California Transmission Planning Group (CTPG)
Technical Study Team Response to
Comments of 8minutenergy Renewables (8me) on
CTPG's Draft Phase 4 Study Report

Comment:

8minutenergy ("8me"), in partnership with Gestamp Solar, is developing 355 megawatts of solar-energy projects in the Imperial Irrigation District (IID) area. These projects are far along in the development process, *e.g.*:

- Completed the interconnection study process, with an August 2010 Facility Study;

- Will execute a General Interconnection Agreement in First Quarter 2011;

- Received a Mitigated Negative Declaration in June 2010 for the first 50 megawatts; and,

- Completed a final hearing for land-use entitlement in August 2010 for the first 50 megawatts.

(For more information, see *http://8minutenergy.com/project-portfolio*.)

The Commercial Operation Dates (CODs) for the first of these projects is late 2013, and the others will follow soon after. However, timely completion of these and other viable IID-area renewable-energy projects is jeopardized by transmission constraints between the IID and California ISO systems. IID-area transmission construction to support these projects has already been approved by the IID Board and construction will begin in 2011, but ISO-side matching upgrades are still not approved. (The 45 active IID-queue projects – virtually all renewables – are posted at *http://www.oatioasis.com/IID/IIDdocs/IID_LGIP_Queue_Listing_%28Rev.11-08-10%29.pdf*).

Given its IID-area development activities, 8me urges the CTPG to approve the proposed classification of the Imperial Valley and West of Devers area upgrades indentified in the Phase 4 Results as "high potential" (including related investments, such as a new 500/230-kV transformer at Imperial Valley Substation), as these upgrades will help enable delivery of renewable energy from Imperial and Riverside counties to California ISO area load centers.

CTPG Technical Study Team Response:

8me's comments reference "transmission constraints between the IID and California ISO systems." The table below summarizes the CTPG's current understanding of the interface capability between the IID and California ISO systems:

Ratings of Facilities Comprising the Interfaces between the CAISO and IID Balancing Authority Areas

IID – CAISO Interfaces	Existing/Planned Interface Facilities	Existing Ratings	Planned Ratings based on Upgrades Identified in CTPG Study Reports
Path 42	WECC Path Rating	600 MW	Not established
	Existing 230-kV Coachella Valley-Devers #1 line.	Normal: 393 MVA Emergency: 393 MVA	NA
	Existing 230-kV Coachella Valley-Ramon #1 line.	Normal: 393 MVA Emergency: 393 MVA	NA
	Loop existing 230-kV Coachella Valley-Devers #1 line into Mirage substation creating an existing 230-kV Mirage-Devers #2 line and an existing 230-kV Coachella Valley-Mirage #1 line.	NA	NA
	Reconductor existing 230-kV Coachella Valley-Ramon #1 line	NA	Normal: 785 MVA Emergency: 785 MVA
	Reconductor created 230-kV Coachella Valley-Mirage #1 line	NA	Normal: 785 MVA Emergency: 785 MVA
	230-kV Coachella Valley-Mirage #3 line	NA	Normal: 785 MVA Emergency: 785 MVA
Connections to Imperial Valley substation	WECC Path Rating	No WECC Path established	No WECC Path established
	Existing Imperial Valley-El Centro #1 line	Normal: 351 MVA [a/] Emergency: 351 MVA [a/]	NA
	Planned Imperial Valley-Dixieland #1 line	NA	Normal:1000 MVA Emergency: 1000 MVA
	Rebuild existing Imperial Valley -El Centro #1 line with double circuit towers and larger conductors to create a new 230-kV Imperial Valley-El Centro #1 line.	NA	Normal:1000 MVA Emergency: 1000 MVA
	Build new IID Imperial Valley 230-kV switching station (near existing Imperial Valley substation) looping in (i) rebuilt 230-kV Imperial Valley-El Centro #1 line (creating a 230-kV IID Imperial Valley-El Centro #1 line and a 230-kV IID Imperial Valley-Imperial Valley #1 line), and (ii) planned 230-kV Imperial Valley-Dixieland #1 line (creating a 230-kV IID Imperial Valley-Dixieland #1 line and a 230-kV IID Imperial Valley-Imperial Valley #2 line).	NA	NA

[a/] The existing El Centro 230/161-kV transformer has normal and emergency ratings of 240 MVA and 258 MVA, respectively. Currently, this transformer rating establishes the interface capability between the IID and CAISO balancing authority areas at Imperial Valley substation. After implementation of the upgrades identified in the CTPG study reports for the IID balancing authority area (see, for example, Appendix B of the final Phase 3 study report), this transformer is no longer expected to be the limiting element.

