



# Technical Steering Committee Report

CTPG Executive Committee Meeting  
April 7, 2011

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# AGENDA

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- General Update – Mo Beshir
- 2011 Phase 1 Work Plan, Stakeholder Comments and Responses – Jan Strack
- 2011 CTPG Work Plan – Mike Deis
- CTPG Website Improvements – Vijay Bangalore/Ben Brownlee
- Project Development Status Matrix – Gary DeShazo (Deferred to Next Meeting)
- 2011 Technical Steering Committee Technical Teams – Mo Beshir
- Senate Bill 2x1 – Mo Beshir
- Next Steps – Mo Beshir

# GENERAL UPDATE

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- TSC conducted conference calls and in-person meeting in March:
  - Reviewed 2011 Phase I Work Plan and made assignments
  - Reviewed Work Plan Scope of Work, Objectives, and Approach
  - Reviewed CTPG Website proposed improvements
- Received 5 written stakeholder comments and have prepared responses
- Reviewed SB 2x1
- Attended CERT meeting

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# **STAKEHOLDER COMMENTS AND RESPONSES – JAN STRACK**

# STAKEHOLDERS RESPONDS

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## CTPG's Proposed 2011 Work Plan

- CPUC staff
- Bay Area Municipal Transmission Group (BAMx)
- Eagle Crest Energy (ECE)
- Joyce Dillard

## CTPG's statewide plan and Phase 3 study report

- Save the Foothill Coalition (STFC)

# CPUC STAFF

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## Comments

- Use the four renewable development portfolios from CPUC's Long Term Procurement Plan (LTPP)
- CTPG and CAISO should use the same portfolios
- Use production cost simulations to establish fossil-fired dispatch pattern for power flow analysis
- Need better reporting of final fossil-fired dispatch pattern
- Investigate whether "high potential" transmission upgrades, in combination with alternative renewable development portfolios, would push the 22%-24% RPS estimate higher

## Proposed Response

- Take four portfolios under advisement – implications for both Phase 1 (net short) and Phase 2 (portfolios to study)
- Consider value of consistency across all Balancing Authorities (BAs), not just CAISO
- Considering whether, and how, to use output of production cost simulations for one set of power flow cases in Phase 2
- CPUC staff asked to provide specific proposal to improve reporting
- Assuming economic merit-order decrementing of fossil-fired generation, 22%-24% RPS results are insensitive to alternative renewable resource portfolios

# BAMx

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## Comments

- Pre-renewable power flow bases cases should only contain transmission upgrades that have:
  - Balancing Area Authority Approval
  - CPUC Approval if applicable, and
  - Other permitting agency approval is applicable (e.g., BLM)
- Supports use of CEC to update net short with an estimated range
- Use production cost modeling to establish fossil-generation decrements in with-renewable power flow cases

## Proposed Response

- Take regulatory/permit approval idea under advisement – difficult to implement for out-of-state upgrades
- Asks BAMx to suggest the “range” of net short
- Considering whether, and how, to use output of production cost simulations for one set of power flow cases in Phase 2

# EAGLE CREST ENERGY

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## Comments

- Include new generation supporting integration of intermittent renewables (e.g., pumped storage) in CTPG's studies
- New pumped storage could be an alternative to new transmission, such as to the West-of-Devers upgrades

## Proposed Response

- Will develop an approach for energy storage issues
- Amount of new integration generating capacity needed is uncertain
- Ask ECE to estimate how much new integration capacity needed
- Agree that in certain situations energy storage is an alternative to new transmission



# JOYCE DILLARD

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## Comments

- Reports by Southern California Leadership Council (SCLC) (former governors Davis & Deukmejian) and Southern California Association of Governments (SCAG) support use of “dirty” energy to rejuvenate California manufacturing
- Asks how energy will be supplied to meet demand growth

## Proposed Response

- SCLC and SCAG reports actually support economic growth by promoting green energy technologies and reducing greenhouse gas emissions
- Identified transmission upgrades will allow demand growth to be reliably met

# SAVE THE FOOTHILL COALITION

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## Comments

- Confirm that C3ETP project in CTPG's statewide plan was identified as "medium potential" on the basis of "judgment"
- Clarify the technical basis for identifying the C3ETP project in the Phase 3 study report
- Explain why, absent C3ETP, there were Path 15 overloads in pre-renewable case when flows were less than the path rating
- Explain basis for setting pre-renewable Path 15 flows near path rating
- How often have historical Path 15 flows been near path rating?
- What wires and non-wires alternatives to C3ETP were evaluated by CTPG

