BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Create a Consistent Regulatory Framework for the Guidance, Planning, and Evaluation of Integrated Demand-Side Resources.	Rulemaking 14-10-003 (Filed October 2, 2014)

COMMENTS OF THE CLEAN COALITION REGARDING PROPOSED DECISION ON 2020 POLICY UPDATES TO THE AVOIDED COST CALCULATOR

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I. INTRODUCTION

Pursuant to Rule 14.3 of the Rules of Practice and Procedure of the California Public Utilities Commission ("Commission") the Clean Coalition submits these opening comments on the Proposed Decision ("PD") regarding *2020 Policy Updates to the Avoided Cost Calculator* issued in the above captioned proceeding on March 13, 2020.

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 address barriers to resiliency, procurement and interconnection of distributed energy resources ("DER")—such as local renewables, advanced inverters, demand response, energy storage and microgrids—and help establish market mechanisms that realize the full potential of integrating these solutions. The Clean Coalition also collaborates with utilities and municipalities to create near-term deployment opportunities that prove the technical and financial viability of local renewables and other DER.

II. SUMMARY

We ask that the PD be clarified to find:

1. That the Staff Proposal's valuation of zero for "unspecified" avoided future transmission costs for SCE and SDG&E is not supported by the record;
2. Order that Energy Division the adopt a non-zero best estimate interim value, and;

3. That ACC shall establish a value accounting for the contribution of DER and associated operational profiles in reducing future transmission needs associated with each utility, to be completed in time for the next major update of the ACC.

III. COMMENTS

The Clean Coalition appreciates the opportunity to submit these comments on the Proposed Decision. We support the Commission's continued and evolving efforts in this proceeding to assess the impacts of DER and locational factors such that the benefits may be realized for ratepayers at large, individual customers, and communities.

The Clean Coalition broadly supports the updates to the Avoided Cost Calculator ("ACC") put forth in the staff report recommendations and as made by parties in its development and comment, and reflected in the Proposed Decision ("PD"). Very good work has been done and important refinements developed and vetted. However, we are deeply concerned about one important factor -- a failure to adequately address the valuation of avoided transmission costs. Capturing the actual value of transmission costs that can be avoided through the use of distributed energy resources ("DER") is a critical component evaluating of the cost-effectiveness of any DER program or project. We therefore focus these comments primarily on the transmission component of the avoided cost calculator update.

a. THE NEED FOR AVOIDED TRANSMISSION VALUE IN THE ACC, AND REQUEST FOR CLARIFICATION REGARDING DIRECTION TO ENERGY DIVISION

Today the cost of transmission services required to deliver energy that is not produced locally by DER is already over $20/MWh and increasing, as reflected in current Transmission Access Charges in California; the levelized cost in current dollars for delivery over just the next 20 years is projected to be $30/MWh. These costs approach or increasingly even exceed the cost of the energy itself, and are largely or even entirely avoidable in many cases. As such this should be recognized as a very substantial component of potentially avoidable costs in the ACC, and evaluated based on the operational profile and characteristics of the DER being evaluated.

While no model is perfect, the approach currently employed in the ACC completely fails to capture this value for SCE and SDG&E and may grossly undervalue the avoided future ratepayer costs for transmission provided by DER for PG&E. As detailed in our comments below, both the Clean Coalition and other parties have repeatedly illustrated examples of billions of dollars in transmission savings already realized from existing DER deployment in California, and the value of future deployment. Further deferring any updates in the ACC to reflect such objectively evident value is simply wrong. Failure to correct this now will result in flawed planning and program development for years, potentially saddling ratepayers with billions of dollars of misdirected investment liabilities, and sub-optimal outcomes in both grid resilience and environmental impacts.

The PD as currently drafted directs Energy Division staff "to continue to use the current method to determine unspecified avoided transmission value in the Avoided Cost Calculator."[1] Because no method or valuation is currently applied in the ACC when calculating this factor for SCE or SDG&E, it is unclear whether the PD as directing Energy Division to apply the method and/or value used when calculating this factor for PG&E to all three utilities, or to continue the practice of not calculating any valuation for SCE and SDG&E. **We request clarification in the final text.** We believe that failure to adopt a consistent method or assign any value for two of the three utilities is indefensible.

