



7 December 2022

California Energy
Commission
715 P Street, Sacramento,
CA 9581
Via Electronic Filing

RE: CEC Docket 22-IEPR-01: Clean Coalition Comments on Draft Integrated Energy Policy Report

Dear Chair, California Energy Commission Members, and Staff,

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 drives policy innovation to remove barriers to procurement and interconnection of distributed energy resources (“DER”) — such as local renewables, demand response, and energy storage — and we establish market mechanisms that realize the full potential of integrating these solutions for optimized economic, environmental, and resilience benefits. The Clean Coalition also collaborates with utilities, municipalities, property owners, and other stakeholders to create near-term deployment opportunities that prove the unparalleled benefits of local renewables and other DER.

We appreciate the opportunity to submit this response and are appreciative of all the work that Staff put into this draft IEPR. Our comments are aimed at providing some specific suggestions that can be included in the final IEPR about how the Energy Commission can best reach the goals espoused throughout the report. Clean Coalition comments leverage our knowledge and experience on ways to level the playing field for distributed generation by fully valuing costs and benefits, while also promoting effective ways to deploy resilience solutions (e.g., Solar Microgrids and Community Microgrids).

1. Environmental Justice and Equity Issues

a. The Energy Commission should focus on valuing externalities

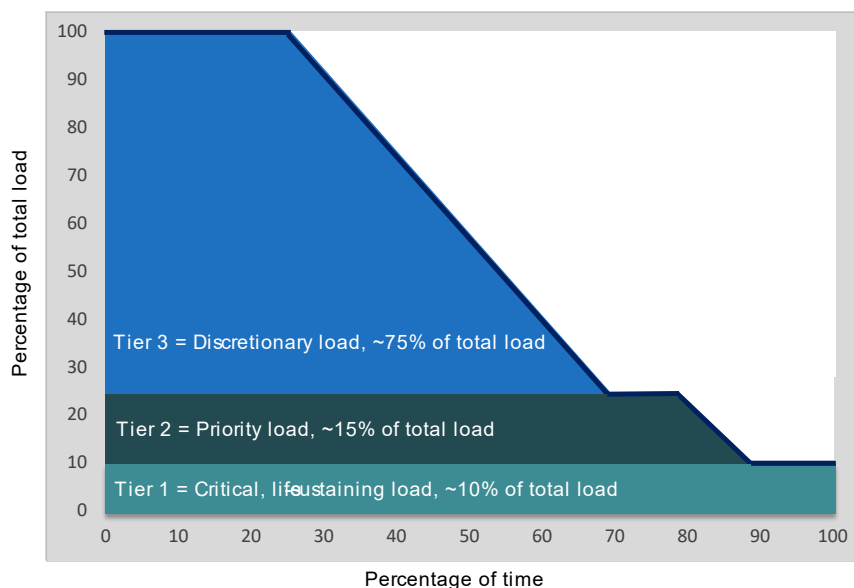
In order to properly address environmental justice and equity issues that exist on the electrical grid today, the state needs to fully capture the value of a number of externalities that are not currently considered in the planning process. Externalities are defined as consequences of commercial/industrial production that are not captured in the cost of the goods and/or services being produced. Over the past two decades, the biggest externality to be included in the cost of electricity production has been the cost of carbon. Even so, there is work to be done; many experts would argue that the current cost of carbon is not nearly high enough and does not fully capture life-cycle costs. Other negative externalities, including the full cost of carbon, the cost of out-of-state methane leakage, and historical costs of pollution still need to be fully realized in order to mitigate existing pollution and prevent further damage from occurring. Parallel to the consideration of negative externalities, the Commission must focus on valuing the full range of benefits (positive externalities) that different distributed energy resources (DER) provide, with regards to both the broader electrical grid and community needs.

i. Creating a standard value of resilience

Past IEPRs have considered the benefits of microgrids as a resilience solution and a way to optimize the value of distributed generation. Since then, the number of behind-the-meter microgrids have increased, but the number of Community Microgrids — which provide the greatest number of benefits to the most people — have not increased at the same rate. Part of the reason for this bottleneck is that resilience, one of the main value offerings of microgrids (and more specifically Community Microgrids), still remains more of a philosophical concept than a bankable revenue stream. Existing regulatory forums, namely the CPUC’s Microgrids proceeding (R. 19-09-009) have not addressed this issue in any depth. As a result, parties interested in deploying microgrids — homeowners, businesses, and municipalities alike — all intuitively understand that resilience is valuable but cannot identify a specific dollar amount worth paying for resilience.

