoleOfDER_online-1.pdf.

103 Maria Gallucci, *Solar is lifeline in Puerto Rico after Hurricane Fiona knocks out power,* Canary Media (Sept. 19, 2022) *available at* https://www.canarymedia.com/articles/solar/solar-offers-lifeline-in-puerto-rico-after-fiona-knocks-out-power.

104 Aidan Tuohy, *Enhancing Energy System Reliability and Resiliency in a Net-Zero Economy*, Electric Power Research Institute (January 2022) *available at* http://mydocs.epri.com/docs/public/EPRI-Report-EnhancingEnergySystemReliability-20210804.pdf.

105 *See* Logan and Guikema, *Reframing Resilience: Equitable Access to Essential Services* (2020) *available at* https://onlinelibrary.wiley.com/doi/abs/10.1111/risa.13492.

106 Office of Indian Energy Policy and Programs, *Tribal Microgrids Support Tenuous Lifelines During Grid Shutdowns* (October 8, 2021), *available at* https://www.energy.gov/indianenergy/articles/tribal-microgrids-support-tenuous-lifelines-during-grid-shutdowns.

improvement in community health and other social services, increased employment,"[107] and basic life support?

Resilience also becomes even more valuable depending on demographics and location. Thus, for example, resilience is likely more "valuable" for those who are chronically disabled, caring for the elderly or children, live in structurally deficient housing, or rely on medical equipment that requires electricity or medicine that must be refrigerated. Similarly, resilience is especially vital where it helps maintain electric supply to critical public infrastructure, like hospitals, fire stations, community centers, and cell towers, in the wake of natural disasters.[108] It is further important to note that economically and environmentally disadvantaged communities have historically been exposed to more health-damaging pollutants, and face higher risk with less resilient infrastructure.[109] As such, even if probabilities and risk were equal, poorer communities lack resources to buy or finance self-resilience in the household.

This latter observation regarding economically and environmentally disadvantaged communities emphasizes that while these collective resilience benefits should be considered in cost-effectiveness determinations, they are difficult—if not impossible—to reduce to specific dollar numbers. Instead, it may be more appropriate to explore resiliency standards that energy procurement decisions must meet, just as for GHGs and reliability, maintaining "equitable access to essential services."[110]

B. The Requested Rulemaking Should Utilize a Lifecycle Analysis to Integrate NEBs and Social Costs into Cost-effectiveness Determinations.

As the Legislature has explained, the CEC must engage in "lifecycle cost evaluation" in analyzing energy matters, because "[i]t is in the best interest of the state to use [physical and natural] resources when it can be demonstrated that *long-term* cost, water, and energy use reduction will result."[111]

Several courts have recognized the importance of this kind of analysis, holding that an agency's obligation to analyze environmental impacts must encompass all "reasonably

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107 *Id.*

108 *Supra*, note 105.

109 *See* Brockway, A. M., Conde, J., & Callaway, D., *Inequitable access to distributed energy resources due to grid infrastructure limits in California*. Nature Energy, 6(9), Article 9 (2021) *available at* https://doi.org/10.1038/s41560-021-00887-6; *see also* Nicoletti, L., Sirenko, M., & Verma, T., *Disadvantaged communities have lower access to urban infrastructure*, Environment and Planning B: Urban Analytics and City Science, 50(3), 831-849 (2023) *available at* https://doi.org/10.1177/23998083221131044.

110 *Supra,* note 105.

111 Cal. Pub. Res. Code § 25008.

foreseeable" impacts.[112] For instance, in *Wilderness Workshop v. United States Bureau of Land Management*, plaintiffs contended that the BLM failed to analyze the foreseeable GHG emissions resulting from combustion or other end uses of the oil and gas extracted from the project area.[113] The court noted that indirect impacts are those caused by the major federal action and are later in time or farther removed in distance, *but still reasonably foreseeable*.[114] The court further elaborated that an effect is reasonably foreseeable if it is "sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision."[115] The court ultimately found that the downstream effects of GHG emissions were foreseeable indirect effects, and thus held that the agency acted arbitrarily and capriciously by not taking a hard look at the indirect effects resulting from the combustion of oil and gas.[116]

Here, the CEC must similarly modify its cost-effectiveness determinations to include all reasonably foreseeable lifecycle impacts. For instance, the CEC must also consider the reasonably foreseeable impacts of combusting biogas or other polluting feedstocks.

