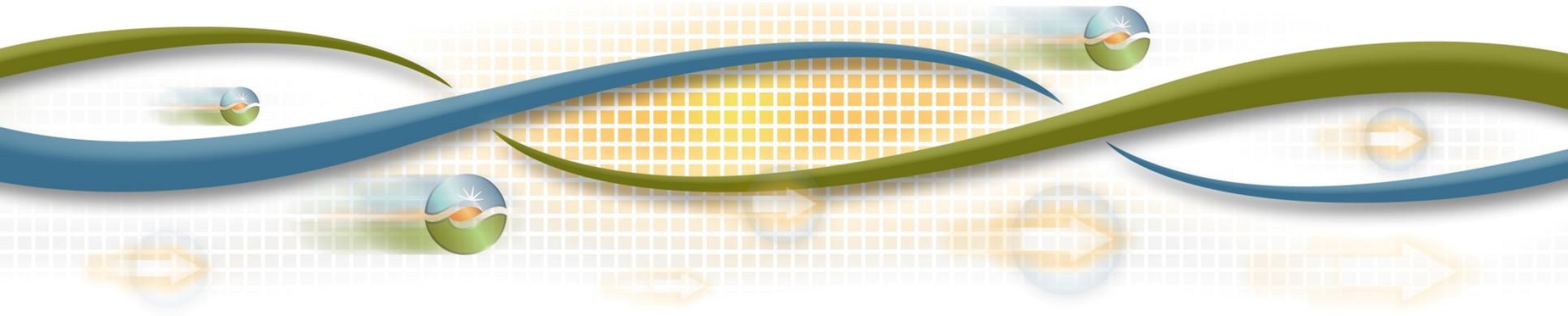


Review TAC Structure Straw Proposal Stakeholder Meeting

January 18, 2018

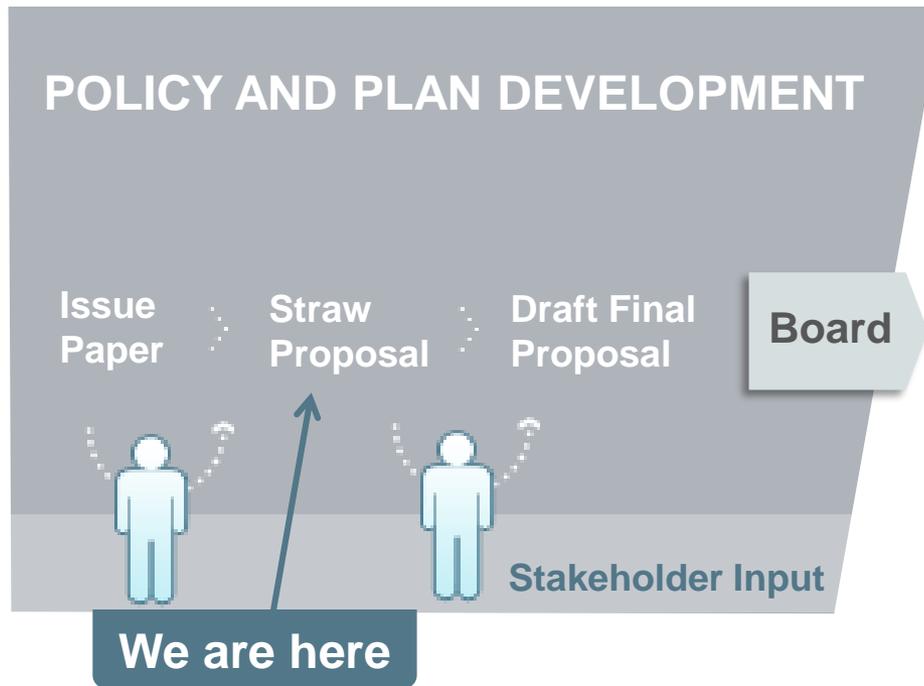
Chris Devon, Senior Infrastructure and Regulatory Policy Developer



Agenda

Time (PST)	Topic	Presenter
10:00 – 10:10 am	Welcome and introduction	Jody Cross
10:10 – 10:30 am	Summary of objectives and straw proposal elements	Chris Devon
10:30 am – 12:00 pm	Point of measurement proposal	Chris Devon
12:00 – 1:00 pm	Lunch	
1:00 – 3:50 pm	Use measurement hybrid approach proposal	Chris Devon
3:50 – 4:00 pm	Next steps and conclusion	Jody Cross
4:00 pm	Adjourn	

