

CAISO South Regional Transmission Plan for 2006 (CSRTP-2006)



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Objective

Develop an optimum regional transmission plan for the southern portion of the CAISO grid with participation from project sponsors and impacted PTOs by Q3, 2006: CAISO South Regional Transmission Plan (CSRTP-2006)



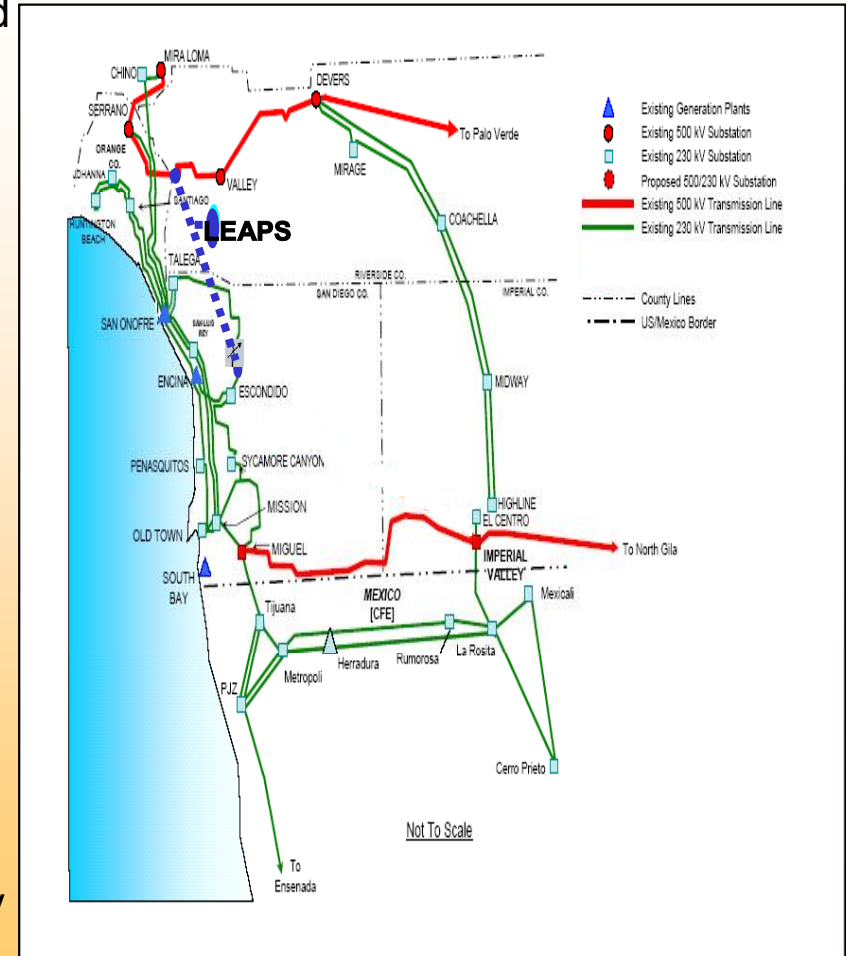
Background

- CAISO has been charged with Planning transmission expansion for its footprint
 - CAISO has been working on an implementation plan with PTOs and regulators
- CAISO has been requested to review and approve, based on need assessment, several major transmission expansion projects in the South on an expedited basis:
 - Tehachapi area transmission infrastructure project
 - Lake Elsinore Advanced Pumped Storage (LEAPS) project
 - Sunrise Powerlink/Green Path (Sun Path) project
- The proposed projects interconnecting to the CAISO Controlled Grid are in various stages of planning/design by their sponsors
 - There are correlations among these projects (some very strong) that preclude us from considering them in isolation
- CAISO intends to develop the CAISO South Regional Transmission Plan for 2006 (CSRTP-2006) based on current needs of the transmission system in the South and with consideration for all proposed projects
 - CAISO may consider new projects or alternatives for the proposed projects based on needs identification
- CAISO intends to present CSRTP-2006 to its Board for approval in Q3 2006