Regarding the beginning of the lifecycle, for example, when assessing the costs and benefits of biomethane production from dairies or CAFOs, the *status quo* analysis improperly ends at the anaerobic digester. While the dairy or CAFO may be "farther removed in distance," the expansion of respective dairies or CAFOs and resulting increased energy consumption would not occur *but for* enabling the production of sufficient quantities of biomethane.[117] In other

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112 *See e.g.*, *San Juan Citizens All. v. United States Bureau of Land Mgmt.*, 326 F. Supp. 3d 1227, 1244 (D.N.M. 2018) (finding that combustion emissions from resource consumption were an indirect effect of an agency's oil and gas leasing decision and that it was erroneous for the BLM to fail to consider, at the earliest stage feasible, the environmental consequences of the downstream combustion of the resources opened to development by the proposed action); *WildEarth Guardians v. Zinke*, 368 F. Supp. 3d 41, 73 (D.D.C. 2019) (finding that BLM's oil and gas consumption was a reasonably foreseeable indirect effect of the lease sales, as it was "the [] project's entire purpose," that BLM could have declined to sell the oil and gas leases at issue if the environmental impact of those leases would not be in the public's long term interest, and since the lease sales were a legally relevant cause of downstream GHG emissions, BLM was required to consider those emissions as indirect effects of oil and gas leasing); *W. Org. of Res. Councils*, 2018 WL 1475470 at 13 (noting that an agency is required to quantify the reasonably foreseeable GHG emissions).

113 *Wilderness Workshop v. United States Bureau of Land Mgmt.*, 342 F. Supp. 3d 1145, 1155 (D. Colo. 2018).

114 *Id.* at 1155.

115 *Id.* (citing *Colorado Envtl. Coal. v. Salazar*, 875 F. Supp. 2d 1233, 1251 (D. Colo. 2012)).

116 *Id.* at 1155-56.

117 *See* CPUC Solicitation for SB1383 Dairy Pilot Projects, Project Applications (2018): Lakeside Pipeline L.L.C. at 15, 17 ("The individual digesters have been sized to accommodate the full current size of the dairy herds plus all likely expansions of those dairies. Expansion of a dairy herd significantly beyond current expectations would require additional covered digester ponds, at a cost proportional to the

words, the environmental impacts of increased herd sizes and energy consumption *are reasonably foreseeable*, which the CEC must—but does not yet—consider. These impacts are also significant. Increases in herd sizes to facilitate biomethane production are associated with increased local and regional air pollution, increased water pollution, and increased GHG emissions.[118] Regarding energy consumption, in one example to facilitate biomethane production, a dairy anticipated a 208% increase in energy use, including a nearly 14-fold increase in electricity use and a 50% increase in diesel use.[119]

To meet the intent of sections 25000.1 and 25008, cost-effectiveness determinations must no longer be blind to these and other similar significant—and reasonably foreseeable—lifecycle impacts. Accordingly, the CEC should utilize a lifecycle analysis that includes all reasonably foreseeable impacts of energy production and consumption when incorporating NEBs and social costs into cost-effectiveness determinations.

VI. The CEC has the Authority to Grant the Petition and Adopt An Order Instituting a Rulemaking Proceeding.

As detailed throughout this petition, the CEC has the authority to grant this petition pursuant to the Warren-Alquist Act (Pub. Res. Code §§ 25000.1, 25008), SB 100,[120] SB 350, and the recommendations from the SB 350 Barriers Study and the DACAG.

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initial installation. However, the gathering lines would already be in place and so the project would realize some economies of scale from replication. More importantly, the project area includes 11 potential expansion digesters"); Five Points Pipeline, L.L.C. at 27 ("A major market barrier to cluster projects is procuring enough contracted feedstock to be able to build to the scale necessary for biomethane injection"); *Id.* at 29 ("The individual digesters have been sized to accommodate the full current size of the dairy herds plus all likely expansions of those dairies"); Merced Pipeline L.L.C. at 19, 37, 40 ("The individual digesters have been sized to accommodate the full current size of the dairy herds plus all likely expansions of those dairies.")

