

Stakeholder Comments Template

Review Transmission Access Charge Wholesale Billing Determinant

June 2, 2016 Issue Paper

Submitted by	Company	Date Submitted
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The ISO provides this template for submission of stakeholder comments on the June 2, 2016 issue paper. The issue paper, presentations and other information related to this initiative may be found at:

<http://www.caiso.com/informed/Pages/StakeholderProcesses/ReviewTransmissionAccessChargeWholesaleBillingDeterminant.aspx>

Upon completion of this template please submit it to initiativecomments@caiso.com. Submissions are requested by close of business on **June 30, 2016**.

Issue Paper

Currently the ISO assesses transmission access charge (TAC) to each MWh of internal load and exports. Internal load is measured as the sum of end-use metered customer load (EUML) in the service area of each participating transmission owner (PTO) in the ISO balancing authority area. Clean Coalition proposes that the ISO change how it measures internal load for TAC purposes, to measure it based on the hourly energy flow from the transmission system to the distribution system across each transmission-distribution substation; a quantity called “transmission energy downflow” (TED). The main difference between using TED or EUML as billing determinant is that TED excludes load that is offset by distributed generation (DG). Please see the ISO’s June 2 straw proposal for additional details.

The ISO does not yet have a position on the Clean Coalition proposal, and has posted the June 2 issue paper in order to stimulate substantive stakeholder discussion and comments on this topic.

1. At this point in the initiative, do you tend to favor or oppose Clean Coalition's proposal? Please provide the reasons for your position.

SDG&E Response:

SDG&E opposes the Clean Coalition proposal in that it fails to account for all "uses" of the transmission system. The fundamental problem with the Clean Coalition proposal is that it does not recognize that "uses" of the transmission system include more than just the transfer of real-power across the transmission-distribution interface.

2. Clean Coalition states that TED is better aligned with the "usage pays" principle than EUML is, because load offset by DG does not use the transmission system. Do you agree? Please explain your reasoning.

SDG&E Response:

SDG&E does not believe that the current evidence is sufficient to reach a conclusion that Clean Energy's proposed "transmission energy downflow" (TED) measure is "better aligned with the 'usage pays' principle" than the current end-use metered customer load (EUML) measure.

However, the Clean Coalition proposal does highlight a weakness in the current approach for designing rates that recover transmission costs. The current approach implicitly assumes that an end-use customer's "use" of the transmission system is fully captured in the amount of energy that flows across the end-use customer's retail meter. While the real-power flowing across an end-use customer's meter for a designated billing interval has historically been accepted as a reasonable measure of an end-use customer's "use" of the transmission system, technology developments on the customer side of the retail load meter are challenging the reasonableness of this measure.

An end-use customer that installs enough behind-the-load meter generation to offset its end-use electrical consumption during a designated billing interval will, under existing retail transmission rate structures, pay \$0 for its "use" of the transmission system. SDG&E does not believe this is reasonable because the end-use customer is nevertheless deriving benefits from the transmission system. These benefits include: (i) the ability to dispatch transmission-connected generators to manage real-time imbalances and maintain frequency within prescribed tolerances, (ii) the provision of reactive power support from the transmission system as necessary to maintain an acceptable voltage profile at the transmission-distribution system interface to the extent the distribution system is not independently able to maintain such a profile, and (iii) the ability to dispatch transmission-connected generators as necessary to restore electrical service following an outage on the distribution system.

Measuring the extent to which an end-use customer "uses" each of the above transmission services is challenging. In theory, an end-use customer's real-time imbalance could be calculated but there is no direct correlation between any customer's real-time imbalance and the real-time imbalance that transmission-connected generators

are dispatched to manage (imbalances are managed at the aggregate grid-wide level). In theory, the flow of reactive power across an end-use retail load meter could be measured but the relationship between this flow and the maintenance of an acceptable voltage profile at the transmission-distribution system interface is tenuous at best. An end-use customer's reliance on the restorative capabilities of the transmission system is even harder to measure; it is an inherent capability.

Given these measurement limitations, SDG&E believes the most practical way to redesign existing transmission rate structures to capture end-use customers' various "uses" of the transmission system is to: (i) add a demand based charge (\$/kW), and (ii) reduce the energy-based charge (\$/kWh).

3. Clean Coalition states that using TED will be more consistent with the "least cost best fit" principle for supply procurement decisions, because eliminating the TAC for load served by DG will more accurately reflect the relative value of DG compared to transmission-connected generation. Do you agree? Please explain your reasoning.

