Transmission Access Charge Options
Draft Regional Framework Proposal

Stakeholder Meeting

December 13, 2016

December 13, 2016 stakeholder meeting agenda

Time (PST)	Topic	Presenter
10:00-10:10	Introduction and Stakeholder Process Overview	Kristina Osborne
10:10-12:00	Discuss Draft Regional Framework Proposal – discussion will follow sequence of topics in paper	Lorenzo Kristov
12:00-12:45	Lunch break	
12:45-2:45	Discuss DRFP – continued	Lorenzo Kristov
2:45-3:00	Next Steps	Kristina Osborne

Draft Regional Framework Proposal

What does “draft regional framework proposal” mean?

TAC Options is one of several initiatives comprising a possible framework for a regional ISO balancing authority area

- This proposal is the result of a thorough stakeholder process
- CAISO management believes it reflects best efforts to balance stakeholder positions as a framework for a regional ISO
- Process on governance for a regional ISO BAA is proceeding in parallel and will continue into 2017
- No CAISO Board decision is planned or imminent

– At this point in a standard CAISO stakeholder initiative the CAISO would issue a “draft final proposal”

- “Draft final proposal” usually signals imminent CAISO Board action, so is not appropriate in this context

Key Terms, Concepts and Assumptions

Terms, concepts, assumptions – 1

a) Proposal addresses cost allocation for high-voltage facilities (200 kV and above)
   - Cost allocation for "local" low-voltage facilities (< 200 kV) under ISO operational control will be PTO-specific

b) Use of "CAISO" refers to existing ISO BAA, controlled grid facilities, member PTOs, etc.

c) "Expanded ISO" refers to expanded BAA formed by integrating a new PTO with a load-service territory with the existing CAISO area

d) PTO#1 refers to the first new PTO to join to form the expanded ISO

Terms, concepts, assumptions – 2

e) "New" transmission facilities are those planned and approved through a new integrated TPP for the expanded ISO BAA

- Integrated TPP will begin at the start of the first full calendar year that PTO#1 is fully integrated
- A "new" facility could be an upgrade to existing facility, if the upgrade is planned through the integrated TPP
- A "new" facility could be a project under consideration as inter-regional prior to formation of the expanded ISO
- The following steps are required for a project to be approved through the integrated TPP (as in today's CAISO TPP)
  - Planning studies identify and describe the need
  - Planners evaluate pros and cons of alternative solutions
  - Planners determine the most cost-effective solution

Terms, concepts, assumptions – 3

f) "Existing" transmission facilities are those placed under operational control of expanded ISO that are not "new"

g) The existing CAISO area and the PTO#1 area will each be a "sub-region" under the expanded ISO.

Subsequent new PTOs will each become a sub-region unless embedded in or electrically integrated with an existing sub-region

- A new PTO is "embedded" within an existing sub-region if it cannot import sufficient power into its service territory to meet its load without relying on the transmission of the existing sub-region.

Electrically integrated new PTOs

– "Electrically integrated" will be determined case-by-case, in a stakeholder process and subject to Board approval, considering these criteria:
  - The proportion of the new PTO's annual and peak load served over the facilities of the existing sub-region
  - Number of interties between new PTO and existing sub-region, and distance between them
  - Whether transmission system of new PTO runs in parallel to major parts of existing sub-region system
  - Frequency and magnitude of unscheduled power flows at applicable interties
  - Number of hours where direction of power flow reverses from scheduled directions

Terms, concepts, assumptions – 4

h) Expanded ISO will continue to charge TAC on per-MWh volumetric rate to all internal loads and exports

Structure of wholesale TAC does not prescribe or constrain structure of retail transmission charges

- CAISO PTOs under California PUC currently use volumetric rates for residential customers and combination of demand + volumetric for commercial and industrial customers
- Expanded ISO will charge TAC to utility distribution companies (UDCs) based on their Gross Load (except for “non-PTOs” that pay on total MWh wheeled out of the CAISO controlled grid)
- Retail rate structure each UDC uses to recover TAC charges from retail distribution customers is not determined by ISO wholesale TAC charges

Cost Allocation for Existing Transmission Facilities

Costs of existing facilities will be recovered via “license plate” sub-regional TAC rates.