The Clean Coalition does not believe that the method currently used for PG&E adequately captures the full value of avoided transmission costs; however, we would support consistent application of this method or established valuation across all three utilities as *an interim* measure while further refinements are developed if the Commission determines that this would be more accurate than either of the methods jointly proposed by the Solar Energy Industry Association and Vote Solar ("SEIA&VS") in their Brief.[2] For a long term transmission value Staff proposes to use GRC transmission costs, as has been done in prior ACCs. This approach, similar to distribution value, would use annual $/kW yr values developed from GRC (or other sources such as recommended by SEIA&VS), which is then allocated to individual hours using

[1] Proposed Decision of ALJ Hymes regarding 2020 Policy Updates to the Avoided Cost Calculator (3/13/2020) at 58

[2] Opening Brief and Opening Comments of the Solar Energy Industries Association and Vote Solar On 2020 Changes To The Avoided Cost Calculator, December 17, 2019.

the PCAF method to reflect the characteristics of each DER. The Clean Coalition Clean Coalition supports these approaches as the best offered to date, and has done so in the related Distribution Resources Planning proceeding R.14-08-013.[3]

While we support refining transmission values within the Distribution Resources Plans ("DRP") proceeding (R.14-08-013), the Clean Coalition has worked with Energy Division staff and Parties for years on this topic and there is as yet no established plan or schedule for doing so. Decision 20-03-005 in the DRP proceeding did instead recently determine that the issue may continue to considered in the Avoided Cost Calculator updates in this proceeding.[4] As such, the ACC should adopt a reasonable best estimated value now, and continue to update that value reflecting refinements whenever they are available from any venue, incorporating both short-term avoided costs and long-term ("unspecified") avoided costs to reflect the fundamental reality that when any grid needs are met locally by DER, then no additional transmission capacity would be required for each of these purposes.

I'm going to risk allusion the current COVID-19 viral pandemic just to ensure attention is riveted to the following essential point: DER can completely avoid transmission of electricity between communities and the risks, losses, and costs associated with that transmission. 100%. Of course transmission of electricity is not bad, but whether or not DER is the more cost effective option for meeting customer needs is precisely the purpose of the Avoided Cost Calculator, and for the ACC to serve this purpose it must reflect avoidable costs associated with future transmission that would otherwise occur.

A microgrid exemplifies this DER capability perfectly -- on a small scale, using only local distributed resources, it does the same thing that the transmission grid and large remote generating facilities do on a larger scale. The difference is only a matter of scale, not of functionality. Historically, the electric system was developed starting with isolated local grid systems, and these have been expanded and interwoven when the benefits of scale and shared resources warranted the cost of transmission systems required to interconnect them. As

[3] The PD notes that no party supported the SEIA/VS proposed methodologies. For reasons that have not been determined, the Brief filed by Solar Energy Industries Association in this proceeding on 12/17/2019 was never received by the Clean Coalition despite inclusion in the COS filed in the docket. As there is a substantial delay in filings appearing on the docket webpages, we errored in relying upon email service and therefore failed to offer a supportive response at that time.
[4] Decision 20-03-005 at 13.

technologies have evolved from large coal fired steam generating facilities to now include highly scalable microgeneration and storage even at the individual customer level, and the ability to communicate through DER management systems at all scales, the calculus for grid optimization and cost effectiveness has fundamentally changed. The ACC is supposed to capture this.

We can clearly see in the examples of nanogrids, microgrids, and municipal utilities, that DER is obviously an alternative to transmission and remote generation. In those circumstances where local resources do not currently meet 100% of the need and therefore "transmission cannot be avoided", the clear question is whether it would be a better economic investment to meet the remaining need through additional DER or the additional transmission investment needed to meet any marginal remaining need. It is clearly beneficial to the shareholders of companies building and owning transmission infrastructure to drive public investment and reliance toward transmission. Each of the investor owned utilities are major transmission owners, and have emphasized the need for transmission investment while obfuscating the ability of DER as an alternative. Meanwhile, following disastrous wildfires, Public Safety Power Shutoffs, major utility bankruptcy, and legislation ordering the Commission to address microgrids and wildfire mitigation, attention is being given to DER alternatives. This will rely heavily upon ACC tools and methods to help determine the least cost and best fit path forward. As a not-for-profit environmental ratepayer advocate, the Clean Coalition seeks to ensure that all costs and capabilities are accounted for with the greatest accuracy practical. Where values are uncertain, the ACC should adopt the best estimate of the value and account for the uncertainty. Failure to adopt this value is a failure of responsibility to ratepayers.