SDG&E Response:

SDG&E is unclear how TED would be applied in "least cost best fit" (LCBF) resource procurement decisions. In principle SDG&E agrees that supply offers from generators located on the distribution system could avoid transmission costs and, all things being equal, be preferred to supply offers that do not avoid such costs. A key issue, however, is whether there are transmission upgrades that can, in-fact, be deferred or avoided. There are several CPUC proceedings currently considering how to account for avoided transmission costs in the evaluation of distribution-level resource options.

4. Clean Coalition states that changing the TAC billing determinant to use TED rather than EURL will stimulate greater adoption of DG, which will in turn reduce the need for new transmission capacity and thereby reduce TAC rates or at least minimize any increases in future TAC rates. Do you agree? Please explain your reasoning.

SDG&E Response:

SDG&E agrees that using real-power flows across the transmission-distribution system interface as the billing determinant for Transmission Access Charges (TAC) will have the effect of creating an incentive for end-use customers to add more Distribution Generation (DG), both behind the end-use customer's retail load meter and directly-connected to the distribution system.

As noted in SDG&E's responses to the previous questions, changes in existing retail rate structures are needed to ensure that all end-use customers pay for their various "uses" of

the transmission system – which are definitely not limited to the amount of real power that flows across a customer’s end-use retail meter during a designated billing period. (See SDG&E’s response to question 2.)

Whether an increase in DG will reduce the need for new transmission capacity depends on whether there are transmission upgrades that are, in fact, avoidable. To the extent transmission upgrades are avoidable, there would be a corresponding reduction in transmission costs that would be recovered through the TAC.

5. In the issue paper and in the stakeholder conference call, the ISO pointed out that the need for new transmission capacity is often driven by peak load MW rather than the total MWh volume of load. This would suggest that load offset by DG should get relief from TAC based on how much the DG production reduces peak load, rather than based on the total volume of DG production. Please comment on this consideration.

SDG&E Response:

SDG&E agrees with the CAISO that many transmission upgrades provide mitigation for reliability issues that arise during peak load conditions. However, this is not always the case. For example, transmission-level voltage control devices such as shunt capacitors, shunt reactors and synchronous condensers are needed during many time periods and system conditions to maintain acceptable voltages.

Additionally, while peak load conditions may be the trigger for many new transmission facilities, the benefits of adding these transmission facilities are not limited to mitigating the identified reliability issue. In fact, most transmission facilities are in-service all hours of the year and, collectively, support reliable grid power flows during all hours.

Accordingly, as suggested in SDG&E’s response to question 2, SDG&E believes there is a basis for redesigning retail transmission rates such that all end-use consumers would pay for their “use” of the transmission using a combination of a demand charge (\$/kW) and a reduced energy charge (\$/kWh).

6. Related to the previous question, do you think the ISO should consider revising the TAC billing determinant to utilize a peak load measure in addition to or instead of a purely volumetric measure? Please explain your reasoning.

SDG&E’s Response:

As suggested by SDG&E’s responses to questions 2 and 5, SDG&E believes the CAISO should consider revising the TAC rate structure to include (i) a demand charge (\$/MW), and (ii) a reduced energy charge (\$/MWh).¹

¹ SDG&E’s proposed revision to the existing TAC rate structure assumes no change in FERC’s current policy for the CAISO Balancing Authority wherein transmission costs are paid only by end-use customers, not generators. An

The CAISO's current TAC mechanism allocates the costs of transmission to Utility Distribution Companies (UDCs), and to non-Investor Owned Utility (IOU) Load Serving Entities (LSEs) electing to perform its own retail billing. For each UDC and self-billing non-IOU LSE, the allocation is based on the aggregate amount of real-power flowing across the retail meters of the end-use customers served by those entities.

Under the current TAC mechanism, it is theoretically possible that a self-billing non-IOU LSE's end-use customers could install enough behind-the-load meter generation to reduce the aggregate amount of real-power flowing across the retail meters to zero MWh. In this case, the self-billing non-IOU LSE would pay \$0 for transmission even though, as indicated in SDG&E's response to question 2, the end-use customers of the self-billing non-IOU LSE would still be "using" the transmission system.²

Revising the TAC rate structure such that every UDC and every self-billing non-IOU LSE pays (i) a demand charge (\$/MW), and (ii) a reduced energy charge (\$/MWh), ensures that every UDC and every self-billing non-IOU LSE will pay something for their "use" of the transmission system.