Stakeholder Process



Initiative Schedule

Date	Milestone
Jan 11	Post straw proposal
Jan 18	Hold stakeholder meeting
Feb 15	Stakeholder written comments due
Mar 22	Post revised straw proposal
Mar 29	Hold stakeholder meeting
Apr 20	Stakeholder written comments due
June, TBD	Post draft final proposal
June, TBD	Hold stakeholder meeting
July, TBD	Stakeholder written comments due
TBD	Present final proposal at CAISO Board meeting

Summary of objectives and Straw Proposal elements

Overview of TAC structure

- Two primary aspects of TAC structure are described in straw proposal for potential modification:
 - TAC point of measurement is currently assessed at end use customer meters on gross load
 - Considered the T-D interface measurement point option as an alternative approach
 - TAC measurement of customer usage is currently a volumetric measurement (MWh's) approach
 - Considered peak demand charges (MWs), time of use (on peak/off peak), and hybrid (blend of volumetric and peak demand) approaches
- Important to recognize that any changes will have impacts on cost allocation for existing system embedded costs

Objectives for potential TAC modifications

- ISO believes that potential TAC structure modifications should be designed primarily to consider and reflect:
 - Cost causation and cost drivers of the past
 - Current use of system & benefits provided by the system
- Due to constant changes in how the transmission system is planned and used, these rate making principles are not necessarily still aligned with current TAC structure
- TAC recovers costs of existing facilities so appropriate recovery of existing costs is a very important consideration when evaluating potential modifications
- ISO recognizes TAC structure may have impacts on resource procurement decisions

How the proposal is related to ISO's TAC objectives

- TAC cost recovery mechanism should align allocation with cost causation and benefits and proposed changes may better reflect these considerations
- Ideally, TAC structure should be designed to be as simple and understandable as possible and to recover costs in a fair and equitable manner
 - Changes should only be made if they can be shown to more closely align cost allocation with cost causation and benefits
- ISO is also concerned with avoiding creating any signals or incentives that would have an inefficient impact on market outcomes or dispatch

Summary of major straw proposal elements

- **Point of measurement proposal:** No change at this time, continue to utilize end use customer meter load data
 - Most stakeholders support this element of the proposal with primary concerns related to cost shifting outcomes that may not be justified
 - Additional ratemaking mechanisms would be needed to ensure resulting cost shifts are not unreasonable if changes were made
- **Measurement of customer use proposal:** Modify current pure volumetric approach and utilize a hybrid billing determinant approach (volumetric and peak demand)
 - Part volumetric and part peak demand, based on coincident peak gross load
 - Better reflects cost causation and usage of the system

Comprehensive proposal on both key issues is vital

- Proposal for both aspects of TAC have interrelated impacts and both should be considered holistically
- ISO believes that moving point of measurement to T-D interface without other vital modifications could result in:
 - Cost shifts among UDC areas that may not be justified, and
 - Potential for inefficient dispatch of ISO markets that also may increase overall costs for consumers
- Hybrid billing determinant approach can more accurately reflect cost causation and current benefits and use of the system
 - Changes to point of measurement while maintaining volumetric measurement can exacerbate inefficient market outcomes

Point of measurement proposal

Point of measurement proposal

- ISO is proposing to maintain the current point of measurement at end use customer meters
- ISO discussed potential change to T-D interface during two previous stakeholder working groups following issue paper
 - ISO solicited feedback after these working group discussions and received numerous concerns and issues in opposition to use of T-D interface as the point of measurement
- Stakeholders expressed significant concerns this potential change will inappropriately shift costs between UDC areas
 - Cost shifts that result from moving point of measurement may not be justified because resulting cost allocation may not reflect costs incurred to meet needs of each UDC area

Customers that are served by some DG production still receive benefits from the transmission system

- Very few loads being served by on-site or distribution-connected generation (DG) truly leave the grid
 - e.g., disconnect from the transmission grid altogether and thus no longer receive the benefits and services of transmission
- Customers are accessing most or all benefits at any given time under normal system conditions and especially during peak and contingency conditions
 - These benefits are enabled by the reliable operation of the transmission system
 - Not easily quantified and not necessarily proportional to a net energy transfer to or from the transmission grid