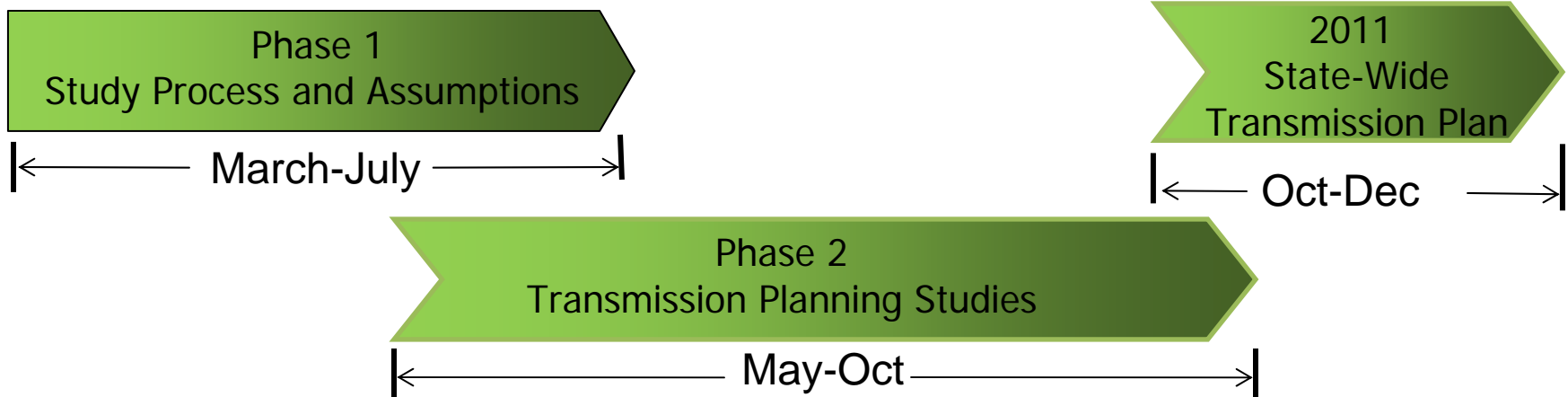
## Proposed Response

- C3ETP was designated as "medium potential" on the basis of engineering judgment
- Portions of C3ETP were added to allow with-renewables case to converge; other portions mitigated thermal overloads
- Phase 3 study report erroneously reported pre-renewable Path 15 overloads
- Pre-renewable Path 15 flows set near path rating to conform with NERC standards
- Provide historical path flow data for Path 15
- CTPG has decided that consideration of alternatives will be left to project sponsors

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# 2011 PHASE WORK PLAN – MIKE DEIS

# CTPG 2011 WORK PLAN



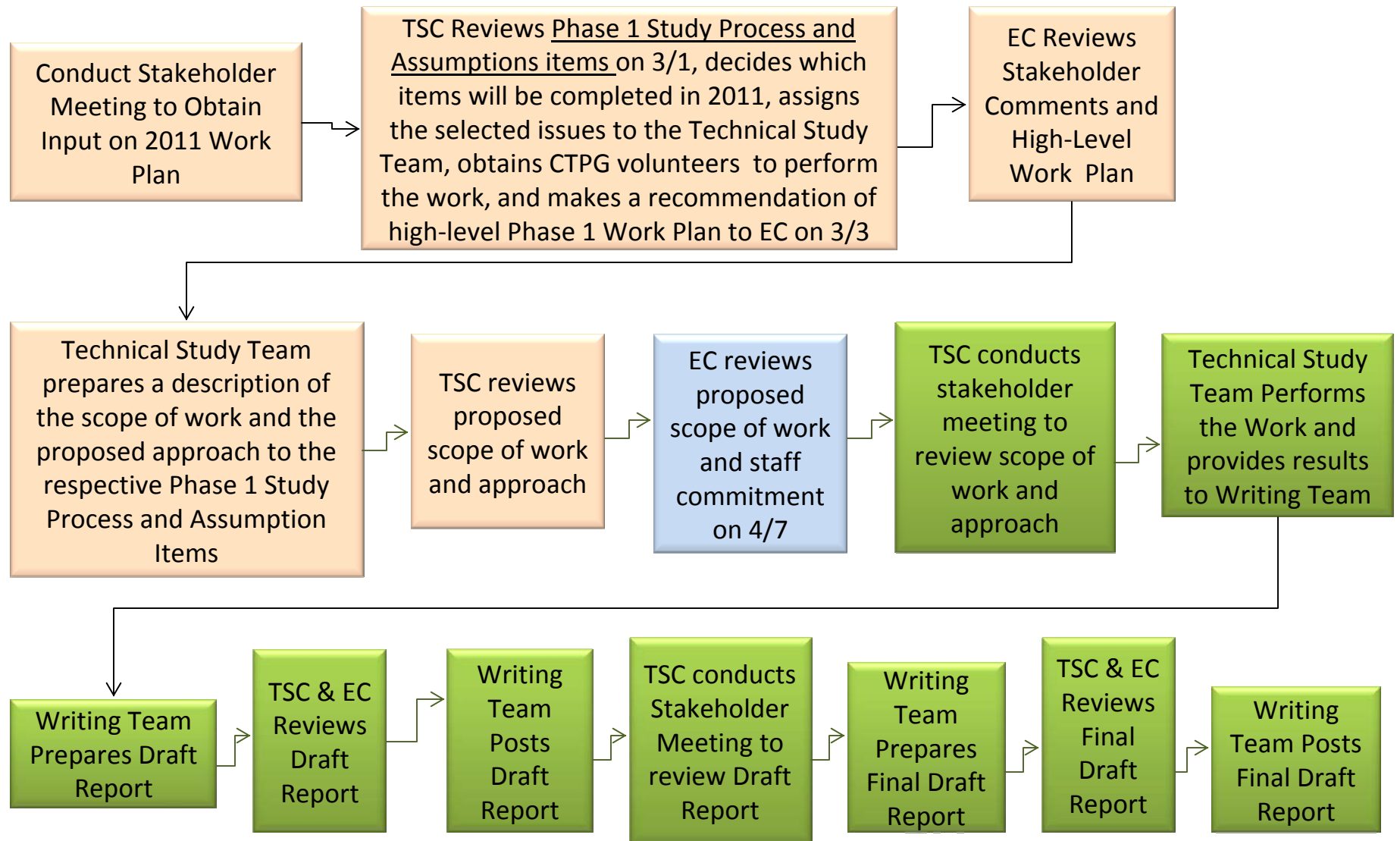
- Prepare Phase I Work Plan
- Determine Base Case Approach
- Verify Existing Renewables
- Incorporate OTC Assumptions
- Review Path Flow Assumptions Prior To Dispatch of Renewables

- Update Net Short
- Review Re-dispatch Methodology
- Review Dynamic Stability Study Approach
- Coordinate with TEPPC
- Develop an approach for Storage

- Prepare Phase II Work Plan
- Develop Renewable Portfolios/Scenarios
- Prepare Study Plan(s)
- Update Renewable Development Information
- Perform Studies
- Refine the Determination of the High and Medium Potential Transmission Needs and Corridors