8me's statement that "ISO-side matching upgrades are still not approved" presumably refers to the transmission lines north of the Path 42 cut plane, namely the existing 230-kV Mirage-Devers #1 line and the 230-kV Mirage-Devers #2 line that will be created by the loop-in of the existing 230-kV Coachella Valley-Devers #1 line into Mirage substation. Note that the Southern California Edison Company expects that when the loop-in is constructed, the 230 kV Mirage-Devers #2 line will be rated to 494 MVA/665 MVA (normal/emergency) in accordance with Southern California Edison Company line rating standards, the same as the existing 230-kV Mirage-Devers #1 line. Appendix B in the final Phase 3 Study Report also identifies a reconductor of the 230-kV Mirage-Devers #1 line which would increase its thermal capability above 494 MVA/665 MVA (normal/emergency).

The CTPG assumes 8me's statement that "ISO-side matching upgrades are still not approved" does not apply to the connections to Imperial Valley substation since all of the existing connections to Imperial Valley substation are within the IID balancing authority area and any upgrades of those facilities would likely be owned by IID and be in the IID balancing authority area. The CTPG requests that 8me confirm whether the CTPG's understanding as described above comports with information known to 8me.

8me urges the CTPG to "approve" the classification of the Imperial Valley and West of Devers area upgrades as "high potential" transmission upgrades. 8me further recommends that the third 500/230-kV transformer at Imperial Valley substation be "approved" by the CTPG as a "high potential" transmission upgrade. The CTPG has already classified the West-of-Devers upgrades and the IID balancing authority area upgrades listed in Appendix C of the CTPG's final Phase 3 Study Report as "high potential" transmission upgrades. It is not apparent that there would be any further purposes served if the CTPG were to "approve" these designations again.

The third 500/230-kV transformer at Imperial Valley substation is included in all of the CTPG's study work as a basecase addition. Similar to other upgrades included in the CTPG's power flow basecases, this transformer is included in a signed Large Generator Interconnection Agreement (LGIA). Under the California ISO tariff, any network upgrade included in a signed LGIA is deemed approved for purposes of cost recovery through the California ISO's Transmission Access Charge (TAC) mechanism. The CTPG believes upgrades in this category have a relatively high probability of being constructed and that there is no particular advantage or purpose that would be conferred or served by characterizing such upgrades as "high potential."

Finally, the CTPG Technical Study Team took note of 8me's use of the phrase "enable delivery of renewable energy." The CTPG would be interested in receiving any information held by 8me that shows the point at which delivery of renewable energy from the IID balancing authority into the California ISO balancing authority area is not possible with the existing transmission grid configuration.

Comment:

Given its IID-area development activities, 8me also urges the CTPG to change the classification of several upgrades in the Plan - currently "medium potential" – to "high potential," specifically the upgrades listed below, which have (in other venues) been termed "Path 42/Devers-Mirage Upgrade" (P42/DM Upgrade):

- New 230-kV Mirage-Devers #2 and an Coachella Valley-Mirage #1 lines, created by looping the existing 230-kV Coachella Valley-Devers #1 line into Mirage Substation; and,

- Reconductoring of these existing 230-kV lines: Coachella Valley-Ramon #1, Ramon-Mirage #1, Coachella Valley-Mirage #1, and Mirage-Devers #1.

The P42/DM Upgrade would enable delivery of up to 1,400 megawatts of new renewable generation to the California ISO area quickly and at a very low relative cost. It is vital to the viability of the late-stage generation projects in the area that the ISO-side upgrades be constructed in time to meet the planned project CODs. The remainder of these comments below addresses the other strong reasons why the Upgrade should be classified as "high potential."

CTPG methodology: The CTPG explained during the January 7th stakeholder meeting that the "high-potential upgrades"' in the Draft Plan are those: (1) serving "High-Potential Competitive Renewable Energy Zones" ("CREZs"); and (2) where shift-factor analysis showed that they would carry the "most" renewable energy, in annual megawatt-hours. (The cut-off point for the "most" renewable energy was not specified.)