Major Transmission Proposals: LEAPS

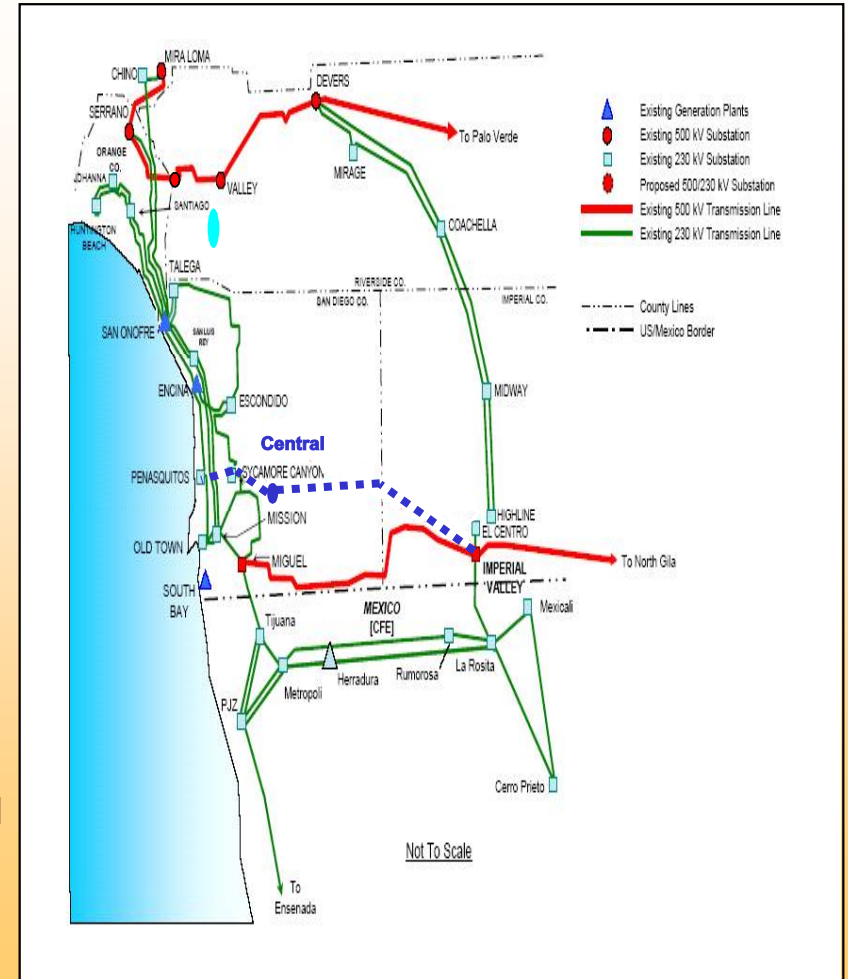
- Development of the Lake Elsinore Advanced Pump Storage (LEAPS) plant (in Southern California) and the associated transmission infrastructure that would connect this pumped storage facility to the SCE and SDG&E transmission systems
 - The line is proposed to be built in 2007 followed by the pumped storage plant (500 MW Gen/600 MW Pump) in 2009
 - Project sponsors have already filed the project at FERC based on an EPACT2005 provision which allows pumped storage power plants to be treated as “Advanced Transmission Asset”
- Purpose:
 - Meet SDG&E’s reliability needs (RMR/LRR)
 - Help CAISO electrical system reliability with operational flexibility, storage capability, etc.
 - Help provide benefits (water quality and firefighting services) to Elsinore Valley and surrounding communities
- Project Sponsors: The Nevada Hydro Company (TNHC) and Lake Elsinore Valley Municipal Water District (EVMWD)





Major Transmission Proposals: Sunrise Powerlink/Green Path Project (Sun Path)