- Identify 2011 State-Wide Transmission Plan Elements
- Identify 2011 Lessons Learned
- Begin Preparation of 2012 Work Plan

# PHASE 1 STUDY PROCESS AND ASSUMPTIONS



# VERIFY MODELING OF EXISTING RENEWABLES

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- Objective
  - To determine if the WECC 2020 HS Seed Case accurately reflects the type, amounts, and locations of existing and under-construction renewable energy resources as well as expected amounts of generation resources connected at the distribution level that are planned to be in-service by the end of 2011
- Approach
  - CTPG will review existing CEC data bases for existing resources
  - Review available data for expected distributed generation
  - Solicit input from CTPG members
  - Prepare change files if necessary to modify Seed Case

# INCORPORATE OTC ASSUMPTIONS

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- Objective
  - To determine the assumptions to be used in regard to the status of the OTC plants
- Approach
  - Review available data to compile information on local capacity requirement amounts and location of existing OTC generation
  - Determine which OTC plants should be modeled as repowered generation
  - Prepare change files to modify seed case

# REVIEW RE-DISPATCH METHODOLOGY

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- Objective
  - To establish an agreed upon approach for decrementing (re-dispatch) fossil-fired generation when uncommitted renewable resources are dispatched in the CTPG power flow cases
- Approach
  - The CTPG will develop a decrementing approach that considers both the economic merit-order of fossil-fired generation and the local reliability requirement needs for in-state and if information is available out-of-state local areas



# REVIEW PATH FLOW ASSUMPTIONS

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- Objective
  - To establish a CTPG agreed upon approach for path flow assumptions that will be used in the development of a CTPG foundation case and stress cases
- Approach
  - The CTPG will establish a criteria for identifying “historical” WECC path flow levels for use in creating the CTPG foundation case
  - The CTPG will also establish a criteria for developing study cases for “stressing” WECC path flow levels.

# UPDATE NET SHORT

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- Objective
  - To develop an agreed upon approach for developing a state-wide “net short” calculation
- Approach
  - CTPG Staff will meet with CEC staff to discuss their development of an equation for the calculation of a “net short” or range of “net short” and obtain expected values for each of the equation variables

# REVIEW DYNAMIC STUDY APPROACH

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- Objective
  - To develop dynamic stability time domain simulations that are dependable assessment tools for evaluating the potential impact of renewable resources on California's transmission system.
- Approach
  - The CTPG will identify an approach for when dynamic stability time domain simulations are appropriate and how should the proposed renewable resources be modeled.

# DEVELOP AN APPROACH FOR ENERGY STORAGE

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- Objective
  - To develop and agreed upon approach on how CTPG should proceed in addressing energy storage in future studies
- Approach
  - Develop a background on energy storage
    - ✓ WECC
    - ✓ CTPG members
  - Provide information on technology and system performance
  - Review AB 2514 requirements
  - Recommended approach for how to deal with storage in the 2011 CTPG Study Plan
  - Provide load adjustment recommendations and/or change files for use in base cases

# DETERMINED BASE CASE APPROACH

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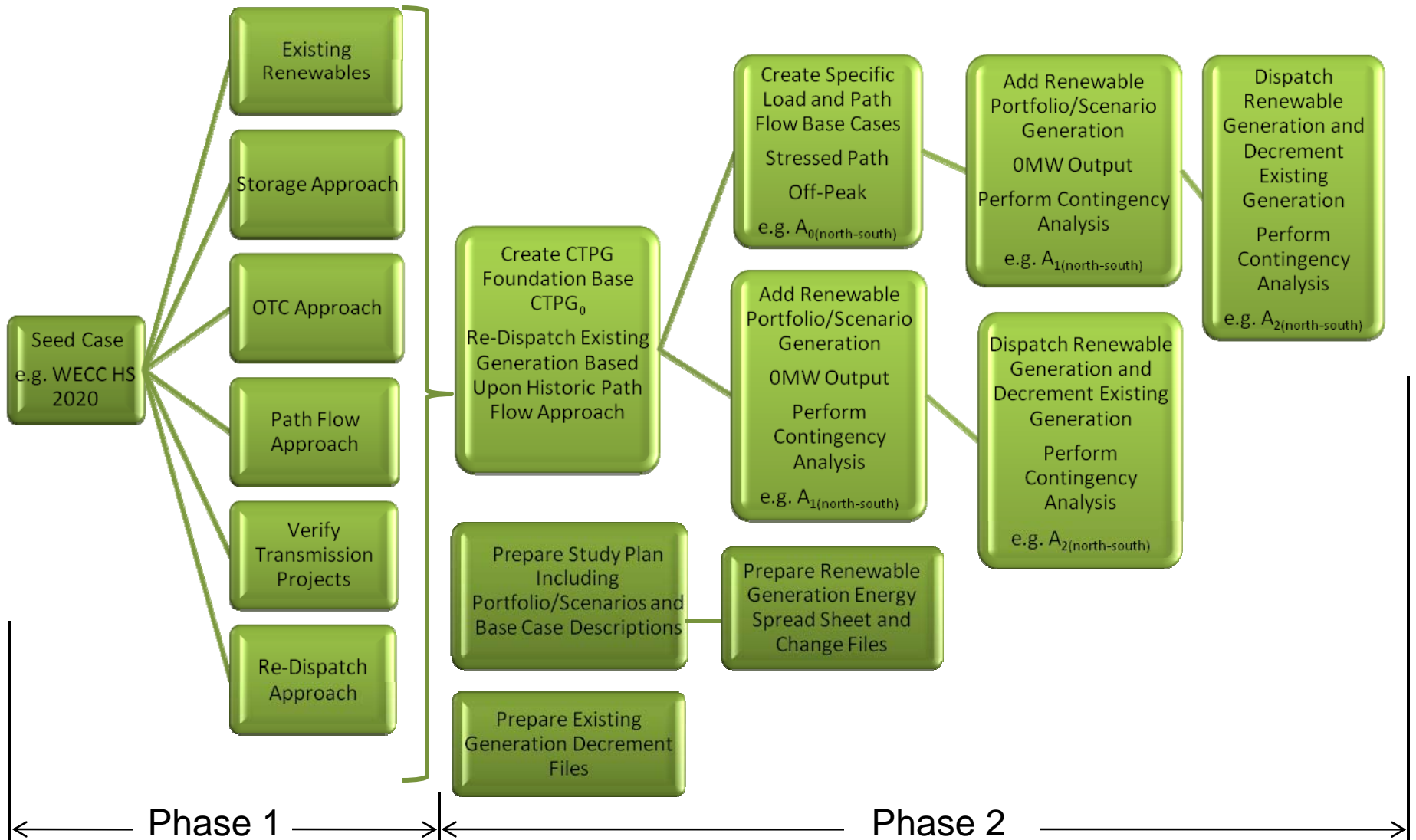
- Objective
  - To develop base cases that will be a dependable assessment tool for evaluating the potential impact of renewable resources on California's transmission system.
  - To develop an approach for utilizing consistent contingency files among the cases to determine any pre-renewable dispatch reliability criteria violations.
- Approach
  - Utilizing the WECC 2020 HS Seed Case
    - ✓ Ensure that the Seed Case does not contain thermal overloads that cannot be attributed to local load growth
    - ✓ Review bulk power voltages to ensure they remain within acceptable operating ranges