118 *See supra* note 5.

119 *CPUC Solicitation for SB1383 Dairy Pilot Projects*, Van Exel Dairy Project Application (2018) at 25-26: (pre-project electricity consumed (126 MWh/year) compared to post-project Biogas Control System installed electricity consumed (1,750 MWh/year) and similar increase in diesel fuel consumption (from 15,600 to 24,000 gallons).

120 The plain language of SB 100 requires the CEC to consider air pollution and water quality. An explicit goal of the statute is "[r]educing air pollution, *particularly criteria pollutant emissions and toxic air contaminants*, in the state." Sen. Bill No. 100 (2017–2018 Reg. Sess.) § 2, subd. (b)(3) (emphasis added). Similarly, the CEC must "prevent unreasonable impacts to . . . water customer rates and bills resulting from implementation . . . taking in full consideration the economic and environmental costs and benefits[.]" *Id.* § 5, subd. (b)(2).

Petitioners emphasize it would be improper to defer this rulemaking to the CPUC. The Legislature is clear that the CEC has independent authority to grant this Petition.[121] Moreover, the CPUC itself has avoided responsibility to adequately integrate NEBs and social costs into decision-making on several occasions.[122] Notably in 2016, the CPUC stated that the agency was working on this critical issue,[123] but even today has made little progress. In fact, in its decision approving the successor Net Energy Metering (NEM 2.0) tariff, the CPUC considered integrating societal costs, but stated—improperly—that development of values for societal costs, such as land use benefits, local economic benefits and water quality or supply are, "outside the scope of the Commission's expertise, and in some cases are clearly committed to other agencies."[124] That decision continued that "[the CPUC] expects that it will be possible to develop [such] valuation" in the Net Billing Tariff proceeding—yet, to date, the CPUC has failed to integrate these critical values into its cost-effectiveness evaluations.[125]

On the other hand, the CEC has already committed to developing values for NEBs and other social costs and benefits. Following a Request for Proposals process, the CEC has recently retained a consultant to "identify a suite of social costs and non-energy benefits that can inform decisions about clean energy deployment scenarios."[126] The CEC is primed to meet its long overdue mandate to consider the externalities of its resource planning, investment, and other related decisions. To meet its legislative mandates, however, the CEC must first grant this Petition to institute a rulemaking on these issues that is transparent and open to the public.

VII. Conclusion

For the foregoing reasons, Petitioners request that the CEC grant this Petition and adopt an order to institute a rulemaking proceeding, subject to the recommendations in section (V), and

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121 Pub. Res. Code § 25000.1(c) ("if the [CEC] determines that a value developed pursuant to this subdivision is not consistent with a value developed by the Public Utilities Commission pursuant to subdivision (c) of Section 701.1 of the Public Utilities Code, the [CEC] may nonetheless use this value if, in the appropriate record of its proceedings, it states its reasons for using the value it has selected.")

122 *See e.g.* Pub. Util. Code. § 454.5 (requiring assessment of health and environmental impacts).

123 Barriers Study at 59 (CPUC is considering how non-energy benefits can be better addressed in low-income programs both for energy efficiency and solar, citing CPUC staff comments at 2016 SB 350 Low-Income Barriers Study Workshop.)

124 CPUC Decision 16-01-044 at 59.

125 *See also* Rabago, Rabago Energy, *Revisiting Lost Revenues and Cost-Effectiveness Testing in a World of Expanding DERs: Lessons from the Frontlines of Benefit-Cost Analysis*, *available at* https://www.nationalenergyscreeningproject.org/revisiting-lost-and-cost-effectiveness-testing-in-a-world-of-expanding-ders/ ("The cost shift argument . . . does not include an evaluation of the net benefits and costs of distributed generation.")

126 CEC RFP-23-801, Social Costs and Non-Energy Benefits, Questions and Answers (August 15, 2023) at A25.

determine methodologies to integrate NEBs and social costs into cost-effectiveness, planning and investment decision-making as soon as possible.

