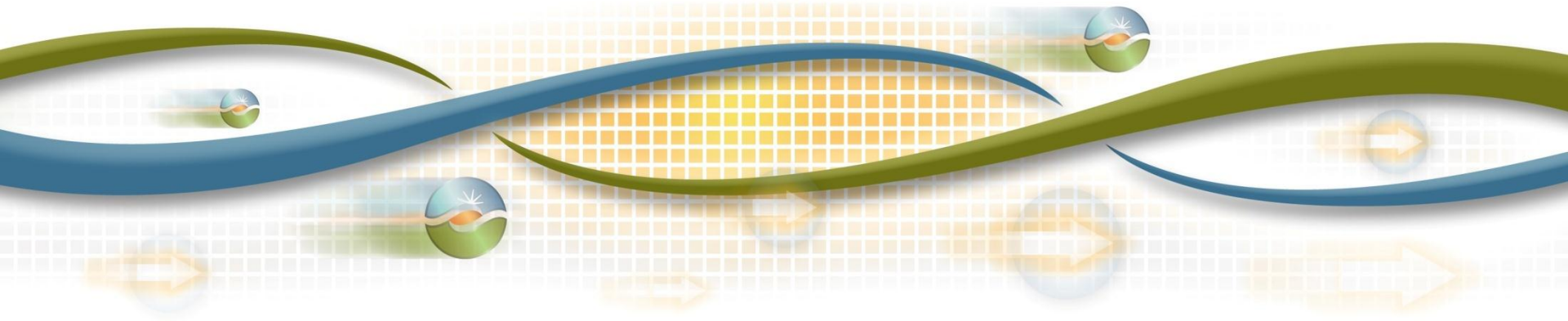


# Transmission Access Charge Options Straw Proposal

Stakeholder Meeting – March 1, 2016

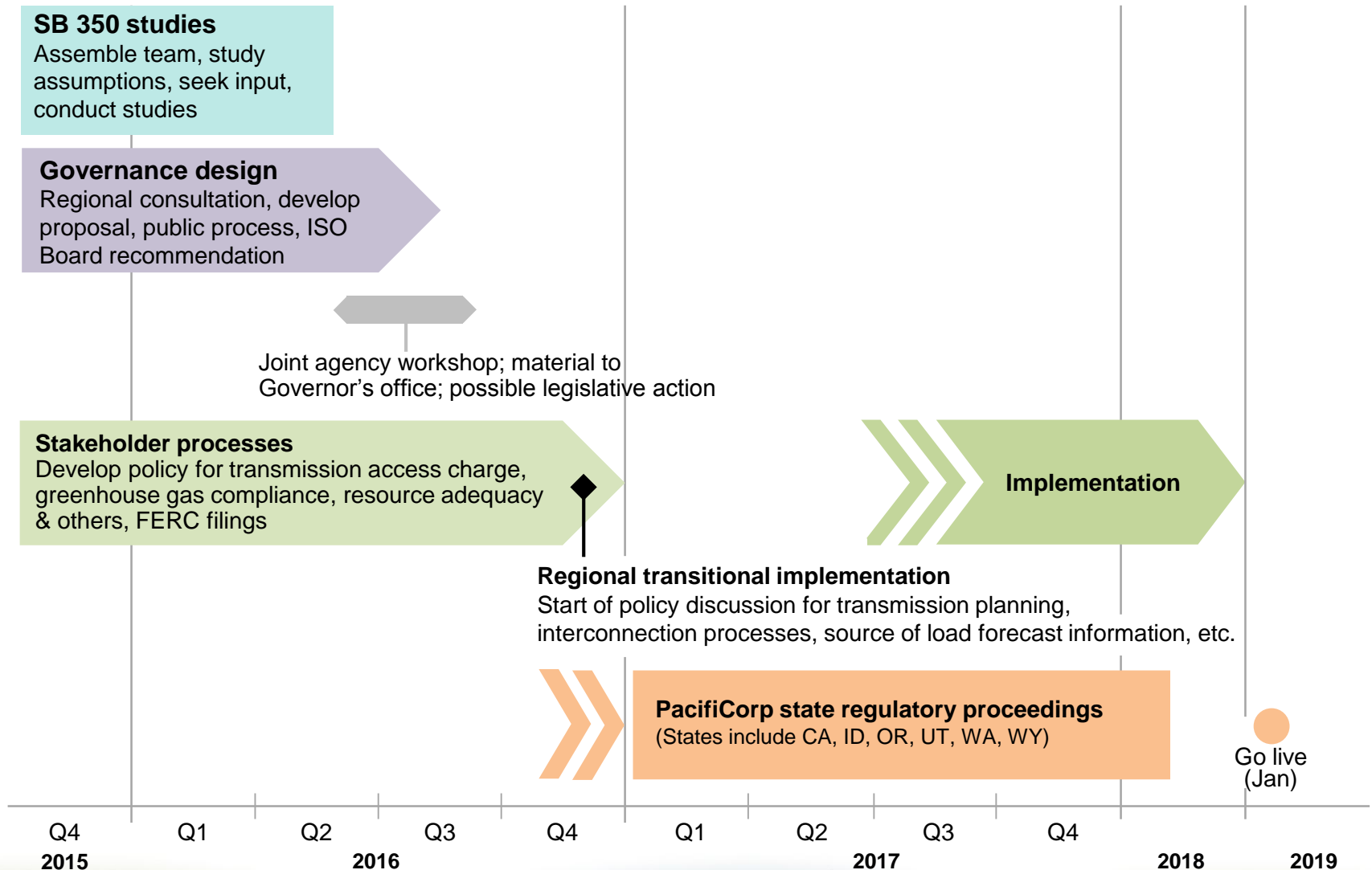


# March 1, 2016 meeting agenda

Time (MST)	Topic	Presenter
10:00-10:10	Introduction and Stakeholder Process Overview	Kristina Osborne
10:10-12:00	Straw Proposal – part 1	Lorenzo Kristov
12:00-12:45	Lunch break	