1. Sub-regional TAC will be charged to each MWh of load internal to the sub-region
   - “Non-PTOs” within a sub-region will pay the sub-regional TAC rate applied to their total MWh wheeled out of the ISO controlled grid, as they do today
   - Exports and wheel-throughs from the expanded ISO will pay a region-wide export access charge (EAC) – discussed below
2. & 3. Each sub-region’s existing facilities will comprise “legacy” facilities for which subsequent new sub-regions have no cost responsibility
4. High-voltage TRR for embedded or electrically integrated PTOs will be combined into the license-plate rate for rest of that sub-region

Cost Allocation for New Transmission Facilities

Cost allocation for new facilities

5. A new transmission facility may be considered for cost allocation to multiple sub-regions if it is rated 200 kV or higher (high-voltage)
   - Costs for certain high-voltage projects – specified below – would be allocated entirely to the sub-region where they are built
   - Costs for low-voltage projects (below 200 kV) would be allocated entirely to the relevant PTO
6. ISO will use Transmission Economic Assessment Methodology (TEAM) to determine economic benefits to expanded ISO region as a whole and to each sub-region
   - CAISO is updating TEAM documentation

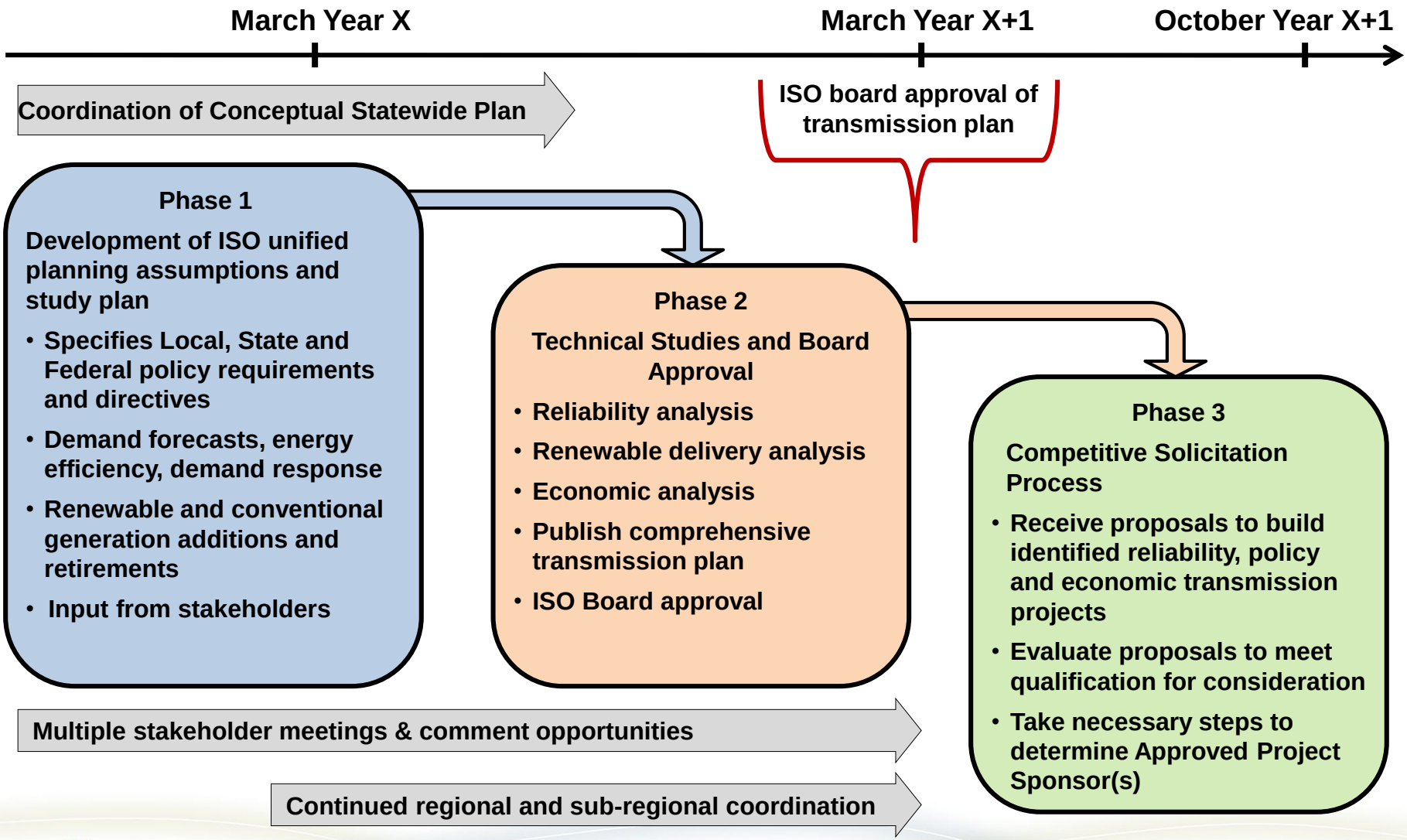
Using TEAM results to determine sub-regional shares of economic benefits