Local distributed energy resources can contribute to meeting all types of needs at both the local and system level, and local needs can be met either through local resources, or through added transmission infrastructure to deliver non-local energy supplies, the only question is which portfolio serves ratepayer's requirements at the lowest total cost. These considerations are even more important as the state grapples with critical concerns over local grid resilience and continuity of service in emergency conditions, and is investing heavily in addressing these at the distribution level. To the degree that the need for added transmission infrastructure is reduced when TPP modeling employs forecasts with higher specific DER profile scenarios, these avoided costs must be attributed to those DER and factored into associated planning and programs. To continue to assign a value of zero is simply and categorically wrong, and it is wrong on the order

of billions of dollars. Moreover, it is blatantly inconsistent to have adopted a system wide avoided transmission value for PG&E and not adopt a value for SCE and SDG&E -- there are understandable reasons for why this discrepancy has occurred in the history of the development of the ACC, but it is far less defensible for it to continue.

The ACC considers major updates only every other year, and if not addressed now, ratepayers will have to wait another two years before a major change in method for accounting for these avoided costs will be available for use across the gamut of proceedings that rely upon the ACC to determine the most cost effective programs, procurement and investments, and to meet carbon neutrality goals,[5] including Integrated Resource Planning, Transmission Planning, Wildfire Mitigation, Net Energy Metering, Transportation electrification, Zero Net Energy buildings, and both utility and CCA procurements for Energy Storage and Resource Adequacy. Further delay six years from the start of this proceeding seems unreasonable and is not warranted.

b. VALUATION OF UNSPECIFIED TRANSMISSION DEFERRAL

The Clean Coalition offers the following data and arguments in support of our request for modification or clarification of the PD.

We know that generic load growth, aging transmission infrastructure, and access to specific resources will require commensurate grid investment, but it is challenging to specify the exact future need and location until the grid need is identified in the annual Grid Needs Assessment or Transmission Planning Process. Likewise, we know that DER can reduce the impact of associated grid investment costs. These unspecified needs are neither unknown nor unanticipated, rather they are fully anticipated, but may not be locationally specified or scaled with accuracy. The Staff Proposal states that "Unspecified deferral value seeks to calculate what the Distribution Deferral avoided costs would have been under the counterfactual load forecasts", including the "No New DER" case.[6] "Unspecified" refers to anticipated and quantifiable general

[5] Executive Order BN-55-18 (2018) established a statewide goal to achieve economy-wide carbon neutrality by 2045

[6] Administrative Law Judge's Ruling Confirming Use of Recommendations from Rulemaking 14-08-013 and Introducing Staff Proposal for Major Updates To Avoided Cost Calculator, November 11, 2019, at

needs and avoidable costs. In contrast, "unanticipated" refers to the risk of needs arising outside of forecast scenarios, and the value of hedging against this risk based on its scale and probability of occurrence. These are separate and distinct values. The forecast need for future transmission investment - beyond just those specific projects currently on the books - is entirely quantifiable, and this constitutes the unspecified but anticipated need and cost. Each DER profile will have a quantifiable contribution toward reducing these future needs, and avoiding their costs.

While precise estimation of future grid needs and the value of avoiding these as-yet-unrealized needs is inherently based on incomplete information it should not be considered speculative in a pejorative sense – the goal is to improve the accuracy of estimated value based on the available information, accounting for uncertainty.

It is most reasonable to assume as a foundation that new additional grid needs will occur consistent with historical experience and forecasts, and that DER will be able to mitigate the probable future grid needs to a degree at least equal to their ability to meet existing needs. This is consistent with the SEIA&VS proposal to utilize historical regression analysis. Projected divergence from historical trends should then be incorporated to adjust the forecast, but these are refinements to an established foundation.