DG resources can reduce potential future costs but not embedded costs of existing system

- It is possible for certain DG resources to avoid or defer some future transmission investments
 - Potential future cost avoidance depends on the nature of particular DG resource and the needs of the grid in identified locations
- Future transmission investments may be avoided by DG or other alternatives that are identified through existing planning processes
 - These avoidable future investments are not made and do not become part of the HV-TRR that is recovered through the TAC

Embedded costs were incurred to serve customers and impact to existing cost recovery is a major issue

- Existing system was planned and built to serve load and provide reliability services to customers
 - Forecasting and ISO Transmission Planning Process account for DG impacts includes impact of DG installations and other load modifiers – *i.e.*, EE and DR
- ISO recognizes that DG resource impacts may also require changes to be more appropriately reflected in cost recovery
 - But any changes to TAC structure will impact cost recovery of existing system and modifications must be justified
 - Moving point of measurement may better reflect latest DG impacts to transmission investments, however it will also create a shift in cost recovery of embedded costs that may no longer reflect historic cost drivers

Point of measurement and measurement approach are interrelated and can impact dispatch efficiency

- Changing the point of measurement may better reflect the impacts of DG on future avoided costs that are already reflected in forecasting and planning
 - But retaining current volumetric TAC structure would impact load's willingness to pay for energy from transmission connected generation
- If only load served by behind-the-measure generation does not pay volumetric TAC charges, then DG appears less expensive than transmission connected resources
 - Decreases load's willingness to pay for energy from transmission connected resources
 - Results in a greater share of load served by distributed generation resources, however, this may not be the least-cost dispatch of generation resources

Moving point of measurement will not create a reliable economic incentive without other changes

- Changing the point of measurement in an effort to incentivize LSEs to procure more DG may not be effective without developing additional measures
 - Resulting cost allocation will be dependent on other LSE procurement decisions in other UDC areas
 - Because outcomes are dependent on other parties procurement decisions the potential incentive to procure DG may not provide a useful investment signal
- TAC currently billed through UDCs, not LSEs
 - Additional accounting mechanism would be needed to reflect impacts of individual LSE decisions within each UDC area
 - Complexity required for ISO to do this may not be justified if accompanying rate making mechanism is not developed

Use measurement hybrid approach proposal

Hybrid approach for measurement of use proposal

- Current volumetric measurement of usage for billing TAC was influenced by perceived fair cost recovery and reflects benefits of energy delivery functions
- This approach may no longer reflect current use and benefits of system, particularly to deliver capacity on peak and for other reliability services
- ISO is proposing modifications to current volumetric measurement to a hybrid billing determinant approach
 - Recommending utilizing part volumetric and part peak demand measurements

Transmission system provides both energy and capacity functions and other reliability benefits

- Current volumetric approach may not reflect cost causation for peak load cost drivers
 - Also benefits associated with the delivery of capacity, especially during peak load periods
- Proposed hybrid approach captures both energy and capacity functions more accurately
 - Peak demand measurement is useful for determining use and benefits correlating with system peak load periods that are a historic cost driver of some investment in existing system
 - However, a hybrid approach would not limit TAC cost recovery to only peak demand periods, may be appropriate since benefits of policy projects and other energy delivery functions accrue during all hours of the year, not just during peak demand periods

Hybrid approach reflects cost causation and benefits accrued by users more appropriately

- Adding a peak demand measurement will allow costs and benefits of serving customers with low load factors and high peak demands to be reflected in cost recovery more appropriately than volumetric approach alone
 - Peak demand measurement can disregard or discount the assignment of costs and benefits provided during off-peak periods
 - May socialize costs incurred due to off-peak needs and locations needing more investment to meet off-peak needs
- Utilizing part peak demand and volumetric measurements can better reflect both peak capacity delivery and policy driven energy delivery functions

Frequency of peak demand measurements

- Variety of options must be determined to implement a demand based billing determinant measurement
- One important option is the number or frequency of peak demand measurements
 - e.g., annual peak (1), seasonal peaks (4), monthly peaks (12), or daily peaks (365)
 - Other regions have used all of these various frequencies of peak demand measurements
- Generally, frequency is intended to reflect the way transmission system has been planned, and intended benefits provided based on planning process
 - ISO TPP plans system to meet monthly system coincident peaks so monthly measurements can align frequency with planning