- Production cost savings (from end-use ratepayer perspective) will be extracted from production simulation results
- Capacity benefits can be manually derived based on capacity requirements a sub-region basis
- Transmission line losses will be extracted from snapshot power flow cases used for reliability analysis and extrapolated to calculate annual benefits
- The present value of annual benefits results will be calculated using social discount rate ranges

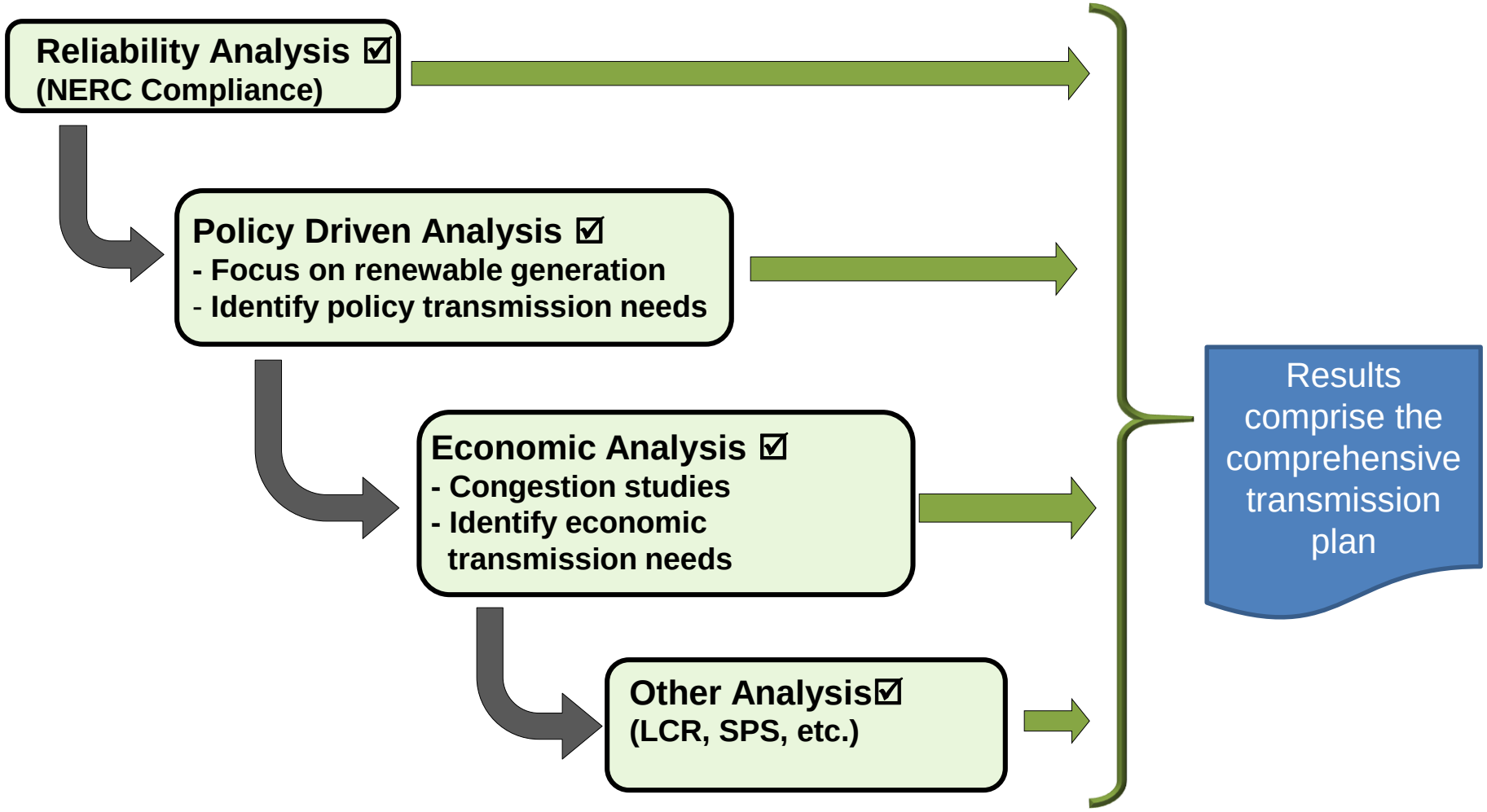
Cost allocation for new facilities – continued