DER have a proven record of eliminating the need for new transmission infrastructure investment, as we have repeatedly noted and CAISO has recognized. Growth in DER led to the cancellation of $2.6 billion in unneeded transmission projects in 2017-18 alone, due to changes in local area load forecasts strongly influenced by DER in the form of energy efficiency programs and increasing levels of residential, rooftop solar generation.[7] Note that DER had already been factored into load analysis in the transmission planning process, and the change in updated forecasts reflect only the greater growth in DER impact than had already been accounted for. Ratepayers saved not just the $2.6 billion in initial capital costs but also roughly $12 billion in future return on equity payments, operations and maintenance costs by the transmission

Attachment A: Energy Division Staff Proposal for 2020 Avoided Cost Calculator Update section 5.1.2 & 5.2 - Distribution Deferral Background, at 34-35

[7] CAISO 2017-18 Transmission Planning Process, www.caiso.com/Documents/BoardApproved-2017-2018_Transmission_Plan.pdf

owners. If the ACC is not reflecting these actual savings, then the methodology will improperly bias decision making to the detriment of ratepayers.

DER can mitigate all drivers of transmission investment. Where growth in peak demand is met locally by DER, then no additional transmission capacity will be required for this purpose. Likewise if RPS and other policy drivers are met through DER then no new policy driven transmission investment would be required. The same holds true for reliability investments, as is clear from the example of microgrid operation described earlier -- reliability is only supported by transmission when energy is delivered via transmission. To say that transmission is necessary for reliability for energy delivered by transmission is a self-fulfilling tautology. Transmission is useful, it is not irreplaceable. Economic investments should be determined by the total resource cost, including the contribution to transmission infrastructure capacity and losses incurred in delivering energy. Where energy can be delivered to load without transmission, those costs are "avoided". Other costs may be incurred as an alternative, and the ACC is central in determining which option offers the lowest net total cost to ratepayers.

Additionally the cost of owning, operating, and maintaining transmission greatly exceeds the initial capital investment and must be fully accounted for when comparing alternatives. Lifetime costs, including return on equity, burden the ratepayer with roughly five fold the capital costs reflected in many transmission planning and non-wires alternative assessments, and we strongly support the work to incorporate these costs in the ACC.

Lastly, it is important to recognize that existing transmission capacity is a constrained resource, and where DER frees up capacity or avoids use that would otherwise occur, that capacity can used for transmission services that would otherwise have required new investment transmission capacity - and that new investment is avoided. The ACC must account for these avoided costs.

It is important not to confuse certainty and granularity - unspecified deferral is less locationally granular, but not less certain. Certainty of unspecified deferral increases as granularity decreases. It is easier to use DER growth to avoid future transmission needs than distribution needs. For example, the NP15 transmission area may have a high certainty of increasing capacity need, and this could in turn be met with high probability by DER throughout that region in line with its Peak Capacity Factor. Conversely, the Distribution Investment

Deferral Framework developed in DRP may specify a specific need at a specific location, but with lower certainty of the need forecast or of the ability to procure DER to defer it (we acknowledge however that installed DER offer great opportunity to employ changes in operational profiles to quickly meet evolving distribution needs through tariff driven or dynamic inverter or load modification).

As noted both in prior uncontested testimony[8] and in our reply comments on the staff proposal,[9] deploying DER that displace transmission-sourced energy mitigates the need for transmission for future infrastructure investment.

For example, a May 2012 study by Southern California Edison found that transmission upgrade costs for their share of the Governor's goal of 12,000 MW of distributed generation could be reduced by over $2 billion from the trajectory scenario. As illustrated in Figure 1 the lower costs were associated with the "guided case" where 70 percent of projects would be located in urban areas, and the higher costs were associated with the "unguided case" where 70 percent of projects would be located in rural areas.[10]

[8] Uncontested Testimony of Kenneth Sahm White: *CLEAN COALITION REBUTTAL TESTIMONY REGARDING PACIFIC GAS AND ELECTRIC COMPANY'S AND SAN DIEGO GAS AND ELECTRIC COMPANY'S APPLICATIONS TO ESTABLISH GREEN TARIFF SHARED RENEWABLES PROGRAMS* January 10, 2014; CPUC Proceeding A.12-01-008 and A.12-04-020, at 2.