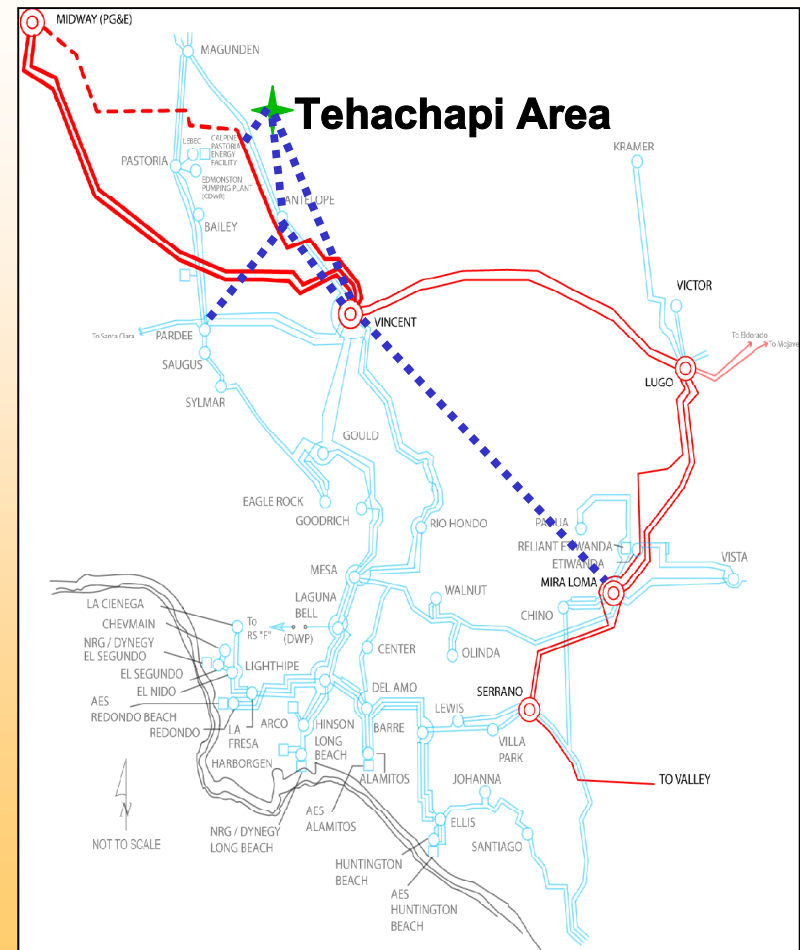
- Development of a 500 kV transmission link between the existing Imperial Valley (IV) sub and a proposed substation in Central San Diego County (“Central”) supplemented by 230 kV transmission upgrades from Central to substations in the San Diego area
 - This project is proposed by SDG&E, who would build the portion of the line and all substations in SDG&E service territory, and a consortium of Citizen Energy and IID who would build the line & substations in IID part
 - Partial CPCN has been filed with the CPUC
- Purpose:
 - Meet SDG&E reliability need (RMR/LRR)
 - Allow ~3000 MW of renewable resources (Solar & Geothermal) to reach energy customers in CAISO South area
 - Allow CPUC jurisdictional utilities (IOUs) to meet their RPS obligations for year 2010 and beyond
- Project Sponsors: SDG&E and Citizen’s Energy/Imperial Irrigation District