# DETERMINE BASE CASE APPROACH

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- Approach (Cont.)
  - Utilize WECC 2020 HS Seed Case
    - ✓ In the Pre-renewable case, ensure all WECC path flows do not exceed their maximum ratings.
    - ✓ Ensure non-distributed solar PV is explicitly modeled using type 4 GEWTG model per WECC recommendation.
    - ✓ Ensure the latest IPP DC model is included.
    - ✓ Provide change files for modification of seed case
  - Include only planned transmission facilities that have received the following approvals.
    - ✓ POU
      - POU and BA approval
      - NOP/NOI Completed (?)
    - ✓ IOU
      - CAISO Board Approval
      - NOP/NOI Completed (?)
    - ✓ Independents
      - BA Approval
      - NOP/NOI Completed (?)

# CTPG STUDY CASE DEVELOPMENT



# COORDINATE WITH TEPPC

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- Objective
  - To coordinate WECC wide transmission planning with other sub-regional planning groups
- Approach
  - Participate at the TEPPC committee levels



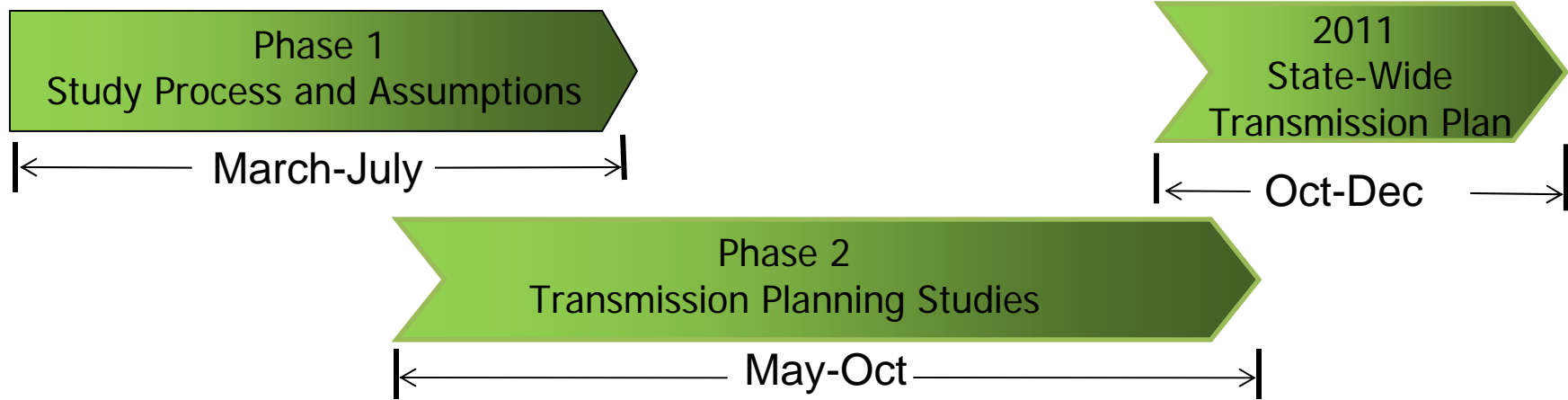
# PHASE 1 WORK PLAN SCHEDULE

PHASE 1 STUDY PROCESS AND ASSUMPTIONS			
Task Description	Duration	Planned Start	Planned Finish
TSC Meeting to Discuss Objective, Approach and Resources	0 days	3/28/2011	3/28/2011
Send out Stakeholder Meeting Notice	0 days	4/8/2011	4/8/2011
Exec Meeting to Approve Approach and Resources	0 days	4/7/2011	4/7/2011
Conduct Stakeholder Mtg	0 days	4/19/2011	4/19/2011
Complete Scope of Work	15 days	4/13/2011	5/3/2011
Prepare Draft Report	7 days	5/4/2011	5/12/2011
Executive Committee Meeting	0 days	5/5/2011	5/5/2011
Draft Report to TSC	0 days	5/12/2011	5/12/2011
TSC Review of Draft Report	4 days	5/13/2011	5/18/2011
TSC Meeting to Discuss Report	0 days	5/18/2011	5/18/2011
Final Draft of Report	3 days	5/24/2011	5/26/2011
Exec Meeting to review report	0 days	6/2/2011	6/2/2011
Stakeholder Meeting	0 days	6/14/2011	6/14/2011
Final Draft of Reports	10 days	6/28/2011	7/11/2011

