CalWEA Comments on the CTPG Phase 2 Study Results and Phase 3 Study Plan

California Wind Energy Association (CalWEA)
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We continue to strongly support the technical role that the CTPG is playing in helping its member planning authorities to proactively plan for the transmission that will be necessary to achieve the state's renewable energy objectives. We especially appreciate the CTPG's receptiveness to input from stakeholders and particularly its recognition that it should focus on producing a conceptual transmission plan based on the principles of "least regrets" transmission planning. The CTPG Phase 1 plan that primarily included bulk system components reflected an embracement of that concept, as Least Regrets Transmission Plan (LRTP) would focus primarily on bulk system upgrades.

The report states, on page 15, "Phases 2 and 3 use increasingly refined scenarios, and add new scenarios, to test the sensitivity of earlier study results to changes in the assumptions characterizing the different scenarios." Although studying additional scenarios beyond the base scenario (basecase) is commonly used in traditional transmission planning for the purpose of sensitivity analysis, the approach in LRTP studies should be fundamentally different. With LRTP, it is critical for every scenario to be treated as an independent scenario -- as a basecase in its own right. Only in that fashion can it be determined which transmission upgrade elements are common to all or most study scenarios, thereby producing a "least regrets" plan.

Our comments below are divided into two parts. The first part offers our broad comments on the approach that the CTPG has used for developing its Phase 2 transmission plans. We strongly recommend that the CTPG seriously consider our comments and recommendations in this area especially as it embarks on its Phase 3 activities. The second part of our comments covers our concerns with some of the details of the latest the CTPG report, on Phase 2 study results and the Phase 3 study plan.

Part 1: Broad Comments on the CTPG Study Process:

Our main concerns with the CTPG process are related to two areas: 1) Adoption of planning scenarios, especially as related to renewable resource development scenarios, and 2) the CTPG study method.

Adoption of Planning Study Scenarios: While we are pleased with the CTPG's willingness to accept and work with multiple study scenarios, we strongly recommend that the CTPG develop specific and clear criteria for accepting study scenarios. This recommendation is not only to prevent the mushrooming of

study scenarios, as we are starting to see in this cycle of CTPG studies, but also to ensure that the study results do not incorrectly favor a particular transmission upgrade solution.

In this regard, we specifically recommend that the CTPG allow half of its study scenarios (not to exceed four) to be provided by relevant stakeholder groups such as state agencies, environmental organizations, and generation representative groups – alternatively, all these scenarios could be provided by a group such as RETI if consensus can be achieved. The CTPG should develop the other half of the scenarios based on input from its own members, primarily drawing on indications of commercial interest, but should vet such scenarios with stakeholders before studying them. Some of the study scenarios used, which addressed the interests of one or two CTPG members (e.g., the Owens Valley Scenario), should not have been studied as a separate planning scenario. Such special studies not only divert the efforts of overly taxed transmission planning resources from studying more relevant and realistic scenarios, but also can tilt the results in an unsound direction.

Study Approach: While we believe that the CPTG understands the principles of the LRTP, we are concerned that the CTPG is missing the point on the underlying study approach that is needed to make the LRTP work. We are specifically concerned about the individual transmission plans that the CTPG has adopted for each of the planning scenarios that it studied as part of its Phase 2 effort. What we have observed there is that each batch of generation resources has been put in the study plan with an associated set of transmission upgrades, and then the CTPG has used power flow studies under normal and contingency conditions to determine extra transmission upgrades and operating practices that are needed to "patch" the case together. This has resulted in a patchwork of suboptimal transmission upgrades, mainly of a local nature, for each of the planning study scenarios. Such a starting point can only lead to a complete failure of the LRTP process as it is difficult to identify a set of least regrets transmission upgrades from a disparate list of generally local transmission upgrades.[1]

Instead we suggest that the CTPG perform true regional planning for each of the planning scenarios it studies so that the transmission plan is not simply a patchwork of disparate transmission upgrades. In that regard, we recommend that the CTPG consider the approach that the CAISO has been employing to identify the deliverability requirements of a group of generation projects. This approach initially uses a DC power flow to study the "basecase;" hence allowing the CTPG to add all the new generating resources into one basecase without adding any new transmission beyond what is needed to interconnect the