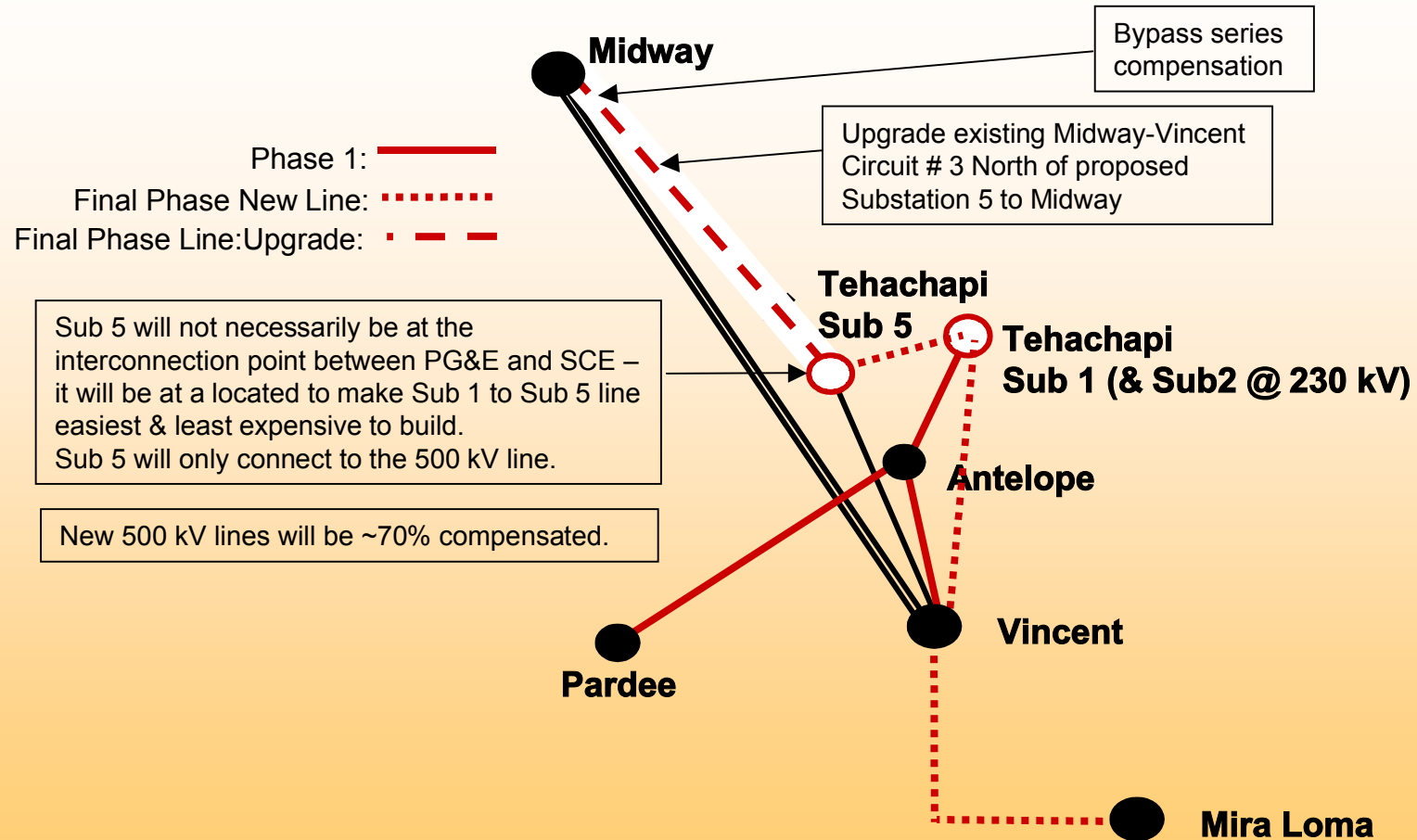
Major Transmission Proposals: Tehachapi Area Transmission Infrastructure

- Development of 500 kV transmission infrastructure in the Tehachapi area (between Midway and Vincent substations) with the goal of interconnecting wind generation currently developing in that area to SCE and PG&E transmission systems
 - The transmission infrastructure is to develop in advance of the wind generating plants
- Purpose:
 - Allow 4000+ MW of renewable resources (almost all wind) to reach energy customers in Northern and Southern parts of the CAISO footprint
 - Allow CPUC jurisdictional utilities (IOUs) to reach their RPS goals for year 2010 and beyond
 - Address reliability needs of CAISO South caused by congestion on Path 26
- Project Sponsors: SCE and PG&E, Wind Generation Developers





Proposed 500 kV Tehachapi Transmission Infrastructure In the Tehachapi Wind Resource Area