The Clean Coalition has developed a standard methodology for valuing resilience, called the value of resilience 123, or VOR123, which standardizes resilience values for three tiers of loads, regardless of facility type or location. **Tier 1**, usually about 10% of the total load, are mission-critical, life-sustaining loads that warrant 100% resilience. **Tier 2**, or priority loads, are usually about 15% of the total load that should be maintained as long as doing so does not threaten the ability to maintain Tier 1 loads. **Tier 3** are discretionary loads that make up the remaining loads, usually about 75% of the total load. Tier 3 loads are only maintained when doing so does not threaten Tier 1 and 2 resilience.

Typical load tier resilience from a Solar Microgrid



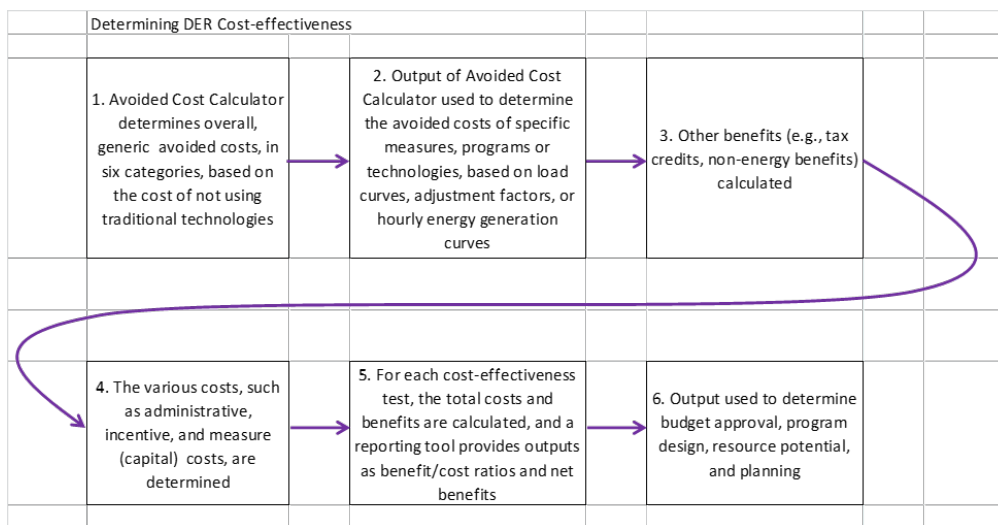
Percentage of time online for Tier 1, 2, and 3 loads for a Solar Microgrid designed for the University of California Santa Barbara (UCSB) with enough solar to achieve net zero and 200 kWh of energy storage per 100 of kW solar.

In the Clean Coalition’s experience, the total premium a facility is willing to pay for renewables-driven backup power to critical loads 100% of the time (and backup for other loads a significant percentage of the time) is 25% on top of the normal rate of energy. We have verified this value using four approaches: a cost-of-service (COS) approach, avoided diesel approach, a market value approach, and the Department of Energy calculator.¹ A 25% adder is a very substantial number, especially when resilience is not considered as a standard value for DER programs or included as an input in the Avoided Cost Calculator.

b. Considering Non-Energy Benefits through a Societal Cost Test

As discussed above with the need for a standard value of resilience, it is essential that both energy and non-energy benefits are fully valued. We appreciate the effort that the Energy Commission has taken thus far by acknowledging the need focusing on non-energy benefits and are encouraged that the DER proceeding might take up the issue. However, we advocate that the Energy Commission should include the need to value non-energy benefits as an environmental justice issue. As long as these issues are not considered, it is less likely that community-centric energy planning will occur and it remains more difficult than it should/could be for widespread DER adoption to occur in historically disadvantaged communities.

For full valuation of non-energy benefits, the Energy Commission should work in concert with the CPUC, as well as push the CPUC to prioritize the creation of a Societal Cost Test. The figure below shows the existing CPUC process for determining cost-effectiveness of customer DER programs.



CPUC Process for Determining DER-program Cost-Effectiveness²

Step three of the flow diagram, valuing the non-energy benefits and considering benefits toward achieving broader policy goals, is rarely ever done thoroughly, and certainly is never calculated in full because the focus is on the existing Total Resource Cost (TRC) test. In theory, the Commission does have a test that encapsulates these values, the Societal Cost Test (SCT), which is described in the 2001 iteration of the Commission’s Standard Practice Manual (SPM). While the test is a variant on the TRC

¹ <https://clean-coalition.org/news/webinar-valuing-resilience-solar-microgrids-thursday-5-nov-2020/>

