

**Response of the California Transmission Planning Group  
Study Team**

**Comments of Geothermal Energy Association (GEA)  
Re CTPG's Draft Phase 2 Study Report and Draft Phase 3 Study Plan**

**Comment Received:**

Any resource portfolio studied by the California Transmission Planning Group that is only based on the interconnection queues of its members would exclude the hundreds of megawatts of geothermal generation in queue of its largest member, the California Independent System Operator. There are about 535 megawatts of active geothermal projects in the current California ISO interconnection queue. The most recent of these Interconnection Requests (IRs) were submitted in May 2008 (i.e., they have been in the queue for quite a while).

Virtually all of this generation (500 megawatts) will be located in the Nevada North Competitive Renewable Energy Zone (CREZ). About 350 megawatts consists of either Serial Group projects with filed Large Generator Interconnection Agreements or Transition Cluster projects that have already posted financial security. According to the Phase 2 Study Plan and Phase 2 Report, all of that generation capacity should be included in the CTPG queue-based portfolio.

**CTPG Study Team Response:**

Most of the resources identified in the appendix provided by the Geothermal Energy Association were modeled in the queue scenario as well as other scenarios, though at different output levels as specified in the study plan. While none of the units were assumed to be physically located in the "Nevada North" renewable resource development area, they were connected to the grid at the locations indicated in the respective generators' interconnection process. CTPG's study results are therefore consistent with the geothermal generators' planned interconnection locations.

For the purposes of applying annual capacity factor assumptions, Queue 58 was assigned to the Nevada C renewable resource development area; Queue 184 was assigned to the Solano CREZ (which is roughly in the area of the Geysers geothermal resource area); Queues 391 to 393 were assigned to the Kramer CREZ; Queues 394 to 399 were assigned to the Inyokern CREZ; and Queues 205 and 467 were assigned to the Nevada N renewable resource development area. The rest of the units mentioned by the Geothermal Energy Association were not studied during Phase 2 because they did not meet the criteria for inclusion as described in the study plan, i.e., they did not have a signed Large Generator Interconnection Agreement, were not in the process of signing such an agreement, or were not in a transition cluster with posted financial security. In total, for the queue scenario, about 500 megawatts of geothermal generation were modeled north of Lugo (see above), another 500 megawatts of geothermal generation were modeled in the Imperial Irrigation District system (Imperial North CREZ), and about 500 megawatts of geothermal generation was modeled in the Lassen North CREZ.

**Comment Received:**

The only consideration of Nevada North geothermal generation in the Phase 2 Study is provided in the Northern Scenario – basically, a sensitivity case. Based on “projects located in northern Nevada Energy interconnection queue as of January 12, 2010,” this scenario assumes 1,000 megawatts of Nevada North generation, including 400 megawatts of geothermal generation. However, there are actually over 800 megawatts of geothermal generation in the NV Energy interconnection queue. The Phase 2 Study Plan and Phase 2 Report do not explain the reason for considering only half of this generation in the Scenarios.

**CTPG Study Team Response:**

The “Northern” Scenario was developed to model renewable resources from the Pacific Northwest, northeast California, and northern Nevada. The modeled resources were derived from the various queues described in the Phase 2 Study Plan, including NV Energy’s interconnection queue. The Pacific Northwest resources were assumed to be delivered to the California-Oregon Intertie (COI) at the Malin and Captain Jack substations. The resources in northeastern California and northern Nevada were assumed to be delivered to the main grid in northern California via new 500-kV facilities connecting the Lassen County area to the existing grid at the Olinda and Round Mountain substations.

At the time the information for the Northern Scenario was developed, the NV Energy queue included approximately 1,260 megawatts of wind generation and approximately 820 megawatts of geothermal generation in northern Nevada. For the purposes of the Northern Scenario it was assumed that approximately fifty percent (50%) of each type of generation would be developed and could be delivered to the new 500-kV facilities in Lassen County. It is also noted in the Phase 2 Study Report that, as of January 12, 2010, system impact studies were available for approximately 300 megawatts of the northern Nevada geothermal generation in the NV Energy queue.

**Comment Received:**

Virtually all of the geothermal generation in the CAISO interconnection queue will be located in the Nevada North CREZ and will interconnect to the CAISO grid along the Control-Kramer Substation path. Most of this generation shows a Point of Interconnection (POI) at Control Substation. Consistent with this assumption, the California Renewable Energy Transmission Initiative (RETI) effort has identified the Control-Kramer corridor as a major transmission path for renewable-generation development. Moreover, the RETI analysis has developed the concept of a “gateway CREZ,” i.e., potential transmission synergies between out-of-state and in-state CREZs. The Owens Valley CREZ is identified as a potential gateway CREZ for Nevada North generation, i.e., the incremental cost to construct transmission to accommodate Nevada North generation would be considerably reduced by significant Owens Valley development. However, CTPG analyses to date have persisted in assuming a COI entry point (Round Mountain and/or Olinda Substation) for any Nevada North generation assumed, despite repeated comments about the assumed entry path for Northern Nevada geothermal generation. This is true even in the CTPG scenario featuring 5,000 megawatts of Owens Valley solar development.

**CTPG Study Team Response:**

The Control – Kramer corridor was considered as an import path into California for the Central Nevada geothermal generation in the Phase 2 regular generation queue scenarios consistent with the interconnection requests in the generation queue.

**Comment Received:**

Transmission planning efforts outside California have been uneven, with some jurisdictions reluctant to incur costs or development risks for transmission to service generation that will serve load in California. The best way to ensure that California has access to desirable out-of-state resources in some cases might be consideration in the ultimate plan of some limited transmission investments into and in surrounding Balancing Authority Areas. This could be in the form of traditional transmission investment beyond the border or, as allowed by the California ISO Tariff, out-of-state Location-Constrained Resource Interconnection Facilities (LCRIFs). LCRIFs and other transmission investments should be especially cost-effective for geothermal generation, because of the expected high capacity factor/utilization of the facilities. The CTPG should think “outside the box” and use these and other available tools to enhance California’s cost-effective access to these high-value supplies.

**CTPG Study Team Response:**

This comment has merit and is under evaluation by the CTPG Study Team.