7. We assume for this initiative that a new integrated TPP for the expanded ISO will retain today's TPP structure
   - Three-phase process begins in January each year
   - Phase 1 (3 months) establishes unified planning assumptions and study plan
   - Phase 2 (12 months) performs studies, identifies best projects to meet needs, develops comprehensive plan and submits plan to Board of Governors for approval
   - Phase 3 – not relevant for cost allocation – entails competitive solicitation for eligible projects and selection of entity that will build and own the facility

Transmission planning process spans 15 months for phases 1-2, up to 23 months across all three phases.



In Phase 2, the CAISO's technical analysis is conducted in three deliberate stages in identifying needs and solutions.



Analysis and project identification under the integrated TPP will be sequenced – not three parallel study paths.

- "Reliability projects" consider the relative benefits and costs of alternatives to meet the reliability need; planning analysis does not produce benefit-cost results.
- Policy needs may result in modifying a reliability project to meet both reliability and policy needs. The resulting project is called a "policy-driven project."
- Similarly, economic analysis may result in modifying a reliability-driven and/or policy-driven project, and the result is designated an "economic project."
- Only economic projects require a benefit-cost analysis and resulting benefit/cost ratio of at least 1.0.
- If a policy or reliability project is modified to provide economic benefits, the economic benefits must exceed the incremental cost above the original project.

Cost allocation for new facilities – item 8

a) CAISO proposes to allocate policy-related costs of certain policy-driven projects to loads of relevant state or local regulatory authorities (S/LRAs)
   - *This will apply only in cases where a project is built in one sub-region to meet policy needs of another sub-region (items (f)-(g))*
   - Other cost allocation provisions in this proposal go only to the sub-region level of granularity

b) In Phase 1 of integrated TPP the ISO will receive input from S/LRAs re their needs for transmission capacity to support meeting their policy mandates
   - Analogous to CAISO's receipt of RPS portfolios from CPUC
   - This information will serve to determine
     - What new policy-driven transmission capacity is needed
     - In applicable cases, the appropriate cost shares for each relevant S/LRA in proportion to their needs for the project