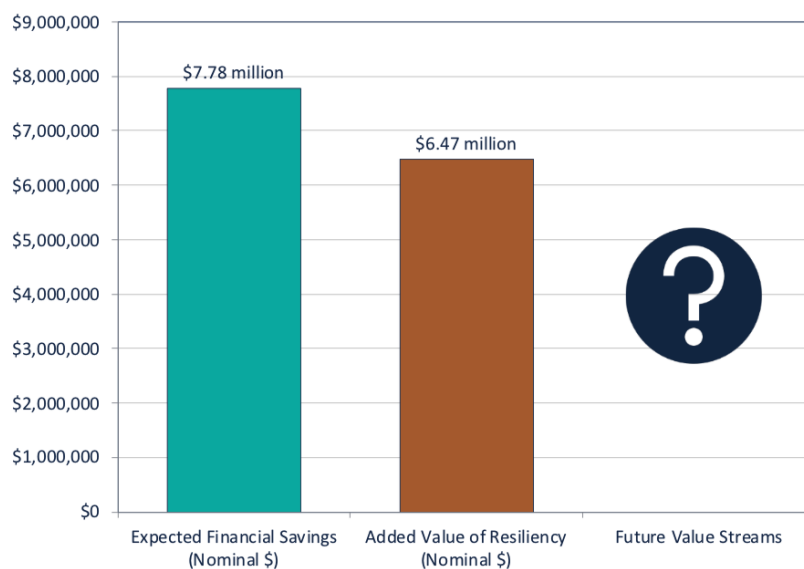
² <https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/demand-side-management/energy-efficiency/idsm>

test, “The Societal Test differs from the TRC test in that it includes the effects of externalities (e.g., environmental, national security), excludes tax credit benefits, and uses a different (societal) discount rate.”³ Whereas the TRC Test only considered value to the ratepayers and utility, the SCT considers a much broader view, including more accurate representations of tax credits as transfer payments. The SPM describes a non-exhaustive list with seven different categories. Twenty-one years after the 2001 iteration of the SPM was released, the Commission has made progress via Energy Division Staff released a White Paper which considers valuing three of these categories.⁴ However, the state needs to make the jump from considering the value of a SCT to actually developing the test. Without a SCT, the CPUC repeatedly rejects values for resilience, location, land use conservation, and out-of-state methane leakage, making it appear as if the value is zero. There is, in fact, real value that comes from each of these potential adders, but the difficulty of capturing the real value to the grid has made it easier for regulators not to capture any of the value.

c. Targeted deployments in historically disadvantaged communities
i. Microgrids at schools

As mentioned in the Clean Coalition’s verbal comments at the August 31 IEPR Workshop in Oxnard, CA, one of the low hanging fruits for DER deployment in disadvantaged communities should be the deployment of solar, solar+storage, or solar+storage microgrids at school districts and government facilities. Because school district revenues come, in part, from the collection of property taxes, lower-income communities are at a disadvantage as compared to wealthier communities. This makes investments in energy projects by the government all the more important.

The Clean Coalition worked to facilitate Solar Microgrids for the Santa Barbara Unified School District (SBUSD), resulting in deployments of solar at fourteen sites and full solar+storage microgrids at six sites. In total over the lifetime of the 28-year power purchase agreements, SBUSD will see guaranteed bill savings of \$7.8 million and an additional \$6.5 million in value-of-resiliency (VOR) for free.⁵



³ CPUC Standard Practice Manual at p. 18

⁴ https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2019-2020-irp-events-and-materials/societal_cost_test_impact_evaluation.pdf

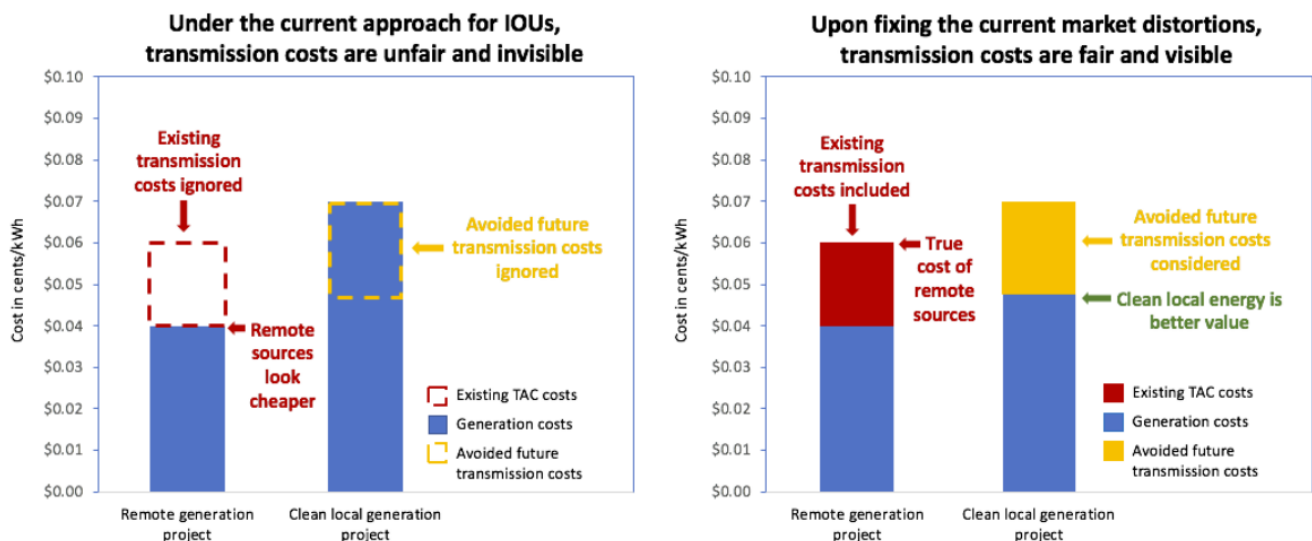
⁵ <https://www.edhat.com/news/santa-barbara-school-board-approves-solar-microgrids>