Peak demand measurement: coincidence vs non-coincidence

- Coincident and non-coincident peak demand charges are not mutually exclusive
- Non-coincident peak demand measures may better capture some of the usage and benefits provided to specific customers that peak frequently different from overall coincident system peak
- ISO seeks input on how non-coincident peak demand measurement could be used with coincident peak demand charges to mitigate some potential drawbacks associated with each approach and if it would be appropriate

Determining TRR split under hybrid approach

- Must determine portion of TRR is collected through each component of hybrid approach
 - What proportion of TRR should be collected under volumetric measurement versus peak demand measurement?
- Proposed two potential options in this iteration
 - Split intended to allocate costs associated with energy delivery functions through volumetric portion of hybrid approach and allocate costs of system associated with capacity and reliability functions through peak demand portion of hybrid approach
 - Difficult to precisely determine cost drivers of the existing system associated with energy delivery versus capacity and reliability functions

Determining TRR cost recovery split for hybrid approach

- Attempt to reflect the costs of the system associated with these functions of energy delivery versus capacity and reliability
 - Try to determine the proportion of costs associated with specific project types approved under ISO's TPP or predecessor planning processes

ISO approved transmission investment breakdown by project category:

Project Category	Transmission Plan								Cumulative TOTAL	(%)
	Prior to 2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017		
Reliability	-	1,198	647	1,343	1,833	352	288	24	5,685	41.66%
Policy	~7,000	40	-	421	135	-	-	-	7,596	55.66%
Economic	-	-	-	-	359	7	-	-	366	2.68%
Annual TOTAL	7,000	1,238	647	1,764	2,327	359	288	24	13,647	100%

(\$ costs provided in millions)

TRR split under hybrid approach (continued)

- Policy projects are based on a RPS requirement of delivering MWhs and economic projects that enable lower cost energy could be considered energy functions
- Reliability projects could be considered a capacity function because they help ensure peak loads are served reliably
 - Could split TRR consistent with the approval of project types
 - ISO could propose split based on ratio of previously approved investments, roughly 42% of these approved costs serve a capacity function of the overall system (costs associated with reliability projects) and 58% of the approved costs are related to the energy delivery function of the overall system (costs associated with policy and economic projects)
 - May need to revisit split ratio in future under this approach

TRR split under hybrid approach (continued)

- All transmission investments have some benefits for both energy and capacity functions
 - May be appropriate to split TRR in a less specific manner than applying ratio of approved costs of project types described above
- ISO could apply a more straightforward split of TRR:
 - Assign half (50%) to be collected through a volumetric approach and half (50%) through a demand charge approach
- 50-50 split of TRR cost recovery under a hybrid approach may more accurately capture the fact that all transmission investments can deliver both energy delivery and peak capacity delivery benefits
 - ISO seeks stakeholder feedback on these options and welcomes suggestions for any potential alternative solutions to TRR split under hybrid approach

Analysis of TAC structure modification options

- ISO has engaged Brattle Group to develop a spreadsheet model to analyze alternative approaches to current TAC structure
 - Goal of this modeling effort is to analyze potential cost shifts among UDCs if different approaches were used in calculating and billing the TAC
- ISO believes merits of current proposal should be considered by stakeholders based upon principles identified and not just on specific impacts to individual entities
 - ISO does not provide impact analysis of the proposed billing determinant modifications in this iteration
 - ISO plans to provide results of the analysis after it has received meaningful feedback on the merits of proposal principles

Treatment of Non-PTO Municipal and Metered Sub Systems under hybrid approach

- May need to revisit the approach for measuring use of the system by Non-PTO municipals and Metered Sub Systems (MSS)
 - Currently allocated transmission costs through WAC
 - May need align use measurement approaches for these entities with other proposed TAC structure modifications
- ISO would need to develop a new category of rates for transmission cost recovery that would differ from the current TAC rate for PTO customers and WAC rates charged to these Non-PTO and MSS entities currently
 - ISO seeks feedback on this issue and would like to understand if stakeholders believe it makes sense to apply a similar hybrid approach for Non-PTO municipal and MSS entities

Next steps

Next steps

- Stakeholders are asked to submit written comments by February 15, 2018 to: initiativecomments@caiso.com
- Comment template will be made available at the following link:
<http://www.caiso.com/informed/Pages/StakeholderProcesses/ReviewTransmissionAccessChargeStructure.aspx>