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Acceptance of Phase 1B Report

The RETI Stakeholder Steering Committee (SSC) accepts the Phase 1B Report (Report) submitted December 4, 2008, by Black & Veatch and the RETI Environmental Working Group (EWG) as the basis for conceptual transmission planning in Phase 2. This Report is the most thorough assessment ever undertaken of the economic and environmental aspects of renewable energy resource areas capable of providing electricity for California consumers. The SSC appreciates the efforts of the many participants who assisted in the preparation of the Report.

Conceptual plans will be developed in Phase 2 of the RETI process to provide transmission access to the resources assessed in Phase 1. Guidance from the SSC for the preparation of these plans in the Phase 2 process is described below.

Summary of Report Findings

Assessment of renewable resource areas required a number of assumptions and estimates, as described in the Report, and the numerical results are therefore necessarily subject to some uncertainty. Nevertheless, the major findings of the Report appear to be robust and adequate as a basis for initial conceptual transmission planning. These findings include:

- Given adequate transmission access, a large amount of potentially competitive and environmentally sensitive renewable energy development can occur to meet California's goals. Much of this energy is located in Southern California. A smaller amount is located in Northern California.
- Adequate transmission access exists or is being planned to provide access to some important California renewable resource areas, which the Report has identified as attractive economically and environmentally;
- Significant amounts of economically competitive renewable energy are potentially available for import into California from neighboring states and countries.

Need for Additional Information

The assessments described in the Report were based on the best available estimates of potential renewable energy resources development in California and elsewhere. However, considerable uncertainty remains. Some, but not all, of the uncertainty associated with future renewable energy development can be reduced if additional detailed information becomes available. Additional information should be collected in Phase 2 to refine the assessments described in the Report.

This additional information will include:

- Commitments by developers made to the California Independent System Operator (CAISO) in its Generator Interconnection Process Reform (GIPR).
- Updated renewable energy procurement information provided by the CPUC and local regulatory authorities;
- Data on parcelization and ownership fragmentation of lands underlying project areas;
- Data on local environmental and regulatory issues, such as presence of uniquely valuable environmental resources and BLM development limitations, that could not be considered in the Phase 1B CREZ-level assessment;
- Environmental data for designated resources outside California;
- Updated transmission cost estimates;
- Information on potential physical and/or market barriers to intrastate energy transfers;

- Potential development of renewable resources not considered in the Report.

Guidance for Conceptual Transmission Planning in Phase 2

Planning, permitting and/or construction of transmission projects now underway to access renewable resource areas should proceed as quickly as possible and must not be interrupted by RETI conceptual planning.

Additional information on resource areas will reduce but will not eliminate uncertainty associated with the location and amount of future renewable energy development. The challenge for Phase 2 is to develop conceptual transmission plans that are flexible enough to accommodate this uncertainty while providing the basis for development of detailed plans for specific major transmission projects in RETI Phase 3.

The SSC provides the following initial guidance for Phase 2 conceptual transmission planning:

- RETI conceptual transmission plans should identify transmission facilities needed to provide some level of access to the California competitive renewable energy zones (CREZ) described in the Report, giving priority consideration to CREZ with demonstrated commercial activity;
- Conceptual plans should utilize existing transmission corridors to the extent practical. Where necessary, new transmission corridors should be identified for network and radial facilities to minimize rights-of-way requirements and environmental impacts;
- Conceptual planning should emphasize a no-regrets approach consisting of upgrades likely to be needed in the largest number of development scenarios and capable of being able to be phased to accommodate development in different areas at different times;
- With the exception of Tehachapi and Imperial North-A CREZ, planners should assume that approximately 40% of the potential energy development in all other CREZ, as identified in the Report, will be developed by the year 2020. For Tehachapi, where transmission projects are already underway, planners should assume that most of the wind energy identified in the Report will be developed, together with approximately 40% of the identified solar energy. For Imperial North-A, where transmission projects are in the planning and permitting stages, planners should assume that most of the energy identified in the report will be developed.
- Planning should also assume that approximately 15,000 GWh/yr of renewable energy can economically be imported from out-of-state as described in the Report's Table ES-3, net of exports of renewable energy to other regions.
- Planning should assume that reductions in electric energy from fossil generation to accommodate increases in renewable generation will be divided between in- and out-of-state generators. CEC and ARB modeling can help inform Phase 2 assumptions of fossil generation displacement.
- Plans should allow all California load serving entities (LSEs) to meet their renewable energy goals.
- Planning should consider potential impacts on the California electricity system due to in-state and out-of-state renewable energy development sufficient to supply the renewable "net short" described in the Report.
- The statewide plan included in the Phase 2 report at the end of Phase 2 should prioritize CREZ-transmission projects in terms of development timing and feasibility considering both economic cost and environmental concern.