This same model can be replicated at school districts throughout the state and will help push public facilities toward full electrification. Similarly, the Energy Commission should consider the model being used by Peninsula Clean Energy, to bundle deployments of solar, solar+storage, and Solar Microgrids for all public facilities in a city and allow developers to bid on them altogether, which promotes savings.⁶

2. Emerging Topics

a. The existing market distortion caused by the way historical transmission costs are assessed needs to be fixed in order to create a level playing field for all resources

One of the key questions that should be included in the DER section is: **What needs to be done to level the playing field for DER?** The answer is, fix the market distortion caused by the way Transmission Access Charges (TAC) are assessed. TAC are charged by the IOUs to recover the cost of historical transmission infrastructure, are assessed to IOU customers at the customer meter. As a result, all energy imported by a customer is also assessed 2 cents/kWh TAC. This creates a market distortion because all electrons are charged for use of the transmission system, regardless of whether the energy is exported by a NEM customer and used by another customer on the same distribution feeder or if it is energy that has traveled all the way across the state. The figure below shows how the not considering the cost to transmit remote generation makes it appear cheaper than distributed. However, when TAC is properly assessed, and DER are properly compensated for the value of avoided future transmission, local generation is more cost-effective than remote generation.



Existing transmission costs, assessed as TAC and currently averaging 2¢/kWh, should be added to the cost of remote generation that requires use of the transmission grid to get energy from where it is generated to where it is used, which is almost always on the distribution grid where people live and work. Future transmission investments, currently averaging 2.5¢/kWh in the evenings, can be avoided via dispatchable local generation, and that value should reduce the evaluated cost of local generation. When correctly considering ratepayer impacts of transmission costs, dispatchable local generation provides an average of 4.5¢/kWh of better value to ratepayers than is currently assumed in the majority of instances.

The solution to the TAC market distortion is considering Transmission Energy Downflow (TED) — the way that energy flows down from the transmission system to the T-D system interface and then onto the distribution system. Thus, by properly assessing TAC at the transmission-distribution substation rather than at the customer meter — the true cost of bulk power projects will be revealed. In comparison, DER,

⁶ <https://www.peninsulacleanenergy.com/solicitation/publicfacilitiesrfp/>

which are clean and multi-functional resources, will provide much better value. It is worth noting that this change is not a novel approach that is untried; the municipal utilities currently meter TAC at the T-D substation, demonstrating the viability of the solution.

b. The Energy Commission should consider the value of targeted DER deployments

Ratemaking principles dictate that policies should be technology and location-agnostic, to ensure a level playing field for all participants. However, the general assumptions couched in those principles are predicated on the fact that the current market represents a level playing field. As is evident by the significant needs to disadvantaged and tribal communities as well as the TAC market distortion, this is not the case. California still needs to take great strides in order to achieve a level playing field. Moreover, the state's ambitious climate goals create an urgency that necessitates a paradigm shift when it comes to resource deployment. If the goal is to maximize the value that an investment brings and promote benefit communities and the broader grid, it is time to consider location-specific deployments of DER and/or the use of locational adders. It is worth noting that using a locational adder does not mean that some deployments will receive no money, but it is an acknowledgement that deployments in some areas are more valuable than others. A recent study by Vibrant Clean Energy study found that planning deployments of DER in parallel with utility-scale deployments will maximize ratepayer savings, to the tune of \$120 billion over the next three decades. Therefore, the final IEPR should mention the potential for locational deployments and the conclusions of the Vibrant Clean Energy study should be fully analyzed.

c. Other questions to include about DER

The Energy Commission should include the following questions about DER in the final IEPR:

- What are the roles that DER need to play to facilitate California's transition to a decarbonized society?
- What are the best methods to maximize the value that DER can provide the grid/local communities/other ratepayers?
- What is the most efficient method to cost-effectively procure DER?
- How can DER best be included in the grid planning process?
- What is the role of interconnection and how can reform increase the pace of DER deployment?

The Clean Coalition appreciates the opportunity to submit this response and commends the Energy Commission for the hard work put into the development of the draft IEPR.

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