[9] *REPLY COMMENTS OF THE CLEAN COALITION ON MAJOR UPDATES TO THE AVOIDED COST CALCULATOR,* December 30, 2019, at 7-11.

[10] The Impact of Localized Energy Resources on Southern California Edison's Transmission and Distribution System, SCE, May 2012.

Figure 1: Locational Integration Cost Factors for Distributed Generation

Locational Cost Impacts

Clean Coalition

SCE Share of 12,000 MW Goal

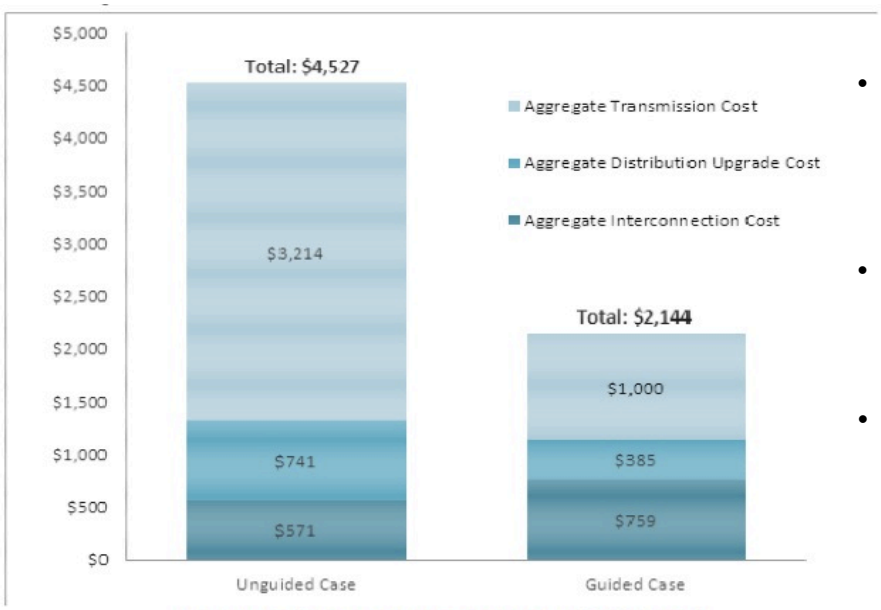


Figure 8: Total SCE System Costs of LER Proposal (Million USD)

- Locational Value methodology should include transmission costs
- Avoids reliability, economic and policy driven projects
- Interconnection and compensation policies should incent high value locations

Guided Siting Saves Ratepayers 50%

Source: SCE Report May 2012

Making Clean Local Energy Accessible Now 3

In this instance we clearly see that there would be major transmission and distribution infrastructure cost savings if forecast DER growth occurred where there was greater capacity to accommodate that growth. However, since specific infrastructure projects for either scenario had not yet been planned, and a methodology that only considered planned projects would fail to reflect the very cost differential predicted by the utility planners.

Failing to account for unspecified projects that have not yet been planned, or the value of DER mitigations relative to the ratepayer costs that would otherwise occur in the absence of these mitigations, provides a false and unrealistically low projection of future costs and savings. The staff's proposed methodology and examples, while recognizing the potential to avoid unspecified future needs, appears to conclude that the avoided transmission value is negligible, in contrast to the examples offered here and previously by parties.