12:45-1:30	Straw Proposal – part 2	Lorenzo Kristov
1:30-2:10	Benefits Assessment Methodologies	Abhishek Singh
2:10-2:25	Public Policy Projects	Bill Weaver
2:25-2:50	TAC Spreadsheet Tool	Eric Kim
2:50-3:00	Next Steps	Lorenzo Kristov

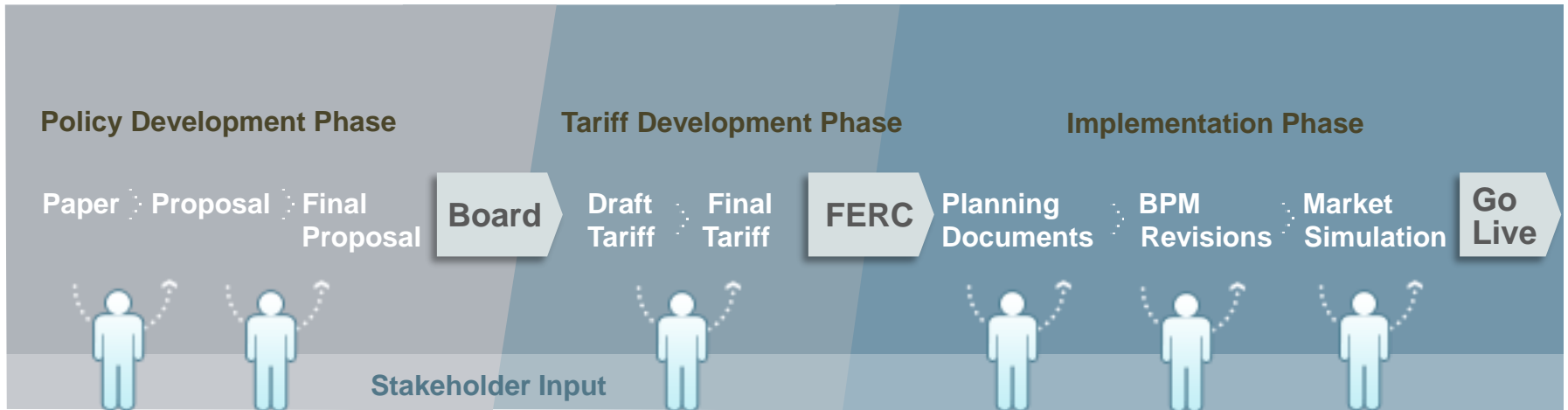
# Timeline for regional integration activities

Note: Designed to allow PacifiCorp to obtain state regulatory approvals before the end of 2017