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# 2011 CTPG PHASE 2 WORK PLAN

# CTPG 2011 WORK PLAN



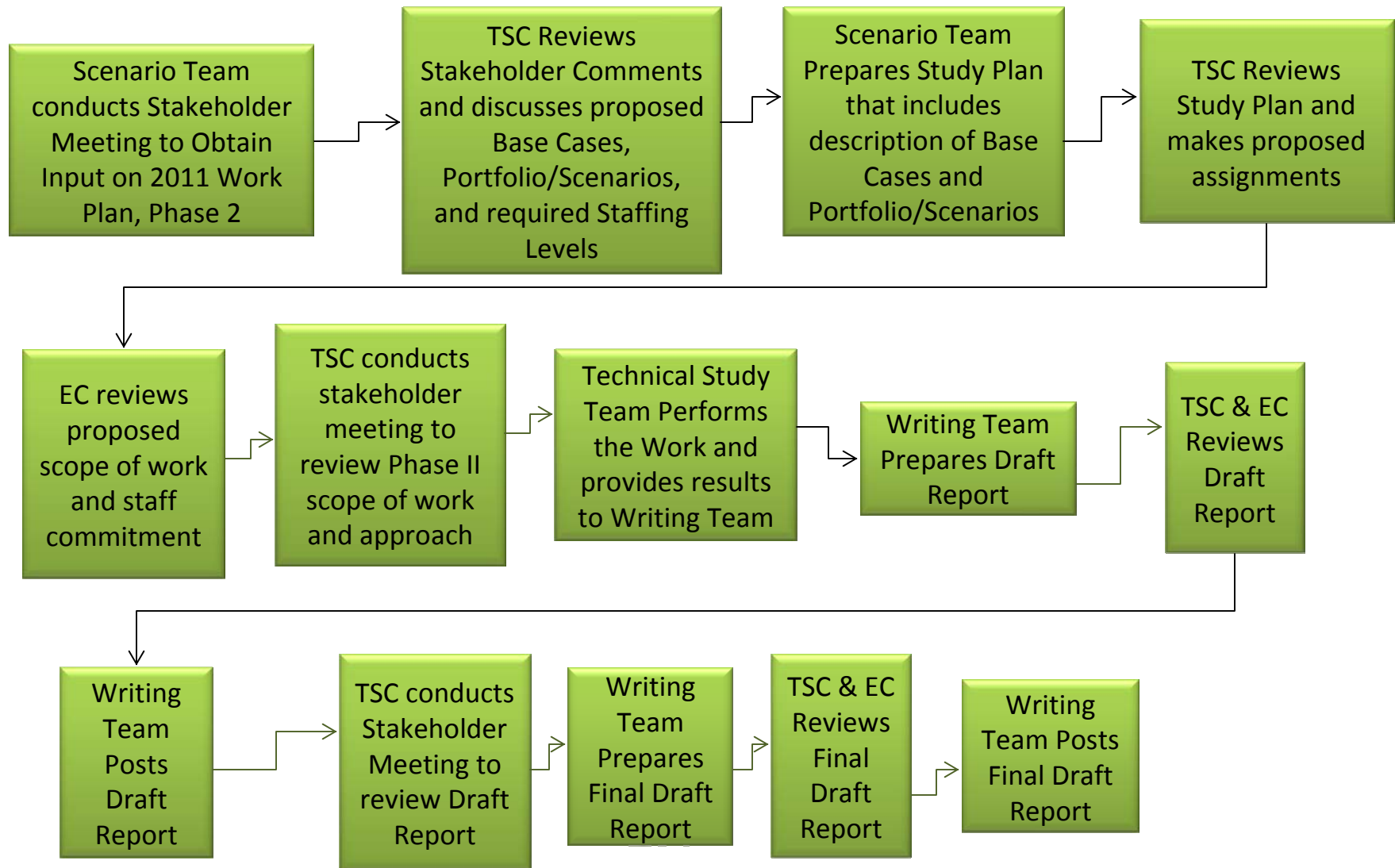
- Prepare Phase I Work Plan
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- Review Dynamic Stability Study Approach
- Coordinate with TEPPC
- Develop an approach for Storage

- **Prepare Phase II Work Plan**
- **Develop Renewable Portfolios/Scenarios**
- **Prepare Study Plan(s)**
- **Update Renewable Development Information**
- **Perform Studies**
- **Refine the Determination of the High and Medium Potential Transmission Needs and Corridors**

- Identify 2011 State-Wide Transmission Plan Elements
- Identify 2011 Lessons Learned
- Begin Preparation of 2012 Work Plan