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This guidance is discussed in further detail below.

Access to Phase 1B CREZ

Given the remaining uncertainty associated with the location and scale of future renewable energy development, for purposes of conceptual planning in Phase 2 it should be assumed that renewable energy development may occur in all of the California CREZs identified in the Report. Transmission facilities required for access to CREZs should be identified in initial Phase 2 work, giving priority to CREZ with demonstrated commercial activity. The Phase 2 report will prioritize these facilities in terms of development timing and feasibility, and consider how their development might be staged to accommodate generation additions over the period to 2020.

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Transmission Corridors

To minimize the footprint of facilities included in the conceptual transmission plans developed in Phase 2, plans should make maximum use of existing and planned transmission corridors. It is likely, however, that new transmission corridors will be needed for network facilities to provide access to all California CREZs. Corridors for radial ("trunkline") facilities also will be needed to connect CREZs to the network. Plans for all transmission corridors necessary to provide access to CREZs should minimize the need for and size of new corridors while maximizing system reliability.

Energy Development Assumptions

The renewable "net short" in the year 2020 that may require new transmission facilities, estimated in the Report to be approximately 68,000 GWh/yr, depends on future load growth and on the deployment of distributed generation in load centers. Conceptual transmission plans developed in Phase 2 should be reassessed periodically to ensure that California's energy goals can be met with a minimum of new remote renewable projects requiring new transmission facilities.

Transmission is already being planned or is under construction to access renewable energy in the Tehachapi and Imperial Valley regions. Phase 2 planning should assume that most of this energy in these two areas will be developed. Large additional amounts of renewable energy not considered when these transmission projects were proposed have applied for interconnection in these areas in recent years.

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In addition to the energy from the Tehachapi and Imperial areas, planning should assume that approximately 40% of the other energy identified in the Report for each California CREZ may be developed for a total of approximately 96,000 GWh/yr from California CREZs. Together with approximately 15,000 GWh/yr of net imported energy described below, the conceptual transmission plan developed in Phase 2 should accommodate a total of approximately 111,000 GWh/yr, 63% above the estimated net short.

All of the energy potentially available from all of the California CREZs assessed in the Report will not be required to meet the renewable net short in 2020. Only facilities needed to meet the state's energy goals will be constructed. However, transmission planning for substantially more energy than required by the renewable net short allows for the uncertainty in the resource assessments described in the report and for the uncertainty in the difference between potential and actual development. In addition, adequate transmission capacity allows for competition between developers in multiple resource areas in order to minimize generation costs.

Out of State Generation

As described in Table ES-3 of the Report, an estimated 15,000 GWh of economically attractive renewable energy potentially is available from Oregon, Nevada, British Columbia and Baja California. However, renewable energy may also be exported from California. The conceptual transmission plan developed in Phase 2 should be able to accommodate net imports of approximately15,000 GWh/yr.

Displacement of Fossil Generation

Achievement of California's goal of 33% electric energy from renewable resources by the year 2020 would provide energy to meet projected load growth and, in addition, would displace electricity from fossil-fired generators currently used to serve California load. For purposes of Phase 2, planners should assume that the displaced output will be divided between California and out-of-state generation.

Adequate Resources for all Load Serving Entities

The conceptual transmission plan developed in Phase 2 should ensure that all California load serving entities (LSEs) can meet their obligations to secure renewable energy sufficient to supply 33% of the electric energy they sell to consumers. The plan also should minimize physical and/or market barriers to intrastate energy transfers that would prevent California LSEs from meeting their renewable energy obligations economically.

System Impacts

The conceptual transmission plan developed in Phase 2 should enhance operation and reliability of the California electric grid.

Identifying Priority Transmission Components for RETI Phase 3 Study

The conceptual transmission plan developed in Phase 2 will identify all of the components potentially required to enable the state to meet its renewable energy goals by the year 2020. Detailed planning, permitting and construction of these components will be phased over time. In RETI Phase 3, detailed plans of service will be developed for components of the conceptual plan given highest priority, based on the assessments described in the Report, as updated with additional information. The conceptual plan compiled in Phase 2 should prioritize CREZ-transmission facilities for which plans of service will be developed in Phase 3.

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