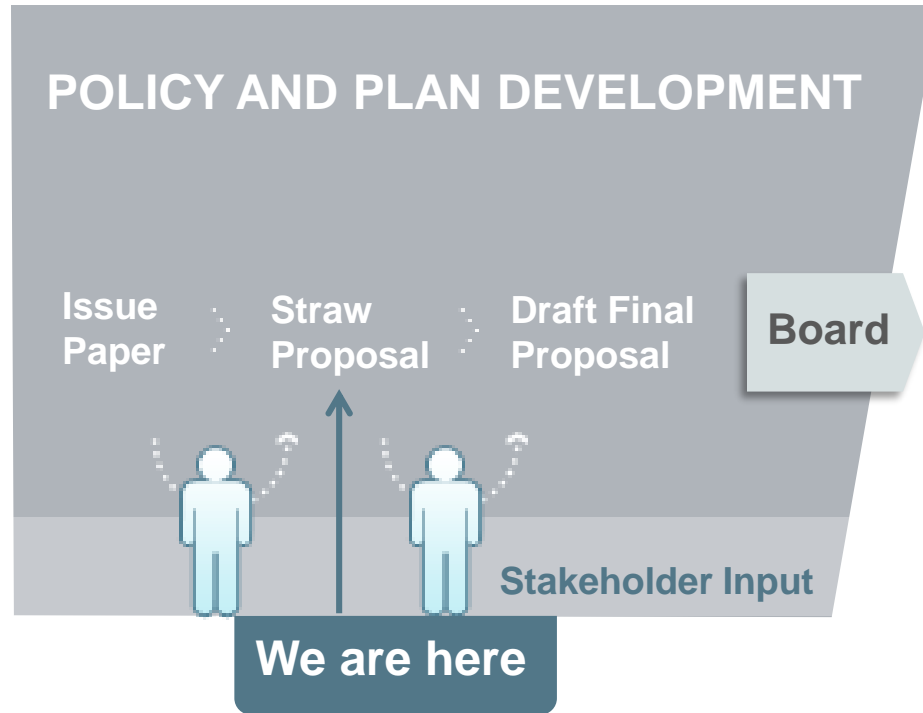


# ISO Stakeholder Engagement Process:

This diagram represents the typical process, often phases will run in parallel.




# ISO Stakeholder Process



# Initiative Schedule

Milestone	Date
Issue Paper posted	October 23, 2015
Stakeholder conference call	October 30, 2015
Stakeholder comments due	November 13, 2015
Workshop #1 on Issue Paper (SLC)	December 15, 2015
Workshop #2 on Issue Paper (Folsom)	January 11, 2016
Straw Proposal & Spreadsheet Tool posted	February 10
Stakeholder meeting	March 1
Working group on benefits methodologies	March 9
Stakeholder comments due	March 23
Post Draft Final Proposal	Mid April
Stakeholder meetings & comments	Dates TBD
Present proposal to ISO Board of Governors	June 28, 2016



# Straw Proposal Part 1: Overview, Definitions, Cost Allocation for Existing Facilities

Transmission Access Charge (TAC) is ISO's mechanism for transmission-owning utilities to recover their costs of transmission assets.

- A transmission-owning utility transferring operational control to the ISO becomes a “participating transmission owner” (PTO)
- The PTO continues to own, maintain and operate transmission assets turned over to ISO operational control
- ISO “operational control” involves performing balancing authority area (BAA) and transmission operator (TOP) functions through day-ahead and real-time markets



Existing TAC structure for the current ISO region was approved by FERC as part of Order 1000 compliance.

Existing TAC structure consists of:

- Postage stamp “regional” rate to recover TRR for all facilities rated  $> 200$  kV under ISO operational control
  - \$/MWh charge to all internal load and exports
- PTO-specific “local” rates to recover TRR for all facilities rated  $< 200$  kV under ISO operational control
  - \$/MWh charge to internal load in each PTO’s territory
- Currently there is no differentiation of cost allocation based on project type (e.g., reliability, economic, or policy projects), in-service date or other non-voltage level factors

The ISO now proposes revisions to the TAC structure to apply to the “expanded BAA” formed when a new PTO with a load service territory joins the ISO.