The demand charge recognizes that UDCs or self-billing non-IOU LSEs with large amounts of behind-the-load meter solar photovoltaic generation likely impose instantaneous demands on the transmission system, especially at night when there is no solar PV generation. Even if the amount of solar PV generation exactly offsets aggregate on-site loads over the billing period, there would still be a non-zero demand charge based on the UDC's or self-billing non-IOU LSE's maximum instantaneous metered real-power flow during the billing period.

The lower volumetric charge recognizes that UDCs or self-billing non-IOU LSEs with large amounts of behind-the-load meter solar photovoltaic generation, rely on transmission system power flows (MWh) to a lesser degree than other UDCs or self-billing non-IOU LSEs. If the amount of such generation exactly offset aggregate on-site loads over the billing period, the volumetric portion of the TAC bill would be \$0.

7. Do you think adopting the TED billing determinant will cause a shift of transmission costs between different groups of ratepayers? If so, which groups will pay less and which will pay more? Please explain your reasoning, and provide a numerical example if possible.

SDG&E Response:

Clean Coalition's TED billing determinant will result in inappropriate cost shifts between different groups of ratepayers because it fails to account for all "uses" of the

alternative approach could involve a sharing of transmission costs between end-use consumers and consumers, say 50%/50%, since both end-use customers and generators benefit from access to the transmission system.

² *SDG&E recognizes that it is highly improbable that any UDC or self-billing non-IOU would achieve aggregate metered end-use consumption of exactly 0 MWh across a billing period. SDG&E is using this example to illustrate the point that metered real-power flows do not account for all "uses" of the transmission system.*

transmission system. The TED billing determinant only accounts for transmission “use” that is measured through the flow of real-power across the transmission-distribution system interface. It ignores other “uses” of the transmission system such as those described in SDG&E’s response to question 2. A UDC or self-billing non-IOU LSE whose end-use customers install large amounts of behind-the-load meter generation will reduce the number of MWh against which transmission costs are allocated and thereby pay proportionally less transmission costs without accounting for their other “uses” of the transmission system. In effect the costs of these other “uses” are shifted to the UDCs or self-billing non-IOU LSEs whose customers install proportionally less behind-the-load meter generation.

In addition, Clean Coalition’s TED billing determinant would have the effect of exacerbating the above cost shift where the UDC’s or self-billing non-IOU LSE’s end-use customers are located on distribution circuits to which there are proportionally larger amounts of distribution-connected generation (i.g., generators selling at wholesale). Clean Coalition’s TED billing determinant is determined by flows across the transmission-distribution interface so any distribution-connected generation (whether behind-the-load meter or directly connected) acts to reduce this flow.

8. Do you think a third alternative should be considered, instead of either retaining the status quo or adopting the TED billing determinant? If so, please explain your preferred option and why it would be preferable.

SDG&E Response:

SDG&E believes it is time to consider alternatives other than the Clean Coalition’s TED billing determinant proposal. See SDG&E’s response to question 6.

9. Do you think that ISO adoption of TED by itself will be sufficient to accomplish the Clean Coalition’s stated objectives (e.g., incentives to develop more DG)? Or will some corresponding action by the CPUC also be required? Please explain.

SDG&E Response:

If the only objective was to “develop more DG,” then the adoption of Clean Coalition’s TED billing determinant proposal would likely accomplish the objective. Development of more DG, of course, is not a stand-alone objective. Costs and cost allocation need to be considered and on these points the Clean Coalition’s proposal fails.

10. What objectives should be prioritized in considering possible changes to the TAC billing determinant?

SDG&E Comment:

When considering possible changes to the TAC billing determinant, the most important objective should be to improve the alignment between (i) the amount of transmission costs paid by UDCs and self-billing non-IOU LSEs, and (ii) the “use” of the transmission system by those entities’ end-use customers. However, any changes need to consider the incremental costs that would be incurred to implement the changes. These incremental costs could include the cost of new software necessary to collect and process interval meter data as well as the cost of new software necessary for billing purposes.

11. What principles should be applied in evaluating possible changes to the TAC billing determinant?

SDG&E Comment:

See SDG&E’s response to question 10.

12. Please add any additional comments you’d like to offer on this initiative.

SDG&E Response:

An interesting question is whether an end-use customer that produces more behind-the-load meter generation than it has end-use loads during a billing period, should be charged for transmission based on the metered exports from the customer’s location. To the extent an end-use customer has exports, it has characteristics of a generator.