CTPG Stakeholder Meeting
Revised Draft 2010 Phase 4 Study Plan

October 20, 2010

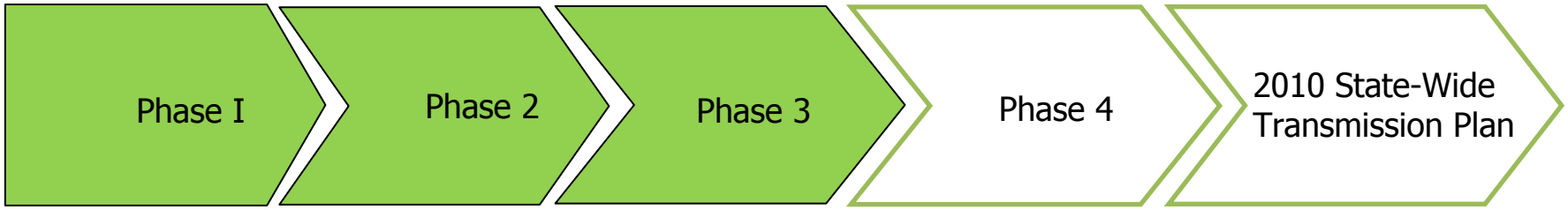
MEETING INTRODUCTION – MO BESHIR
CTPG TECHNICAL STEERING COMMITTEE CHAIRPERSON

Agenda

Meeting Opening	2:00 – 2:05	Mo Beshir
Review Agenda	2:05 – 2:10	Mo Beshir
2010 CTPG Study Progress		
Review of Phase 3 Recommendations	2:10 – 2:15	Mike Deis
Analysis of Phase 3 High Potential Transmission Elements	2:15 – 2:20	Jan Strack
Analysis of High Interest Renewable Energy Zones	2:20 – 2:25	Mike Deis
West of the River Stress Scenario	2:25 – 2:35	Jan Strack
2010 California State-Wide Transmission Plan	2:35 – 2:40	Mo Beshir
Phase 4 Schedule	2:40 – 2:45	Mike Deis
Stakeholder Q&A	2:45 – 3:55	Mike Deis
Meeting Wrap-up	3:55 – 4:00	Mo Beshir

CTPG 2010 STUDY PROGRESS – MO BESHIR

CTPG 2010 Study Progress



Phase I

- Development of the CTPG membership
- Development of the CTPG 2010 Stakeholder and Study process
- Load Serving Entity Scenario

Phase 2

- Stakeholder recommended Generation Queue
- RETI recommended Heavy In State Scenario
- RETI Net Short
- Analysis of Stakeholder Alternatives
- Stakeholder recommended Northwest and Southwest Scenarios

Phase 3

- RETI Best CREZ Scenario
- Analysis of Stakeholder Alternatives
- Fall off-peak scenario
- Identification of High Ranked CREZs
- Identification of High and Medium Potential transmission elements

Phase 4

- Analysis of progress towards a 33% RPS
- Assess potential for increased out-of-state imports and potential impact on state-wide transmission plan
- Finalize 2010 Study High and Medium Potential transmission elements

2010 State-Wide Transmission Plan

- Identification of state-wide transmission plan elements
- 2010 Lessons Learned
- Begin preparation of 2011 Study Plan

REVIEW OF PHASE 3 RECOMMENDATIONS – MIKE DEIS

Phase 3 Study Summary

- In Phase 3, based upon the studies performed in Phases 1-3, the CTPG decided to take a **two step** approach to develop the 2010 statewide transmission plan.