- Proposal focuses on “regional” or high-voltage TRR only
  - Assumes that < 200 kV costs continue to be recovered through PTO-specific rates
- Focuses on adding a PTO with load service obligation
  - Entities who build transmission but have no load service territory become PTOs under existing TAC structure, but have no load that pays TAC
- Assume that TAC will continue to be charged as a per-MWh rate to internal load and exports

## Straw proposal relies on several key definitions.

- A “sub-region” will be defined for the current ISO BAA (“CAISO”) and each PTO that joins the expanded BAA
  - May adopt special provisions in transition agreements for special cases, such as very small or embedded BAAs
- “Existing facilities” are transmission assets in-service or planned in the entity’s own planning process for its own pre-joining service area or planning region.
- “New facilities” are transmission projects planned and approved in an expanded TPP for the expanded BAA.
  - Details of expanded TPP will be developed in 2017
  - Expanded TPP will be designed to align with and support cost allocation provisions developed in this TAC initiative
  - Expect expanded TPP to be structurally similar to today’s TPP

## Straw proposal – existing facilities

- TRR associated with existing facilities will be recovered through sub-regional TAC rates for each sub-region.
- This means that the only facilities eligible for “regional” cost allocation (i.e., to multiple sub-regions) will be “new” facilities approved in the expanded TPP
  - Details to be discussed in part 2 after lunch
- When a subsequent new PTO joins the expanded BAA, that PTO will have a sub-regional rate for all its existing facilities and will not have any cost responsibilities for the existing facilities brought by prior PTOs.

# Straw Proposal Part 2: Cost Allocation for New Facilities

# Only facilities eligible for regional cost allocation will be “new regional facilities.”

Three steps determine regional cost allocation:

1. Facility must be planned and approved through the integrated TPP for the expanded BAA. This makes it a “new” facility, but this is just the first step.
2. Facility must meet at least one of the following to be a “new regional facility”:
  - a) Voltage rating >300 kV (i.e., 345 kV or 500 kV)
  - b) Interconnects or increases interconnection capacity between two sub-regions
  - c) Creates, increases, or supports increase of intertie between expanded BAA and a neighbor BAA
3. Sub-region cost shares will align with benefit shares, per benefits assessment methodology

## Additional provisions for new regional facilities

- A new regional facility will be subject to competitive solicitation to determine who builds it
- A subsequent PTO that joins the expanded BAA at a later date may be allocated a cost share for a “new regional facility” that was approved previously in the expanded TPP... but only in proportion to its share of the facility’s benefits

# Structure of multi-tier TAC with sub-regional rates

- TAC charge to load is based on voltage level and location of load take-out point on the controlled grid of the expanded BAA
  - Load connected at >200 kV pays sub-regional rate for existing facilities based on its location
  - Plus regional rate based on its sub-region's cost share for new regional projects
  - Load connected at <200 kV but still ISO controlled grid pays local PTO-specific TAC plus sub-regional and regional components above



Three methods of benefits assessment are proposed for three major transmission project categories.

- Reliability – DFAX
- Economic – TEAM with allocation of total benefits to sub-regions
  - Energy benefits
  - Local capacity benefits (increased import capability into constrained internal areas)
  - System capacity benefits (increased import capability to the expanded BAA)
- Policy – Basic principle is that all sub-regions may benefit from a policy project that was initially driven by one sub-region's or one state's policy.

*These are initial proposals – other suggestions are invited!*

# Methods for Assessing Benefits:

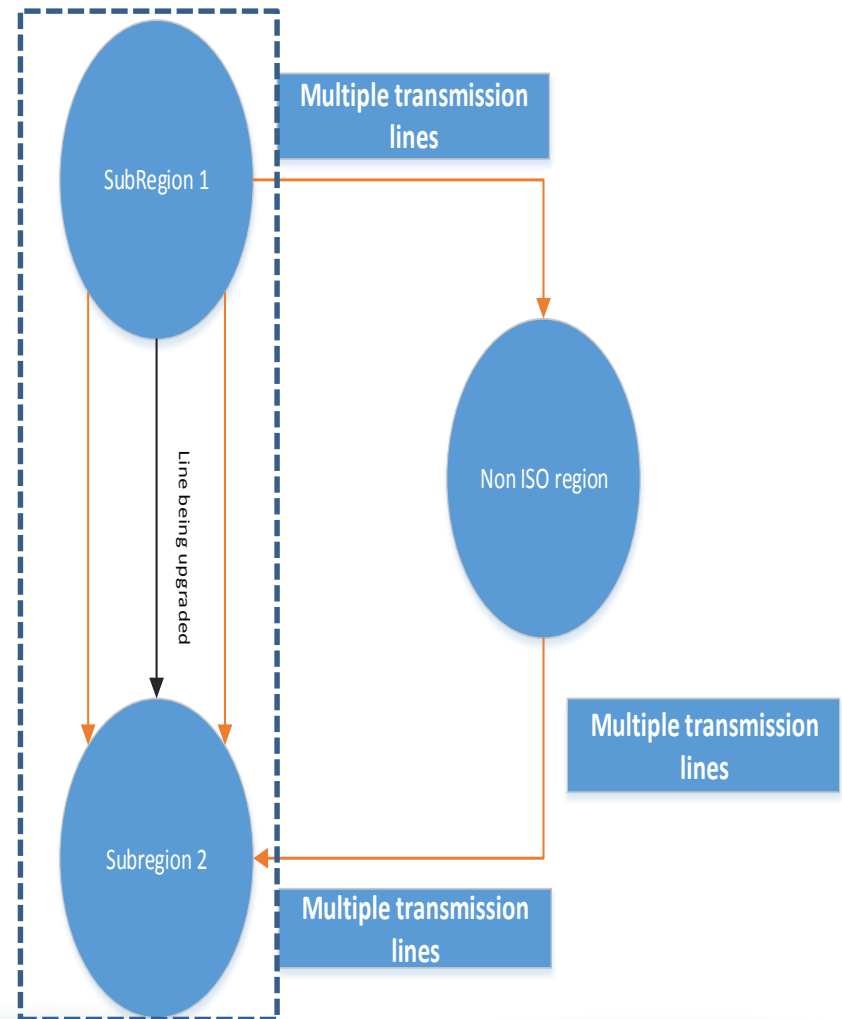
- Reliability Projects
- Economic Projects