[1] Given the limitation of the typical planning tools that the CTPG member companies use for transmission planning applications, we believe that we understand why the CTPG may have included specific transmission solutions with every batch of generation projects. These planning tools require that the basecase solve on an AC level so that planning studies could commence.

generators to the closest system substation or loop into the closest line. The DC power flow algorithm allows this case to solve and identify most of the major system overloads. At this stage, the CTPG should identify those bulk system upgrades that address and resolve the major system overloads and identify local upgrades, if needed, to deal with local overloads. After this process is completed, an AC basecase could be built and studied to further refine the solution built on the basis of the DC power flow case and resolve the system reactive power needs while at the same time accounting for various bulk system RAS schemes.

Only in this fashion, we believe, will the transmission upgrades identified for each resource scenario constitute a true regional solution and only in this fashion can the LRTP process be made to work effectively. We understand that such a regional approach may not lend to simple dividing of projects among PTOs, but that is a small price to pay in order to develop truly regional and least regrets transmission projects which will both produce more efficient results and promote more robust competition in the generation sector.

Finally, given the conceptual nature of the transmission plan, we would like to suggest that the CTPG reconsider the need to perform any dynamic analysis of the results and allow more detailed studies to be performed by its member planning authorities which are responsible for finalizing the results for their footprint.

Part 2: Specific Comments and Questions on the CTPG Phase 2 Study Results:

1. On page 10, the report states: "This Discounted Core consists of the renewable resources necessary to meet the "net short" requirement assuming a mix of resources equaling seventy percent (70%) from in-state projects and thirty percent (30%) from out-of-state projects." This description of the discounted core is incorrect and should be corrected.

2. On page 16, the report fails to identify the Sunrise Powerlink as one of the projects that should be included in the basecase.

3. On page 23, the report speaks about simulating generator voltage ride through capability as part of its dynamic studies. We wonder whether this simulation covered both LVRT and HVRT and whether this capability was only modeled for wind generators in California or applied to all types of generating units in the WECC.

4. On page 25, the report states: "All loads were modeled as constant MVA during the first few minutes following an outage or disturbance." Such an assumption appears to us to be overly conservative.

5. On page 25, the report states: "Shunt capacitors in the Southern California Edison service area were modeled according to the Centralized Grid Capacitor Control provided by the utility." Why was such capability not modeled for the PG&E service territory?

6. On page 29, the report goes to some length to discuss network upgrade cost allocation procedures. What is the relevance of cost allocation to the CTPG exercise, and why should cost allocation even figure into this report?

7. On page 30, the report describes how the generators used for the study were selected from various interconnection queues of the California BAAs. Why were generators in the queues of out-of-state BAAs who have signed or are in the process of signing PPAs with California LSEs not included in the study?

8. On page 36, the report states:

> "Stakeholders have provided comments describing alternative methods by which to characterize resource portfolios including out-of-state renewable resources. Essentially, it can be assumed that load-serving entities will replace some portion of their existing energy portfolios consisting of deliveries from out-of-state fossil-fired units with energy from new contracts with renewable resources, and that renewable energy will displace some fossil-fired energy. How these effects should modeled received considerable attention from the CTPG Study Team as well as stakeholders."

What resolution did the CTPG reach from having paid "considerable attention" to this issue?

9. On page 37, the report states: "1,500 megawatts of wind/hydro shaped resource located in the Pacific Northern and interconnected at Malin and Captain Jack." How was this product modeled, both the generation output portfolio at COB and delivery arrangement to COB?

10. On page 39, the report states: "Nuclear and hydroelectric units were not decremented in the summer peak cases." Were these resources are not dispatched down due to their low fuels cost or due to some other protocol?

11. In Table 7.2.3 on page 46, the report offers 200 MVAR of synchronous condenser as part of its "sub-optimal" and local solutions. Were the reactive capabilities of the renewable resources considered when coming up with that reactive solution?