  Step 1: Identified "High and Medium Potential" Transmission Elements

  A. Ranked CREZs using commercial interest and environmental assessment

  CPUC Discounted Core

  - PPA under CPUC review by 6/1/2010
  - Permit application data adequate by 3/1/2010
  - POU contracts not included

  CTPG Queue Portfolio

  - In process of signing IA by March 2010
  - Posted financial security in ISO Cluster process
  - 3000 MW of non-ISO Queue generation

Phase 3 Study High Ranking CREZs

CREZ	Core in Queue by Technology	Discounted Core (GWh)	Gen Queue (GWh)	RETI Environmental Score
Mountain Pass	81%	1086	1518	3.5
Pisgah	100%	1047	1867	4
Tehachapi	100%	5887	13934	4.6
Riverside East	100%	560	5615	5.1
San Diego South	0%	149	939	5.5
Kramer	0%	617	652	5.9
Carrizo South	86%	1562	1789	6.6
Nevada C	0%	1239	2209	n/a
Oregon	0%	1362	0	n/a
Solano	100%	102	1452	7.6
San Bernardino – Lucern	0%	96	0	7.7
Imperial South	70%	1095	4691	7.8
Palm Springs	100%	241	624	8
Round Mountain - B	100%	227	253	8.4

High and Medium Potential Transmission Upgrades

Note: Additional High and Medium Potential Transmission Upgrades may be added as a result of planned studies of increased renewable resource development in northern California and the Pacific Northwest.

New Substations

- Existing
- High Potential
- Medium Potential

New Lines

- High Potential
- Medium Potential

Phase 3 Study Conclusions

- High and medium potential transmission upgrades provide a foundation for the state wide-plan to support a 33% RPS
- Transmission needs identified in Phase 3 studies predominately focused on CREZs with the high commercial activities (mostly in S CA) and low environmental impacts
  - Information on non-IOU Power Purchase Agreements (PPAs) was not incorporated in CPUC IOU discounted core

Phase 3 Study Summary

Step 2: Final Analysis and Completion of 2010 State-Wide Transmission Plan

- Analyze the progress made towards the states 33% RPS goal by the proposed "High Potential" transmission elements.

- Assess the potential opportunities of increased out-of-state imports to determine their potential impact on the 2010 state-wide transmission plan.

PHASE 4 ANALYSIS OF PROPOSED HIGH POTENTIAL TRANSMISSION ELEMENTS – JAN STRACK

Phase 4 Analysis of High Potential Transmission Elements

- Perform a power flow analysis that includes the proposed "high potential" transmission upgrades from the Phase 3 Study.
  - Case A: 2020 Northern California adverse weather (1-in-10 Northern California peak coincident with an approximate Southern California 1-in-2 peak) case
  - Case B: 2020 Southern California adverse weather (1-in-10 Southern California peak coincident with an approximate Northern California 1-in-2 peak) case
  - Case F: 2020 California Autumn morning, light load

Phase 4 Analysis of High Potential Transmission Elements

- Estimate the amount of renewable sources that can be dispatched without any contingency-based thermal overloads.
- This analysis is not intended to imply a likelihood that development of the modeled renewable resources will occur.
- Uses same power flow approach as CTPG's Phase 1, 2 and 3 analysis. (e.g., limited to a few on-peak/off-peak snapshots, no CAISO "deliverability" analysis, no economic determinations)
  - **Results should be interpreted accordingly**

ANALYSIS OF HIGH INTEREST RENEWABLE ENERGY ZONES AND ASSOCIATED TRANSMISSION PLANNING– MIKE DEIS

Phase 4 Study Plan

- CTPG 2010 California State-Wide Transmission Plan Phased Approach:
  - Phase 3 High Commercial Interest CREZs
    - High and Medium Potential Transmission Elements
  - Phase 4 High Interest REZs and associated transmission
    - Assess the potential opportunities of increased out-of-state imports to determine their potential impact on the 2010 state-wide transmission plan.
      - Leverage existing CTPG power flow studies
      - Perform additional CTPG power flow study(ies), if required