# Reliability Projects Cost Allocation – DFAX methodology overview

- Use DFAX methodology similar to one used in PJM
- DFAX is based on a linearized power transfer on the reliability project where
  - Both Load and Generation are increased
  - Source is the entire generation fleet (CAISO + New Subregion)
  - Sink is the sub-region load for one sub-region at a time
- DFAX is a measure of the use of the project by an additional MW of a sub-region's load served by all generation in the BAA, as determined by power flow analysis

# Reliability Projects Cost Allocation – DFAX methodology overview

- Source: Subregion 1 + Subregion 2 Generation
- Sink: Subregion 1 load or Subregion 2 load
- Upgrade: 500 kV transmission line between the sub-regions.
- DFAX calculation steps
  - A hypothetical transfer of a MW from source to sink.
  - How much of the MW flows on the project for each of the sub-region 1 and 2 sinks?



# Reliability Projects Cost Allocation – DFAX example

- Use the DFAX to calculate each sub-region's use of the project.
- Calculate the % usage of each sub-region in + and – direction
- Calculate the + and – direction usage (%) of the upgrade based on production cost model.
- Allocate cost shares on a sub-regional basis.

Step	Methodology	Reference	Sub region 1	Subregion 2
1	Peak Load	Load Forecast	1000	2000
2	DFAX	Power flow case	0.4	-0.6
3	Sub-region use	step 2*step 1	400	-1200
4	Use (+) direction		400	
5	Use (-) direction			-1200
6	% use (+) direction		100%	
7	% use (-) direction			100%
8	Weighting Factor (+) direction	Production Cost	40%	
9	Weighting Factor (-) direction	Production Cost		60%
10	Cost allocation percentage	Step 8 * Step 6	40%	60%

# Economic Projects – TEAM methodology Overview

- Benefits evaluated:
  - Energy Benefits from production simulation
    - Load & Generation benefits
    - Transmission benefits
  - Capacity Benefits
    - Local area capacity benefits
      - Conceptually an upgrade reduces the local capacity requirement.
    - System capacity benefits
      - Potential increase in import capability between region
      - Framework for expanded BAA still under development
  - Any other benefits as applicable under TEAM.

# Economic Projects – Cost Allocation Proposal

- Currently the benefits are reported for the CAISO foot print.
- For the expanded BAA the economic benefits can be allocated across multiple sub-regions.
- The cost allocation would be based on the benefits shares observed for each of the sub-regions.

# Survey of Cost Allocation Approaches for Public Policy Projects



# FERC Order No. 1000

- Order No. 1000 required public utilities to include tariff provisions requiring consideration of “Public Policy Requirements” as part of transmission planning and in consultation with stakeholders
  - FERC defines “Public Policy Requirements” as state or federal laws or regulations
- FERC said these rules “are intended to ensure that the local and regional transmission planning processes support the development of more efficient or cost-effective transmission facilities to meet the transmission needs driven by Public Policy Requirements”

# FERC Order No. 1000

- Importantly, FERC did not mandate that transmission plans include a category of “public policy projects”
- Nor did FERC require any specific cost allocation methods to any specific category of transmission projects
  - Accordingly, ISO/RTOs differ in:
    - Whether they have “public policy projects”
    - Whether those projects have unique cost allocation methods and
    - What those cost allocation methods are