# PHASE 2 STUDY PLAN



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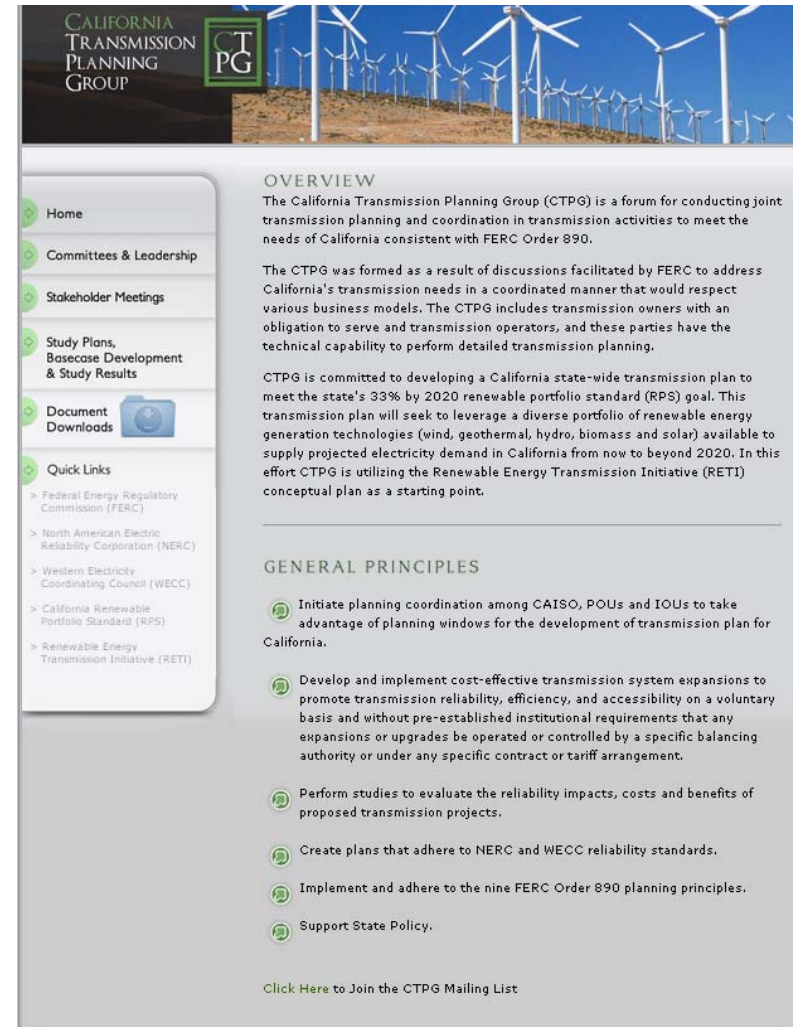
# **CTPG WEBSITE IMPROVEMENTS**

## **– BEN BROWNLEE**

# WEBSITE IMPROVEMENT

Target Areas of Improvement:

1. "Contact Us" Feature
2. Stakeholder Feedback Feature
3. Tracking Stakeholder Comments
4. Frequently Asked Questions
5. Project Status List
6. Archive 2010 Documents
7. CTPG Committees



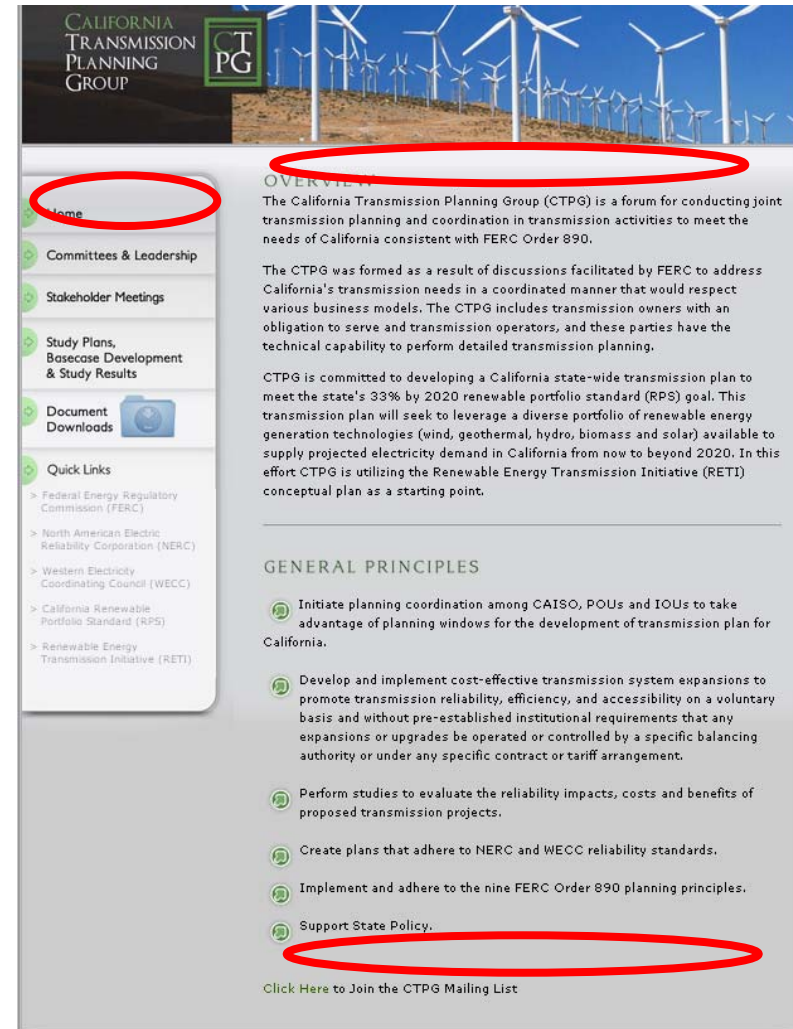
# WEBSITE IMPROVEMENT – “CONTACT US”

## CURRENT FEATURE(S)

Full-Time “Join CTPG Mailing List” Link on “Home” & “Stakeholder Meetings” pages

## PROPOSED FEATURE(S)

Adding a Full-Time “Contact Us” Link on “Home” page (used for general, non-technical questions)



# WEBSITE IMPROVEMENT – FEEDBACK

## CURRENT FEATURE(S)

- Temporary “Stakeholder Feedback” Link – open for specific (announced) time periods and close all other times.

## PROPOSED FEATURE(S)

- Permanent/Full-Time “Stakeholder Feedback” Link (meant to encourage open communications and transparency)





# WEBSITE IMPROVEMENT – TRACKING

## CURRENT FEATURE(S)

- Automated e-mail delivery to CTPG response coordinator
- Drafts/Responses distributed via e-mail

## PROPOSED FEATURE(S)

Improving the process for tracking & responding to stakeholder feedback:

- Docket Numbering system
- Centralized Storage Location for draft/unfinished records

The screenshot shows the CTPG website's feedback form. The header features the CTPG logo and a background image of a power line construction site. The left sidebar contains navigation links: Home, Committees & Leadership, Stakeholder Meetings, Study Plans, Basecase Development & Study Results, Document Downloads, and Quick Links. The main content area is titled 'Feedback Form' and includes a 'Please Note' section with instructions on attachment size and format. Below this are input fields for Name, E-mail, Subject, and Message. The Attachments section has a 'Choose File' button and a 'No file chosen' status, which is circled in red. A 'Send' button is located at the bottom right of the form, and a '[ Back ]' link is at the bottom left.