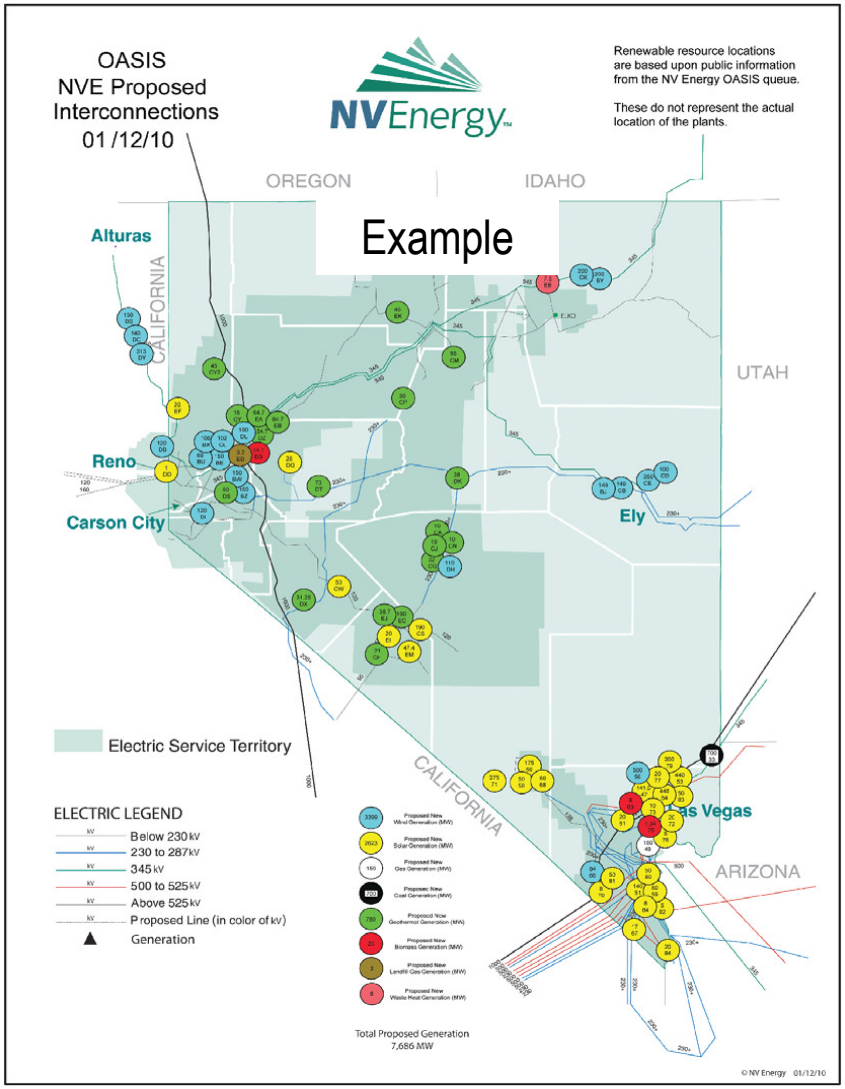
Phase 4 Study Plan

- CTPG will analyze the development status of renewable energy zones in NV, AZ, NM, and Pacific NW.

- CTPG will analyze the existing transmission planning associated with the renewable energy resource delivery to California

- CTPG will not be determining the likelihood that any particular project will be developed

Phase 4 Study Plan



Example

Company (v)	Application Date (viii)	Max. MW Summer/Winter (i)	County/State (ii)	Point of Interconnection (iii)	Project In Service Date (iv)	Type ER or NR (vi)	Type (ix)
Sierra Pacific Power Interconnection Requests							
Company BE	8/29/2005	150	Washoe/NV	Eagle Sub	12/31/2011	NR	wind
Company BJ	3/13/2006	149	White Pine/NV	230kV Gonder	12/1/2009	NR	wind
Company BS	9/27/2006	150	Lassen/CA	Alturas 345kV	11/1/2009	ER/NR	wind
Company BW	1/5/2007	150	Lyon/NV	Dove Sub	12/31/2011	ER/NR	wind
Company BY	4/16/2007	202	Elko/NV	Mdpt-Vmy 345kV	12/31/2011	ER/NR	wind
Company BZ	3/29/2007	150	Lyon/NV	Dove Sub	12/31/2012	ER/NR	wind
Company CA	5/9/2007	10	Nye/NV	Big Smoky Vly	12/31/2007	ER/NR	geothermal
Company CE	7/10/2007	250	White Pine/NV	Gonder Sub	9/1/2010	ER/NR	wind
Company CH	8/20/2007	21	Esmeralda/NV	Silver Pk Sub	9/1/2012	NR	geothermal
Company CJ	8/29/2007	10	Nye/NV	Big Smoky Vly	9/1/2008	ER	geothermal