Respectfully submitted,

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Center for Biological Diversity

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Malinda Dickenson
The Protect Our Communities Foundation

Kurt Johnson
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Jason John
Sierra Club California

Andie Wyatt
GRID Alternatives

Ben Schwartz
Clean Coalition

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350 Bay Area

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Environment California

Appendix A
Other Petitioner Information

The Central California Asthma Collaborative's (CCAC) mission is to provide education and direct services, build regional capacity and advocate for sensible policies that improve health and address inequities by reducing environmental impacts and emphasizing the prevention and management of chronic disease. CCAC sees a San Joaquin Valley where the health of every resident is our foremost concern and envisions environments and systems of support for health reflected in the resources, information, activities and policies in every community.

CCAC has offices located in Fresno, California, at 1939 N. Gateway Blvd. Suite 103, and Bakersfield, California, at 1400 Chester Ave. Suite J, and is available at (559) 272-4874.

The California Environmental Justice Alliance (CEJA) is a statewide, community-led alliance that works to achieve environmental justice by advancing policy solutions. CEJA unites the powerful local organizing of our members in the communities most impacted by environmental hazards—low-income communities and communities of color—to create comprehensive opportunities for change at a statewide level to alleviate poverty and pollution. Together, CEJA is growing the statewide movement for environmental health and social justice, with a membership that includes 35,000 Asian Pacific American, Latino, and African American residents in the San Francisco Bay Area, San Joaquin Valley, Los Angeles, Inland Valley and San Diego/Tijuana area.

CEJA's member and partner organizations include the Asian Pacific Environmental Network, Communities for a Better Environment, Center for Community Action and Environmental Justice, Center on Race, Poverty and the Environment, Environmental Health Coalition, People Organizing to Demand Environmental and Economic Rights, the Central Coast Alliance United for a Sustainable Economy, Leadership Counsel for Justice and Accountability, Physicians for Social Responsibility – Los Angeles, and Strategic Concepts in Organizing and Policy Education.

CEJA has an office located in Oakland, California, at 1820 Jefferson Street and is available at (510) 808-5898.

The Asian Pacific Environmental Network (APEN) is an environmental justice organization that, since 1993, has built a membership base of Laotian refugees in Richmond and Chinese immigrants in Oakland. APEN brings together a collective voice to develop an alternative agenda for environmental, social and economic justice.

Through building an organized movement, APEN strives to bring fundamental changes to economic and social institutions that will prioritize public good over profits and promote the right of every person to a decent, safe, affordable quality of life, and the right to participate in decisions affecting our lives. APEN holds this vision of environmental justice for all people.

APEN has an office located in Oakland, California, at 426 17th Street, Suite 500, and is available at (510) 834-8920.

The Greenlining Institute works towards a future where communities of color can build wealth, live in healthy places filled with economic opportunity, and are ready to meet the challenges posed by climate change. Greenlining is building an abundant future that brings investments and opportunities into our communities. Since 1993, Greenlining has successfully advocated and negotiated initiatives directing more than $800 billion in corporate and public investments into communities of color in California and across the nation.

Greenlining has an office located in Oakland, California, at 360 14th Street and is available at (510) 926-4001.

The Local Clean Energy Alliance is the Bay Area's foremost membership organization working at the local, state, and national level to promote a clean energy future through the development and democratization of local renewable energy resources. The Local Clean Energy Alliance sees these resources as key to addressing climate change, advancing social and racial justice, and building sustainable and resilient communities.

The Local Clean Energy Alliance has an office located in Oakland, California, at 339 15th Street, Suite #208.

Sierra Club California is the legislative and regulatory advocacy arm for Sierra Club chapters in California. The mission of Sierra Club California is to promote the preservation, restoration, and enjoyment of California's environment, and enable chapters and grassroots activists to speak as one voice to promote California conservation.

Sierra Club California is based in Sacramento and is available at (916) 557-1100

The Climate Center (TCC) is focused on equitably reducing climate pollution at the speed and scale necessary to secure a climate-safe future. TCC makes change through an ambitious and achievable vision, developing science-based research to drive policy, and mobilizing a powerful coalition of climate advocates across sectors. TCC helps Californians turn their concern about the climate crisis into action, building momentum for climate-friendly policies that benefit nature and our communities.

The Climate Center has an office located in Santa Rosa, California, at 1275 4th St. #191 and is available at (707) 525-1665.