Cost allocation for new facilities – item 8 continued

c) For a reliability project that is designed only to meet a reliability need within a sub-region, allocate the full project cost to that sub-region
   - Benefits that are incidental or unintended by the planners will not be considered in cost allocation for such projects
   - Project is necessary to address a reliability need and would have to be built even with zero incidental benefits

d) For a policy-driven project connected entirely within the same sub-region where the policy driver originated, allocate full cost to that sub-region

e) For a purely economic project (not a modification of a reliability or policy-driven project, and having BCR > 1), allocate cost shares to sub-regions in proportion to their economic benefits (determined through TEAM)

Cost allocation for new facilities – item 8 continued

f) For an economic project that results from modifying a reliability or policy-driven project to obtain economic benefits greater than incremental project cost:

  - First allocate avoided cost of original reliability or policy-driven project to the relevant sub-region,
  - Then allocate incremental project cost to sub-regions in proportion to their economic benefits (per TEAM)
  - Proposed rule is the “driver first” approach

- For the policy-driven portion of the cost the ISO would apply more granular cost allocation to relevant S/LRAs if
  - The original project was a policy-driven project, and
  - The new project is built within a different sub-region than the one where the policy drivers originated

Cost allocation for new facilities – item 8 continued

f) Policy-driven projects involving more than one sub-region
  - Scenario 1: project is built in sub-region A to support policy mandates of sub-region B
  - Scenario 2: project supports policy mandates for sub-regions A and B
  - Both sub-regions receive benefits in most cases
  - "Driver first" allocation method requires credible avoided cost for an alternative to the selected project – often not available

- Scenario 1: Allocate cost shares to sub-regions up to the amount of their economic benefits; allocate remaining cost to relevant S/LRAs in sub-region B with policy needs for the transmission
- Scenario 2: Allocate cost shares to sub-regions up to the amount of their economic benefits; allocate remaining cost to relevant sub-regions in proportion to their policy needs for the transmission
  - If project is built within sub-region A, then allocate sub-region B's share of policy-related cost to relevant S/LRAs

More granular allocation of policy-driven costs to S/LRAs driving the transmission need

- Consider variant of Scenario 2: Project built within sub-region A supports policy mandates for sub-regions A and B
  - Both sub-regions A and B pay shares of the policy-related costs of the project
  - Sub-regional shares are proportional to each sub-region's need for the project, based on the planning information provided in Phase 1 of the integrated TPP
  - Sub-region A's share of the policy-driven costs is included in A's sub-regional TAC rate
  - Sub-region B's share of the policy-driven costs is charged to the S/LRAs driving the need for the project as S/LRA-specific charges on top of B's sub-regional TAC rate

9. Competitive solicitation to build & own a new facility

All new transmission projects rated 200 kV or greater, of any category, will be open to competitive solicitation, with exceptions only as stated in ISO tariff section 24.5.1:

- When the facility involves "an upgrade or improvement to, addition to, or a replacement of a part of an existing PTO facility," in which case …
- "The PTO will construct and own such upgrade, improvement addition or replacement facilities unless a Project Sponsor and the PTO agree to a different arrangement"

- This approach creates a level playing field for competitive solicitation across the expanded ISO BAA

CAISO sustains elimination of two earlier provisions.

10. ISO will not recalculate benefit & cost shares for sub-regions
    - Potential future changes in a sub-region's allocated cost create undesirable risk
    - Cost shares once calculated and approved will not be revised
11. ISO will not allocate cost shares to a new PTO for a new facility that was planned and approved before that PTO joined the expanded ISO
    - Prior provision could deter a TO from joining if it faced potential cost share for a project it had no role in planning
    - OTOH, new provision could incentivize a TO to postpone joining until existing PTOs approve projects it would benefit from

Region-wide
Export Access Charge (EAC)

The CAISO proposes to create a single region-wide export rate for all exports from the expanded BAA.