“WEST OF THE RIVER STRESS” SCENARIO – JAN STRACK

Phase 4 Study Plan

- At the conclusion of Phase 3, CTPG stakeholders requested additional studies of much larger amounts of imported renewable energy resources via southern Nevada and western Arizona.
- At the request of the CTPG, RETI has provided the "West of the River Stress" Scenario.

Phase 4 Study Plan

- West of River Stress Scenario
  - Net Short same as Phase 2 and Phase 3, (52,764 GWh)
  - Discounted Core
    - PPA under CPUC review
    - Permit application data adequate
    - POU contracts not included
  - Additional Southwest Out-of-State Imports
    - Assumed additional imports from NV, AZ, NM and WY
    - Solar/Wind
  - Remaining energy to meet net short from California RETI Best CREZs
    - RETI Phase 2B CA CREZs with best economic/environmental scores

Phase 4 Study Plan

West of the River Stress Scenario Summary

Resource	GWh/year	%Total
Discounted Core	20,905	40%
Additional Southwest Out-of-State Imports	21,106	40%
California RETI Best CREZs	10,753	20%
Totals	52,764	100%

Phase 4 Study Plan

Additional Southwest Out-of-State Imports

Resource	GWh/year	%Total
Eldorado	10,553	50%
Palo Verde	7,915	37.5%
North Gila	2,638	12.5%
Totals	21,106	100%

Phase 4 Study Plan

- West of River Stress Scenario
  - ➢ Proposed Study Cases
    - Case A: 2020 Northern California adverse weather (1-in-10 Northern California peak coincident with an approximate Southern California 1-in-2 peak)
    - Case B: 2020 Southern California adverse weather (1-in-10 Southern California peak coincident with an approximate Northern California 1-in-2 peak)
  - ➢ Decrementing Fossil Fuel (Re-dispatch) Approach
    - Heat Rate, highest heat rate first
    - Respect local capacity area requirements and “must run” generation
    - 70%/30% split In-State/Out-of-State
    - All other analysis methods, grid configuration, reliability same as previous study phases.

CTPG 2010 CALIFORNIA STATE-WIDE TRANSMISSION PLAN – MO BESHIR

Statewide Transmission Plan Outline

- CTPG Study Process
  - Phases 1 thru 4
- California BAA's status for renewable resource transmission planning
- 2010 California State-Wide Transmission Plan
  - CTPG High and Medium transmission elements
- Lessons Learned from the 2010 Study
- 2011 Study Plan Preparation

CTPG SCHEDULE OVERVIEW – MIKE DEIS

CTPG 2010 Phase 4 Schedule

Date	Item
Sept 23	Draft Phase 4 Study Plan posted
Sept 30	Stakeholder call to review and collect input for Phase 4 Study Plan
Oct 7	Stakeholder comments due for Phase 4 Study Plan
Oct 14	Revised draft Phase 4 Study Plan posted. Phase 4 Scenario due
Oct 20	Stakeholder call to review and collect input for revised Phase 4 Study Plan
Oct 27	Stakeholder comments due for revised Phase 4 Study Plan
~Nov 22	Draft Phase 4 Study Report posted. Draft 2010 State-Wide Transmission Plan posted
~Dec 1	Stakeholder meeting to discuss Phase 4 Study Report and State-Wide Transmission Plan.
~Dec 10	Stakeholder comments due.
~Dec 20	Final Phase 4 Study Report posted. Final 2010 Transmission State-Wide Transmission Plan posted.

STAKEHOLDER INPUT – MIKE DEIS

Thank you for your input and attendance