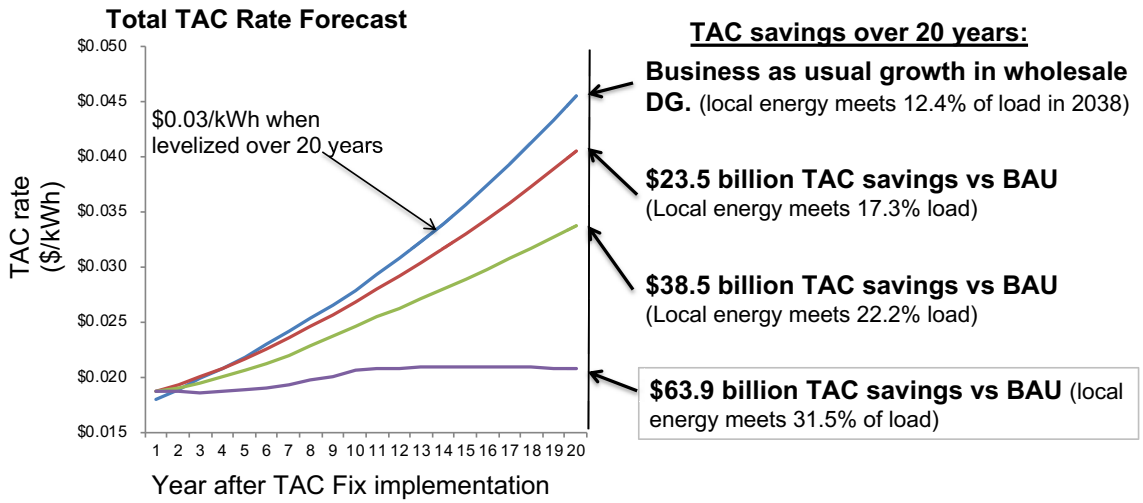
As demonstrated in the attached *Figure 2: Projected Total PG&E Transmission Access Charges: Accounting for Investments Not-yet-planned, Relative to DER Growth Scenarios,*[11] if we forecast the continued addition of new transmission projects beyond the current planning period, even utilizing CAISO's lower projected average future estimate of 7% nominal escalation (5% real) over the next 20 years, the transmission charges, and associated ratepayer costs, do not actually level off, but continue to climb. Increased deployment of DER mitigations would result in major savings that must be recognized.

Figure 2: Projected Total PG&E Transmission Access Charges: Accounting for Investments Not-yet-planned, Relative to DER Growth Scenario

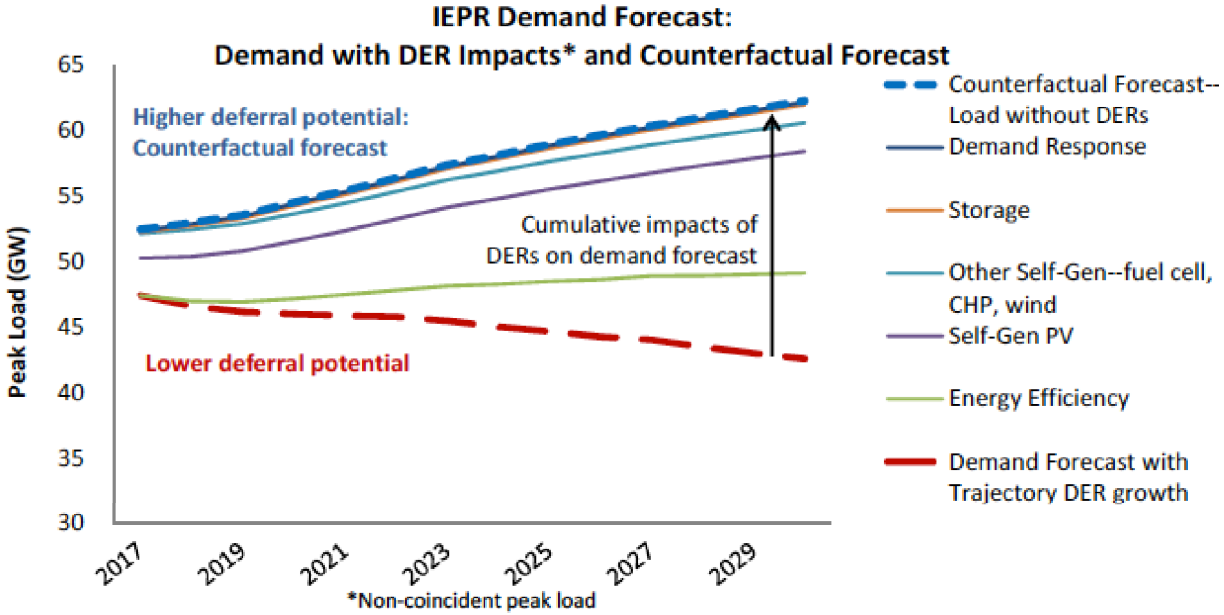
Cumulative Total TAC payments to CAISO ($ in billions)	Year 1	Year 20	Change	Change	Notes
Business As Usual (BAU)	$3.3	$135.8	$-	-	
Post-TAC fix Scenario 0: BAU with new billing determinant	$3.3	$128.4	$(7.5)	-6%	Change versus BAU
Post-TAC fix Scenario 1: Total DG added per year 1.5x of BAU	$3.3	$112.4	$(23.5)	-17%	Change versus BAU
Post-TAC fix Scenario 2: Total DG added per year 2x of BAU	$3.3	$97.4	$(38.5)	-28%	Change versus BAU
Post-TAC fix Scenario 3: Total DG added per year 3x of BAU	$3.3	$71.9	$(63.9)	-47%	Change versus BAU