Major Transmission Proposals: Perceived Broad Correlations

Project	LEAPS	Sun Path
Tehachapi	<ul style="list-style-type: none"> LEAPS pumped hydro plant could help with predicted serious operational issues associated with the large volume of Tehachapi wind generation connecting to CAISO Controlled Grid 	<ul style="list-style-type: none"> Tehachapi transmission infrastructure, when combined with LEAPS transmission line, partially competes with Sun Path project in meeting the economics and RPS needs of SDG&E (and to a lesser extent, reliability needs)
LEAPS		<ul style="list-style-type: none"> LEAPS transmission line can compete with Sun Path Project, as it can, in conjunction with Tehachapi and PVD2 projects, help meet some of the reliability, economics and RPS needs of SDG&E LEAPS transmission line, in conjunction Sun Path Project, can help meet some of SCE's RPS goals using renewable resources in Salton Sea area



CAISO Planning Process Steps (1)

- Step 0: Form of study teams:
 - Form three (3) “Technical Project Teams (TPT)”, each led by the CAISO and staffed by the project sponsors and impacted PTOs for the three proposed expansion projects
 - Form a central “CAISO Coordination Team (CCT)” staffed by CAISO
- Step 1: Identify Needs Areas:
 - Reliability (including RMR and LRR)
 - Economics (cost/benefit)
 - RPS goals (meet the needs of both customers & renewable resources)
- Step 2: Develop Standards/Assumption:
 - Develop a single basecase for economic need/value evaluation as well as for reliability screening:
 - Uniform set of assumptions, loads/resources, system configurations, etc.
 - Develop appropriate basecases for local reliability considerations
 - Develop study approaches and scenarios based on system needs and individual projects