The Center on Race, Poverty and the Environment (CRPE) is a national environmental justice organization providing legal, organizing, and technical assistance to grassroots groups in low-income communities and communities of color.

CRPE believes social change comes from the ground up. Low income communities and communities of color most impacted by pollution need to define the problems and craft the

solutions for their communities. CRPE combines community organizing, legal representation, policy advocacy, and coalition building to create power and systemic change.

CRPE has an office located in Delano, California, at 1012 Jefferson Street, and is available at (661) 720-9140.

The Clean Coalition is a nonprofit organization whose mission is to accelerate the transition to renewable energy and a modern grid through technical, policy, and project development expertise.

The Clean Coalition has offices in Santa Barbara and Menlo Park in California, and is available at (650) 308-9046.

350 Bay Area is a non-profit organization focused on ensuring a sustainable climate and associated environmental and economic justice for all, with a reach of over twenty-two thousand people, primarily concentrated in the nine Bay Area counties.

350 Bay Area's mission is to build a grassroots climate movement in the Bay Area and beyond to eliminate carbon pollution and achieve a clean energy future with racial, economic, and environmental justice.

350 Bay Area has an office in Oakland, California, and is available at (510) 473-5490.

GRID Alternatives envisions a rapid, equitable transition to a world powered by renewable energy that benefits everyone. GRID Alternatives' mission is to build community-powered solutions to advance economic and environmental justice through renewable energy.

GRID Alternatives has an office located in Oakland, California, at 1171 Ocean Avenue, Suite 200, and is available at (510) 731-1310.

The Protect Our Communities Foundation (PCF) is a nonprofit public benefit corporation formed and existing under California law with headquarters in San Diego. It is organized exclusively for charitable and public purposes. PCF represents the interests of San Diego and Southern California residential ratepayers in proceedings before the California Public Utilities Commission, other California agencies and in the courts. PCF advocates against unreasonably costly and unnecessary fossil-fueled utility projects, against investor-owned utility decarbonization strategies designed to maximize utility profits over consumer and GHG emissions reduction benefits. PCF advocates for clean, local, equitable energy solutions, in support of just and reasonable utility rates, and in support of equitable energy practices, polices, rules, and laws.

PCF has an office located in San Diego, California, at 4452 Park Blvd #309, and is available at (619) 693-4788.

The Building Energy, Equity & Power (BEEP) Coalition represents environmental justice communities in various parts of California. The BEEP Coalition's mission is to ensure low-

income consumers and consumers of color benefit, and are not adversely impacted by, building decarbonization efforts in California. The Coalition was formed for a simple reason: low-income communities and communities of color are being left behind in conversations about building decarbonization.

The BEEP Coalition includes the Central Valley Air Quality Coalition, which has an office located in Fresno, California, at 4991 E McKinley Ave, Suite 109.

The Local Government Sustainable Energy Coalition (LGSEC) is a statewide membership network representing local government interests related to clean energy and climate resilience to state regulatory agencies. Together, LGSEC members advance sustainable energy and climate solutions to meet California's decarbonization goals through knowledge exchange, targeted learning opportunities, and statewide collaboration. LGSEC has built the blueprint for California's energy strategy through the formation of Local Government Partnerships (LGPs), Regional Energy Networks (RENs), and Community Choice Aggregations (CCAs). LGSEC members pool their resources to make sustainable energy and resilience achievable for all California's local governments.

Environment California works for clean air, clean water, clean energy, wildlife and open spaces, and a livable climate. Environment California and its members throughout the state envision a greener California: one that protects more places where nature can thrive, and offers us and our children a greater opportunity to live healthier, more enriching lives.

Through research, public education, advocacy, litigation and action, Environment California advances policies and practices that put our state and our country on a better path.

Environment California has an office located in Los Angeles at 3435 Wilshire Blvd., and is available at (213) 251-3688.

ATTACHMENT B

Studies that show the need to adequately account for NEBs and Social Costs

- CEC, *Low-Income Barriers Study, Part A: Overcoming Barriers to Energy Efficiency and Renewables for Low-Income Customers and Small Business Contracting Opportunities in Disadvantaged Communities Barriers Study* (December 2016) ("Barriers Study"), *available at* https://assets.ctfassets.net/ntcn17ss1ow9/3SqKkJoNIvts2nYVPAOmGH/7bc56e2692769abda31a2aace7b00147/TN214830_20161215T184655_SB_350_LowIncome_Barriers_Study_Part_A__Commission_Final_Report.pdf.