CAISO peak load after additional WDG versus baseline (MW)	2016	2017	2018	2019	2020
Post-TAC fix Scenario 0: BAU with new billing determinant	49,243	49,392	49,542	49,692	49,843
Business As Usual (BAU)	49,243	49,392	49,542	49,692	49,843
Post-TAC fix Scenario 1: Total DG added per year 1.5x of BAU	49,243	49,200	49,185	49,187	49,191
Post-TAC fix Scenario 2: Total DG added per year 2x of BAU	49,243	49,008	48,827	48,682	48,539
Post-TAC fix Scenario 3: Total DG added per year 3x of BAU	49,243	48,823	48,334	47,891	47,450

[11] Clean Coalition Transmission Access Charge Impact Model, available at: http://www.caiso.com/informed/Pages/StakeholderProcesses/ReviewTransmissionAccessChargeStructure.aspx



While these values are only indicative and subject to variation based on input assumptions, they align with the IEPR Demand Forecast clearly indicates that DER are projected to have a very significant effect on peak load over the next decade, as shown in slide 9 of the Energy Division at the Dec 20, 2018 workshop. Energy Efficiency and distribution level PV in particular contribute to mitigating peak load growth that would otherwise occur, and the associated transmission and generation costs.



Forecast simplified for illustrative purposes. Actual counterfactual forecast must be adjusted for Codes and Standards and peak shift, and impact of EVs is included in forecast but not shown on this chart

We ask that the PD be clarified to find:

1. That the Staff Proposal's valuation of zero for "unspecified" avoided future transmission costs for SCE and SDG&E is not supported by the record;

2. Order that Energy Division the adopt a non-zero best estimate interim value, and;

3. That ACC shall establish a value accounting for the contribution of DER and associated operational profiles in reducing future transmission needs associated with each utility, to be completed in time for the next major update of the ACC.

This will reconcile the present inconsistency and support cost effective planning, procurement, and program development, including the wide range of important use cases identified in the D.20-03-005.[12]

IV. CONCLUSION

The Clean Coalition appreciates the opportunity to submit these comments in response to the Proposed Decision. We have challenged the conclusion of the White Paper and Staff Proposal regarding the negligible value of DER in avoiding unspecified future transmission infrastructure investment, yet our concerns have not been addressed. We support the Commission's continued and evolving efforts in this proceeding to assess the impacts of DER and locational factors such that the benefits may be realized for ratepayers at large, individual customers, and communities. We request modification of the Proposed Decision as described in support of this goal.

Respectfully submitted,

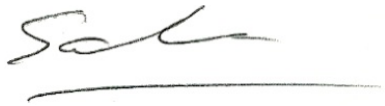
Kenneth Sahm White
Director, Economic & Policy Analysis
Clean Coalition
Dated: February 26, 2020

[12] Table 1. Use Cases for Estimated Transmission & Distribution Deferral Value, including Integrated Resource Planning, Transmission Planning Process, NEM Tariffs, Distribution Investment Deferral Framework prioritization of candidate deferrals, Energy storage RFOs, Demand Response & Energy Efficiency program portfolios and budgets.

VERIFICATION

I, Kenneth Sahm White am the representative for the Clean Coalition for this proceeding. I am authorized to make this verification on the organization's behalf. The statements in the foregoing document are true of my own knowledge, except for those matters that are stated on information and belief, and as to those matters, I believe them to be true.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on April 2, 2020, at Santa Cruz, California



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