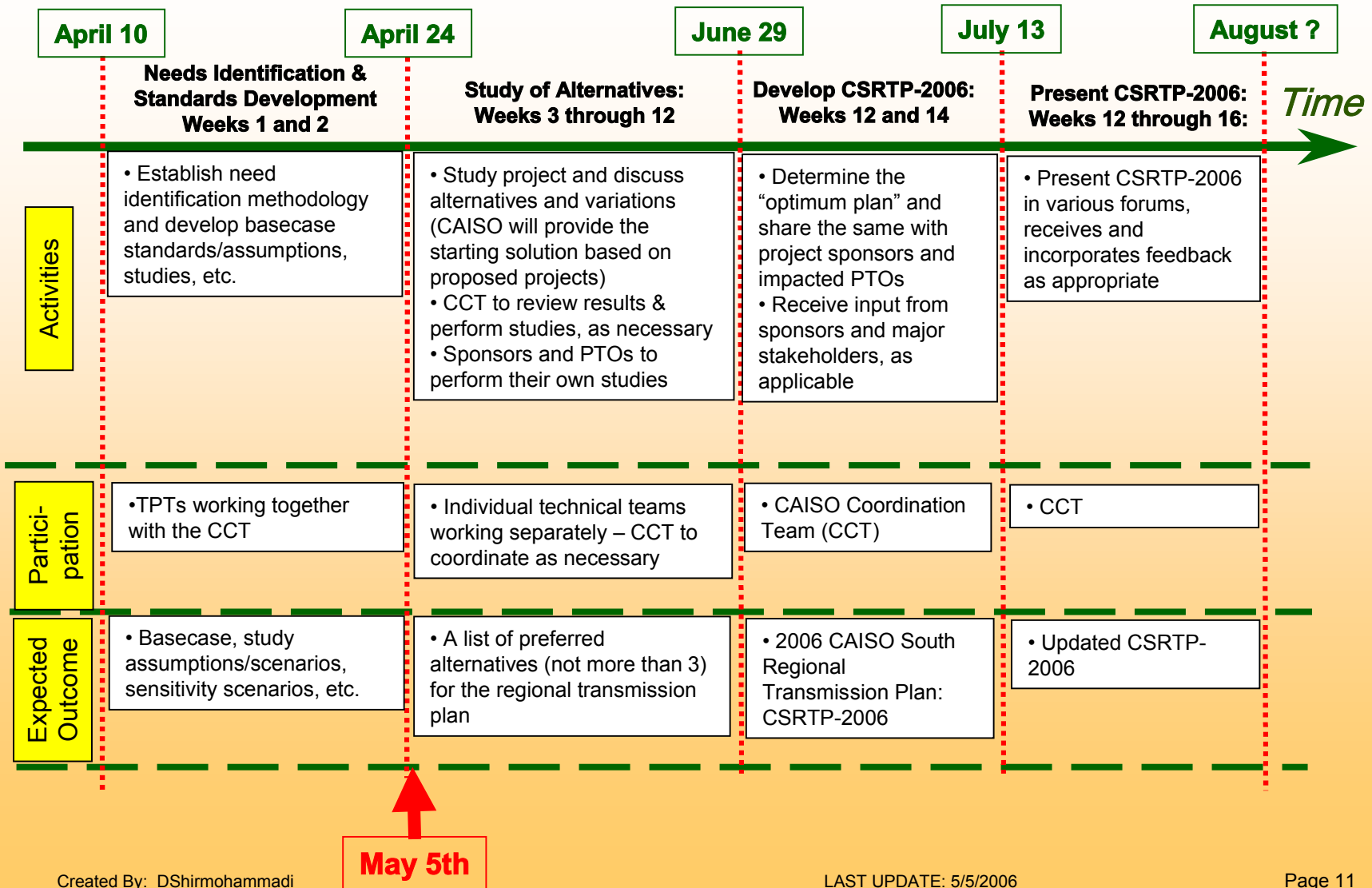


CAISO Planning Process Steps (2)

- Step 3: Perform Studies:
 - Study proposed projects and determine what combination provides the most value based on the identified benefits
 - Identify and quantitatively analyze the benefit of transmission variations and alternatives to the proposed projects
 - Strongly rely on available data and knowledge from proposed projects and judgment of planning engineers to pare down alternatives
 - Modify standards and assumptions across all projects, or for a specific project, as necessary, to help with the studies
- Step 4: Selection of Optimum Plan for 2006 (CSRTP-2006):
 - Focus on a number of highly valuable alternatives and select the best solution
- Step 5: Present CSRTP-2006 in various forums and incorporate feedback, as necessary and applicable
- Step 6: Present CSRPT-2006 to the CAISO board for approval



Development of CSRTP-2006: Original Timeline, Activities and Outcomes





Guiding Principles for CSRTP-2006 Process

- Perform studies based on data that can be shared on WECC level
- Keep all issues with the CAISO
- Focus on transmission studies and solution – will NOT
 - Study generation interconnections
 - Study path ratings
 - Identify generation or demand side alternatives
 - Identify alternative metering infrastructure
- Will not identify/study routing
- Provide opportunities to CSRTP-2006 participants to review and provide input to CAISO report
 - Allow “minority report” in the Board report
- Inform participants if a decision or a recommendation is based on privileged information



Concluding Remarks

- CAISO is implementing a new process to develop its regional plan for Southern California
 - This process is intended to place the focus on regional needs and benefits rather than individual project motivations
 - Stop conflicting interests from damaging the chances of developing a regional plan for Southern California and the needed transmission infrastructure
 - Make the planning process “manageable” and allow meeting the timelines necessary to approve and develop the necessary projects
- The proposed planning process is CAISO’s internal process to develop the CSRTP-2006 with technical input from project sponsors and impacted PTOs
 - This process will interface with the relevant stakeholder processes for wide reporting of its findings and conclusions and incorporating input
- This process is unprecedented at the CAISO and has a very aggressive timeline
 - Adjustments, slippages, and missteps should be expected
 - Places severe strain on human and facility resources of the CAISO and those of sponsors and impacted PTOs