- Fournier et al, *Net GHG Emissions and Air Quality Outcomes from Different Residential Building Electrification Pathways within a California Disadvantaged Community*, Sustainable Cities and Society 86 (2022) 104128 at 13, *available at* https://www.sciencedirect.com/science/article/pii/S2210670722004413?via%3Dihub.

- Catherine Garoupa White, *Reframing Air Pollution as a Public Health Crisis in California's San Joaquin Valley*, Case Studies in the Environment (April 9, 2020) *available at* https://doi.org/10.1525/cse.2020.sc.965681.

- Jim Lazar and Ken Colburn, *Recognizing the Full Value of Energy Efficiency (What's Under the Feel-Good Frosting of the World's Most Valuable Layer Cake of Benefits)* (September 2013), *available at* https://www.raponline.org/wp-content/uploads/2016/05/rap-lazarcolburn-layercakepaper-2013-sept-09.pdf.

- Annual Review of Environment and Resources, *Three Decades of Climate Mitigation: Why Haven't We Bent the Global Emissions Curve?* (October 2021), *available at* https://www.annualreviews.org/content/journals/10.1146/annurev-environ-012220-011104#:~:text=4.1.-,Economics,-and%20Financialization.

ATTACHMENT C

Studies that show the local impacts or social costs that an adequate analysis or methodology would address

- Buonocore, Jonathan J. et al., *A decade of the U.S. energy mix transitioning away from coal: historical reconstruction of the reductions in the public health burden of energy*, 16 Env't Rsch. Letters 054030 (2021), *available at* https://doi.org/10.1088/1748-9326/abe74c

- Donaghy, Timothy Q. et al., *Fossil fuel racism in the United States: How phasing out coal, oil, and gas can protect communities*, 100 Energy Research & Social Science 103104 (2023), *available at* https://doi.org/10.1016/j.erss.2023.103104

- Union of Concerned Scientists, *Environmental Impacts of Natural Gas*, (June 2014) *available at* https://www.ucsusa.org/resources/environmental-impacts-natural-gas

- Union of Concerned Scientists, *How it Works: Water for Natural Gas* (July 2013) *available at* https://www.ucsusa.org/resources/water-natural-gas#:~:text=About%20one%20fifth%20of%20electricity,fuel's%20chemical%20energy%20into%20electricity

- Tran, Huy et al., *Emissions of wood pelletization and bioenergy use in the United States*, 219 Renewable Energy 119536 (2023), *available at* https://doi.org/10.1016/j.renene.2023.119536

- Makhijani, Arjun & Thom Hersbach, *Water Requirements For Various Approaches To Hydrogen Production: Quantitative, Siting, and Resilience Considerations*, Prepared for Just Solutions Collective (January 2024), *available at* https://justsolutionscollective.org/wp-content/uploads/2024/01/IEER-Water-Report-r2.pdf

- *Prepared Testimony of Dr. Dustin Mulvaney, Julia Jordan, and Leslie Martinez on behalf of Sierra Club and Leadership Counsel for Justice and Accountability on the Application of Southern California Gas Company and San Diego Gas & Electric Company for Renewable Natural Gas Tariff* at 31, CPUC Docket A.19-02-015 (Oct. 14, 2019).

- Jacobson, Mark Z., *The health and climate impacts of carbon capture and direct air capture, 12 Energy & Environmental Science* (2019), *available at* https://doi.org/10.1039/C9EE02709B

- *128 California Academics Respond to California Air Resources Board 2022 Scoping Plan* (June 14, 2022) *available at* https://caleja.org/wp-content/uploads/2022/06/Academics-Scoping-Plan-Letter-6.14.22-.pdf.

- *73 Organizations Call for A Just and Ambitious 2022 Scoping Plan* (June 2, 2022) *available at* https://earthjustice.org/wp-content/uploads/73_orgs_letter_-_a_just_and_ambitious_scoping_plan.pdf

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ATTACHMENT D

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