

**California Transmission Planning Group  
Study Team’s Assessment of the  
“Transmission Needed” for Path 52 Imports**

**(As Suggested in Terra-Gen Power’s Comments on CTPG’s Phase 3 Study Plan)**

**Comment Received:**

“1,000 megawatts of Nevada North generation, including the 400 megawatts of geothermal generation in the NV Energy interconnection queue, should be included in the Phase 3 Generation Interconnection Portfolio, with a Path 52 import point into Control Substation. These assumptions would:

1. Include consideration of Nevada generation, being developed specifically for the California market, that is as likely to be successfully constructed as the in-California generation in this portfolio; and,
2. Provide additional information needed to assess the transmission needed if this generation does seek entry into California across Path 52, along with the central Nevada generation already assumed to come in through this route.”

**CTPG Study Team’s Assessment of the “Transmission Needed” for Path 52 Imports:**

CTPG’s Phase 1 and Phase 2 studies assume renewable resource additions in Nevada and in the Lassen North CREZ as shown on the following table.

**Renewable Resource Additions  
Installed Capacity (MW)**

	CTPG Phase 1	CTPG Phase 2		
	Cases A, B & C	SW, Q and OV Scenarios	RETI Scenarios	NW Scenarios
<b>Lassen North</b>				
Wind	873	0	0	1423 <sup>a/</sup>
Geothermal	0	463	0	410 <sup>a/</sup>
Solar Thermal	0	0	0	719
<b>subtotal</b>	<b>873</b>	<b>463</b>	<b>0</b>	<b>2552</b>
<b>Nevada North</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0 <sup>a/</sup></b>
<b>Nevada Central</b>				
Geothermal	239	280	160	147
Biomass	0	0	15	0
<b>subtotal</b>	<b>239</b>	<b>280</b>	<b>175</b>	<b>147</b>
<b>Nevada South</b>				
Solar Thermal	217	487	448	256

<sup>a/</sup> The CTPG Study Team response to the comments of the Geothermal Energy Association (GEA) regarding CTPG’s Draft Phase 2 Study Report and Draft Phase 3 Study Plan states:



“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.”

Accordingly, the 410 MW of geothermal generation and approximately 630 MW of wind generation shown for the Lassen North CREZ in the “NW” scenarios can be characterized as “Nevada North” resources.

The only region on the above table that is in proximity to Path 52 is “Nevada Central.” Path 52 is currently comprised of a single 55 kV line between Silver Peak substation in western Nevada and Control substation which is located just west of the city of Bishop in the Owens Valley. WECC’s existing path rating for Path 52 is 17 MW in both the east-to-west and west-to-east directions.

As indicated in the CTPG Study Team’s response to the comments of the GEA regarding CTPG’s Draft Phase 2 Study Report and Draft Phase 3 Study Plan, the renewable resources shown on the above table “were [for CTPG’s study purposes] connected to the grid at the locations indicated in the respective generators’ interconnection process.” Thus, developers’ interconnection plans for the renewable resources shown on the above table imply modest levels of power deliveries into the state of California that would be in proximity to Path 52, i.e., the “Nevada Central” region. CTPG’s Phase 1 and Phase 2 various cases and scenarios include between 147 MW and 280 MW of new renewable resources in the Nevada Central region.

Terra-Gen Power suggests that CTPG evaluate the “transmission needed” for 1000 MW of generation in Nevada “with a Path 52 import point.” As a threshold matter, CTPG does not believe the available information from generation developers supports Terra-Gen Power’s suggestion that there is a high probability that “1000 MW” of new renewable resources will be developed “with a Path 52 import point.” As indicated above, new renewable resource development in the Nevada Central region is currently estimated by CTPG at no more than 280 MW.

Today, there are 50 MW of resources in Central Nevada which are delivered to Control substation via the existing 230 kV Dixie Valley (“Oxbow A”)-Control (“Oxbow B”) #1 line. This line has a rating of 434/449 MVA normal/emergency. The existing 230 kV Dixie Valley-Control #1 line is not part of Path 52. For purposes of CTPG’s Phase 1 studies, 69 MW of the assumed 239 MW of new Nevada Central renewable resources were assumed to be connected to the existing Dixie Valley substation and the remaining 170 MW were assumed to be connected directly to Control substation via a radial gen-tie or trunk line line.

For purposes of CTPG’s Phase 2 studies, a new 230 kV line is assumed to be built parallel to the existing 230 kV Dixie Valley-Control #1 line, with a northern terminus at

the existing Dixie Valley substation and a southern terminus at new substation located close to the existing Control substation. The new line would loop-into several new renewable resource collection substations in the Nevada Central region, collecting the identified amounts of new renewable resources in the Nevada Central region (between 147 MW and 280 MW as shown on the above table). The new substation located near Control substation would be connected to (i) the existing Control substation via a short 230 kV tie line, and (ii) a new 230 kV Inyokern substation via a 230 kV rebuild of the existing 115 kV system between Control and Inyokern substations.

Terra-Gen Power does not indicate which, if any, CTPG-identified reliability criteria violations would be mitigated if a Path 52 import point were assumed for resources developed in Nevada. CTPG does not believe it is likely that an upgrade of Path 52 would mitigate any of CTPG's identified reliability criteria violations because resources in Nevada Central are effectively radial to those portions of the existing California grid (e.g, at and south of Control substation) where reliability criteria violations were found.

An upgrade of Path 52 might represent an alternative to the 230 kV upgrades between Dixie Valley and Control substations that are included in CTPG's Phase 1 and Phase 2 studies. However, based on the information provided by Terra-Gen Power, it is not apparent that an upgrade to Path 52 (the existing 55 kV Silver Peak-Control #1 line) would offer any advantages to the 230 kV upgrades assumed by CTPG. If there is information that suggests Nevada Central renewable resource development is more likely to take place along the existing Silver Peak-Control line than along the Dixie Valley-Control corridor, a reasonable basis for assessing an upgrade of Path 52 could be established.