# WEBSITE IMPROVEMENT – FAQ

## CURRENT FEATURE(S)

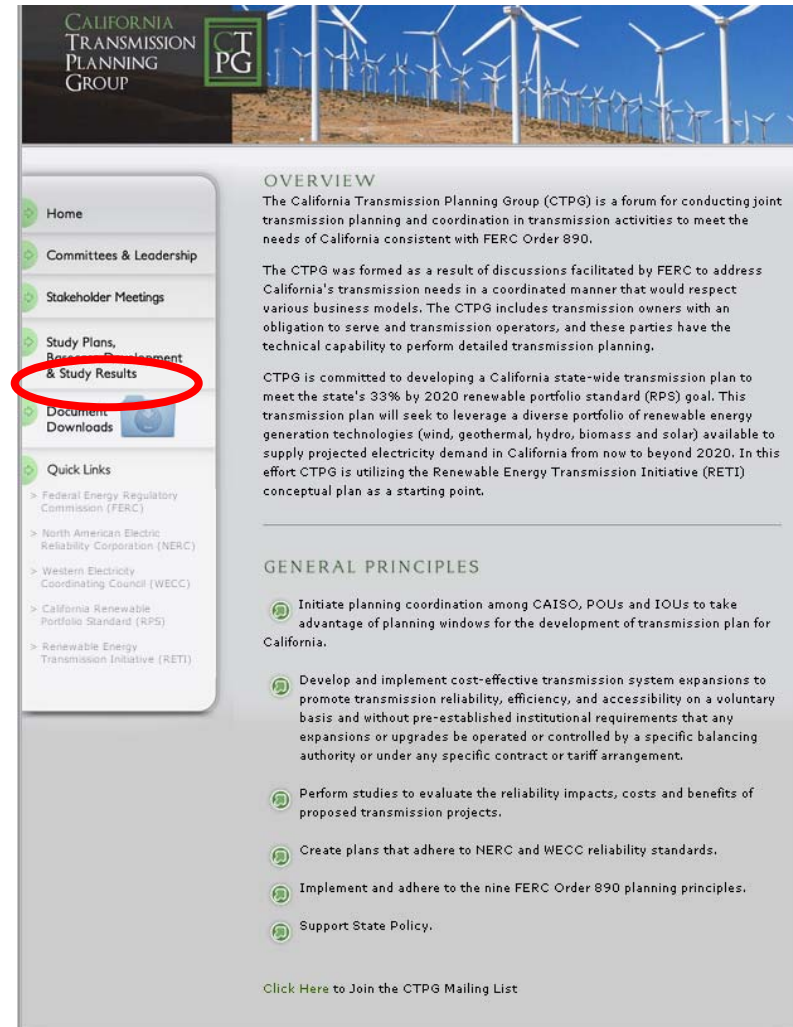
N/A

## PROPOSED FEATURE(S)

FAQ Webpage to address common questions, i.e.:

- How does the CTPG coordinate with TEPPC?

- Will the CTPG include the political reality in its 2011 studies?



# WEBSITE IMPROVEMENT – PROJECTS

## CURRENT FEATURE(S)

N/A

## PROPOSED FEATURE(S)

### Project Status List\*, i.e.:

- In Service Date
- Project Status
- Project Timelines
- Why projects(s) were put in the basecase(s)

\*this feature would complement the Study Plans and Reports

### STUDY PLANS, BASECASE DEVELOPMENT & STUDY RESULTS

#### Feedback:

Please provide feedback via the link below:



If you'd like to get a CTPG base case, there are:

[Instructions for Requesting/Obtaining CTPG Base Cases](#) (click link).

#### Study Schedules:

- [Revised Phase 4 Schedule](#) (as of November 19, 2010)
- [Phase 3 Schedule](#) (as of August 6, 2010)

#### Study Plans and Reports:

- [Final Statewide Transmission Plan](#) (February 9, 2011)
- [Final Draft Phase 4 Study Report](#) (February 2, 2011)
- [Final Draft Statewide Transmission Plan](#) (February 2, 2011)

# WEBSITE IMPROVEMENT – ARCHIVING

## CURRENT FEATURE(S)

N/A. All documents are current on the website in a huge list.

## PROPOSED FEATURE(S)

Archived Documents webpage

- Storage of old documents (by year) to reduce the clutter in the other webpages.



# WEBSITE IMPROVEMENT – COMMITTEES

## CURRENT FEATURE(S)

- Companies represented on the Executive Committee
- Executive Committee Leadership (Chair, Vice Chair, Secretary)
- Technical Steering Committee Leadership (Chair, Vice Chair, Secretary)

## PROPOSED FEATURE(S)

- Any additional CTPG committees and/or sub-committees.