# Other RTOs: Public Policy Projects

	ISO-NE	PJM	MISO	SPP
Cost Allocation	<p>70% allocated via postage stamp</p> <p>30% allocated among states driving the public policy need</p> <p>Based on load ratio share</p>	No public policy category	100% allocated via postage stamp based on load ratio share	No public policy category
Selection	<p>NESCOE (Board appointed by each of the 6 NE governors) identifies public policy requirements driving transmission needs for ISO-NE's Regional System Plan</p> <p>Potential project sponsors then submit proposed solutions (conceptually, then concretely)</p> <p>All public policy projects must go through a competitive RFP process</p>		<p>17 "Multi Value Projects" or "MVPs" selected during 2011 stakeholder initiative.</p> <p>MVP project sponsors are chosen through competitive solicitation</p> <p>MVPs must meet three public policy criteria and six general conditions (next slide)</p>	

# MISO MVPs

## Must meet 3 public policy criteria:

1. Must support public policy requirements that govern the minimum or maximum amount of energy to be generated
2. Must provide multiple types of economic value across multiple pricing zones, with benefits exceeding costs
3. With quantifiable benefits, must address at least: one potential NERC reliability violation; *and* one economic-based transmission issue

## Must satisfy 6 conditions:

1. Associated facilities cannot be approved or in-service before 2010 (or when new TO joins)
2. Relevant TO must approve before construction
3. May not contain certain pre-selected facilities
4. Cost must exceed \$20mm
5. Must be above 100kV
6. Cannot be driven solely by an interconnection request

# Demonstration of TAC Analysis Spreadsheet Tool

## Spreadsheet tool enables stakeholders to estimate TAC impacts of future developments in the expanded BAA.

- The October 23 issue paper included numerical examples of existing and hypothetical TAC structures for combined CAISO + PacifiCorp BAA up to 2029
  - Baseline 1: Separate sub-regional rates for all existing facilities >200 kV
  - Baseline 2: Single merged rate for >200 kV
  - Alternative 1: Sub-regional rates for 200-300 kV and merged rate for all existing facilities >300 kV
- The spreadsheet will show the impact to the baselines and alternative as a result of:
  - 1 or 2 additional PTOs
  - New regional transmission projects

The CAISO and PAC data series in the spreadsheet are the same ones used in the 10/23 issue paper examples.

- These TRR series can be viewed as reflecting “existing facilities” in the terms of the straw proposal
- The ISO recognizes that the CAISO data needs to be revised to reflect more recent changes from the latest comprehensive transmission plan
  - Will provide an updated version of the spreadsheet after the March Board meeting
- Data for PTO 1 and 2 are hypothetical and were chosen to represent PTOs half the size of CAISO and half the size of PAC, respectively
- Users may specify hypothetical data of interest for PTO 1 and 2

# *Demonstration of new PTO function*



## Instructions for specifying new PTO 1 and 2

- On the “Assumptions” tab enter the following hypothetical data for PTO 1 and 2
  - Year joined – no later than 2029
  - Hypothetical annual TRR for facilities 200-300 kV
  - Hypothetical annual TRR for facilities >300 kV
  - Gross load (MWh) for 2015 and average annual growth rate of gross load
  - Percentage of cost shares for the sub-regions (must add to 100%)
- On the “Summary” tab, the top set of graphs shows TAC rates under baselines 1 and 2 and alternative 1

# *Demonstration of new regional projects function*

## Instructions for adding “new regional facilities” planned under the expanded transmission planning process.

- On the “Assumptions” tab the user enters up to 10 new facilities, specifying the following components for each:
  - Project name
  - The year it will be placed in service
  - Total capital cost (\$ millions)
  - Transmission revenue requirements (TRR) as percent of capital cost (ISO suggestion = 15%)
  - Percentage cost shares for sub-regions (must add to 100%)
    - If a project is allocated to only one sub-region, the user should enter 100%
- On the “Summary” tab the lower set of graphs show TAC rates under Baseline 1 and Alternative 1 with the cost shares of new facilities included

# Next Steps

## Next steps ...

- March 9 working group on benefits assessment methodologies:
  - ISO requests stakeholders to bring suggestions for workable methods to measure benefits each sub-region receives from a transmission facility
- Comments due date is extended to March 23, to cover both the straw proposal and the March 9 working group meeting