13. The “export access charge” (EAC) would apply to each MWh exported on high-voltage interties anywhere in the expanded ISO
14. The EAC would differ from today’s “wheeling access charge” (WAC) in important ways
    - Today CAISO charges WAC to the internal load of non-PTO entities embedded in the CAISO BAA, as well as to exports
    - Under the proposal, non-PTO entities would pay the same sub-regional TAC rate paid by other loads in the same sub-region
15. The EAC rate will be the load-weighted average of the sub-regional high-voltage TRRs; for two sub-regions:

$$\text{EAC rate} = (\text{TRR1} + \text{TRR2}) / (\text{Load1} + \text{Load 2})$$

16. Each PTO's export revenues in one year become an offset to its TRR for the subsequent year.

Apply this principle to sub-regions by summing the terms for all PTOs within the sub-region

- Let EACrev1 = a sub-region's EAC revenues in year 1
- TRR2 = the sub-region's high-voltage TRR for year 2
- L2 = the sub-region's projected internal load for year 2
- TAC2 = the sub-region's license plate TAC for year 2

Then the sub-region's license plate rate is:

$$TAC2 = (TRR2 – EACrev1) / L2$$

The quantity (TRR2 – EACrev1) is the sub-region's "net" TRR to be collected in year 2, and will be used to calculate the EAC for year 2 as well as the license plate TAC

17. The CAISO proposes to allocate EAC revenues to sub-regions in proportion to their "net" TRRs

For two sub-regions with export quantities E1 and E2, the total EAC revenues = (E1 + E2) * EAC rate

The sub-regional shares of EAC revenues are:

- Sub-region 1 share = (EAC revenues) * TRR1 / (TRR1 + TRR2)
- Sub-region 2 share = (EAC revenues) * TRR2 / (TRR1 + TRR2)

18. Clarifications regarding granular allocation of policy-driven costs
    - TRRs used in calculating the EAC rate and the EAC revenue shares include any sub-regional shares of policy-driven costs that are allocated to specific S/LRAs
    - Within a sub-region, a S/LRA whose load pays an additional policy-driven charge above the sub-regional TAC rate will receive a share of the sub-region's EAC revenues in proportion to its share of the sub-region's TRR
    - This does not affect EAC revenue allocation between sub-regions

Example for item 18

- LRA1 and LRA2 both within sub-region A drive the need for a policy project built within sub-region B.
- Project cost is $100 M; LRA1 share = $40 M, LRA2 share = $60 M
- Assuming TRR is 15% of project cost, LRA1's TRR for the project is $6 M and LRA2's TRR is $9 M
- Sub-region A's TRR for the year = $300 M (including the $15 M policy-driven costs and net of previous year's EAC revenues)
- Suppose sub-region A's share of current year EAC revenues = $30 M. Then the $30 M is distributed as follows:
  - $0.6 M toward LRA1's next year policy-driven TRR share
  - $0.9 M toward LRA2's next year policy-driven TRR share
  - $28.5 M toward TRR to be collected via A's sub-regional TAC

There's one more topic to mention.

CAISO initiative in progress GIDNUCR = "Generator Interconnection Driven Network Upgrade Cost Recovery"

- Several stakeholders in GIDNUCR asked about how it would link to the TAC Options initiative
- Today, a generator is reimbursed for costs of low-voltage interconnection driven network upgrades by ratepayers within the PTO service area
- GIDNUCR is considering possible alternatives, such as recovery through the high-voltage TAC in certain situations
- Outcome of GIDNUCR is still uncertain – the CAISO has not yet posted a draft final proposal yet
- However GIDNUCR is resolved, CAISO expects the outcome would apply consistently across the expanded ISO BAA.

Next Steps

Next Steps

- Stakeholder comments on Draft Regional Framework Proposal due January 4, 2017
- Submit to initiativecomments@caiso.com
- Subsequent activities on this initiative have not yet been planned or scheduled.