### COMMITTEES & LEADERSHIP

#### CTPG Executive Committee:

- California Independent System Operator (ISO)
- Imperial Irrigation District (IID)
- Los Angeles Department of Water and Power (LADWP)
- Pacific Gas and Electric (PG&E)
- Southern California Edison (SCE)
- Southern California Public Power Authority (SCPPA)
- San Diego Gas and Electric (SDG&E)
- Sacramento Municipal Utility District (SMUD)
- Transmission Agency of Northern California (TANC)
- Turlock Irrigation District (TID)
- Western Area Power Administration (Western)

#### CTPG Leadership (alternate between POU & IOU):

##### Executive Committee

- Chair: Jim Avery (SDG&E)
- Vice Chair: Jim Shetler (SMUD)
- Secretary: PJ Martinez (PG&E)

##### Technical Steering Committee

- Chair: Mo Beshir (LADWP)
- Vice Chair: Pat Arons (SCE)
- Secretary: Gary DeShazo (ISO)

# WEBSITE IMPROVEMENT

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## CONCERNS

- Who should receive CTPG Mailing List requests?  
(currently PG&E—Ben Brownlee & Janet Era)
- Who will coordinate CTPG's responses to technical inquiries?  
(currently SDG&E—Jan Strack)
- Who will receive/coordinate responses to general inquiries?  
(proposed: Mo Beshir and Jan Strack)

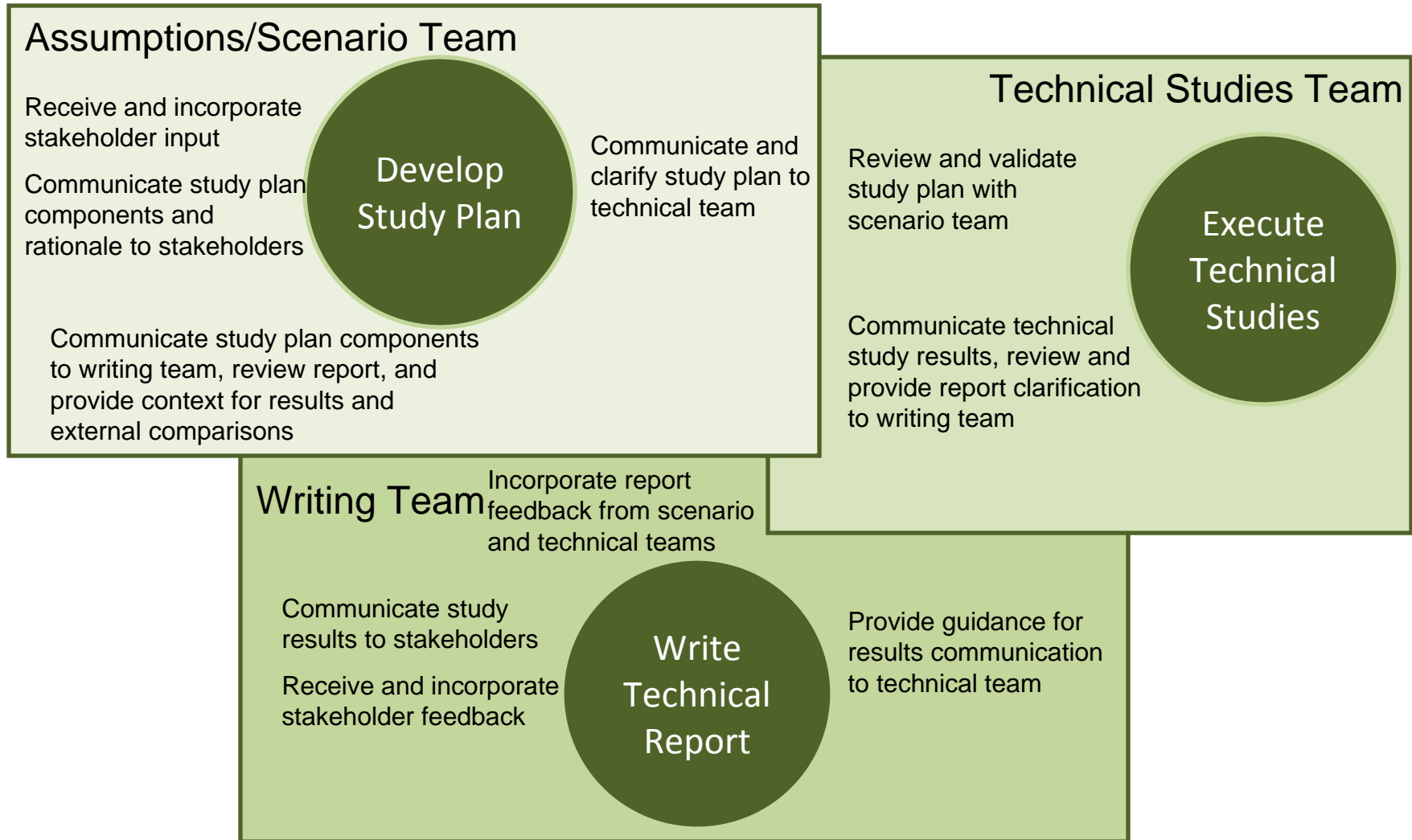
## TIMELINE

- Requires 40 man-hours to coordinate changes/updates

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# **2011 TECHNICAL STREEING COMMITTEE TECHNICAL TEAMS – MO BESHIR**

# TECHNICAL STEERING COMMITTEE TEAMS





# TECHNICAL STEERING COMMITTEE TEAMS

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- Scenario Team
  - Team leader and team members need to assemble in approximately 2 weeks
- Writing Team
  - Existing team is responding to stakeholder comments
  - Team leader and team members need to assemble in approximately 2 weeks
- Technical Studies Team
  - Phase I work is under the leadership of TSC members
  - Team leader and team members need to assemble in approximately 3 to 4 weeks

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# SENATE BILL 2X1 SUMMARY – MO BESHIR

# SENATE BILL 2X1

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## 2020 Renewable Energy Resources % of 33% RPS

	Instate	Out-of-State	TRECs
Option 1	75	25	0
Option 2	75	15	10
Option 3	100	0	0

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## NEXT STEPS – MO BESHIR

# NEXT STEPS

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- Finalize and Post 2011 Phase 1 Work Plan
- Post CTPG Responses to Stakeholder Comments on Phase I Work Plan
- Conduct Stakeholder Meeting to review Phase 1 Work Plan
- Prepare Phase II Work Plan
  - Notice Stakeholders of Phase II Stakeholder Meeting
- Obtain recommendations from Executive Committee on TSC Technical Teams: Scenario, Writing, and Technical Studies teams



Thank you!

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