The "high potential CREZs" were identified as those with high "commercial interest" that also had high environmental scores from the California Renewable Energy Transmission Initiative. "High commercial interest" was defined as projects having: (1) a signed Purchased Power Agreement (PPA) as of June 1, 2010; and (2) its major permit filed with and deemed data adequate by the appropriate agency, as of March 1, 2010.

Problems with the CTPG methodology: These criteria ignore the "chicken-and-egg" nature of transmission availability. The presence of a PPA might be a valid project-viability indicator in some other areas, however, lack of a commitment to upgrade IID-CAISO transmission lines, or an obvious means of obtaining one (since IID-area projects cannot enter the CAISO interconnection process), has impeded the ability of IID-area projects to secure PPAs with CAISO-area load-serving entities.

CTPG Technical Study Team Response:

The 230-kV Mirage-Devers #2 and Coachella Valley-Mirage #1 lines are created when the existing 230-kV Coachella Valley-Devers line is looped into Mirage substation.[1] Since these two lines already exist, there is no reason to consider designating them as "high potential" transmission upgrades.

The methodology the CTPG used to designate transmission upgrades as "high potential" and "medium potential" is described in Section 10 of the final Phase 3 Study Report. The CTPG understands 8me's point about the "chicken-and-egg" nature of transmission availability, however, it is not reasonable to expect that transmission will get built without consideration of which transmission upgrades in combination with which renewable resources will provide consumers – who will ultimately pay for these transmission upgrades – the most benefit relative to the wide range of alternatives available to meet the goals of the California Renewable Portfolio Standard. Moreover, some regulatory authorities with responsibility for approving transmission upgrades are required by statute to consider alternatives to proposed new transmission before granting approval to construct such upgrades.[2]

Accordingly, the CTPG does not believe it is appropriate based on the information available to the CTPG at this point in time to redesignate the proposed reconductoring of the existing 230-kV Coachella Valley-Ramon #1 line, the existing 230-kV Ramon-Mirage #1 line, the existing 230-kV Mirage-Devers #1 line, and the existing 230-kV Coachella Valley-Mirage #1 line (which is created upon the loop-in of the existing 230 kV Coachella Valley-Devers line) as "high potential" transmission upgrades.

The CTPG is currently reviewing its methodology for designating transmission upgrades as "high potential" and "medium potential," as well as the data supporting its prior determinations. This review may lead to

[1] This loop-in project has already received approvals from the California Public Utilities Commission.

[2] For example, California Public Utilities Code Section 1002.3 provides that "in considering an application" to build a transmission facility, "the commission shall consider cost-effective alternatives to transmission facilities that meet the need for an efficient, reliable, and affordable supply of electricity, including, but not limited to, demand-side alternatives such as targeted energy efficiency, ultraclean distributed generation,..., and other demand reduction resources."

changes in the transmission upgrades which are currently designated as “high potential” and “medium potential.”

Comment:

By March 2011, developers of several hundred megawatts of new IID-area renewable generation projects will have executed Generator Interconnection Agreements (GIAs), and made up to $250 million in associated financial commitments for IID transmission upgrades to get their energy to the California ISO. Given the situation, the CTPG should consider these commitments to be equivalent to PPAs as demonstrations of project seriousness and viability.

CTPG Technical Study Team Response:

The CTPG agrees with 8me that financial commitments for transmission upgrades are a good indicator of “commercial interest.” Assuming the financial commitments referenced by 8me in its comments are verified, the CTPG will consider how this might change the current designations of “high potential” and “medium potential” transmission upgrades.

Comment:

The CTPG should assume a minimum of 2,000 megawatts of “high commercial interest” IID-area imports into the California ISO, delivered to Imperial Valley and Devers Substations - 1400 megawatts of generation advanced in the study process, plus 600 megawatts of existing generation. A sensitivity case should examine potential imports of up to 2,600 megawatts, to help size the conductors and upgrades to handle the level of development from this high-potential area.

CTPG Technical Study Team Response:

The CTPG appreciates 8me’s recommendation that the CTPG “assume a minimum of 2,000 MW of ‘high commercial interest’ IID-area imports into the California ISO, delivered to Imperial Valley and Devers Substations” and conduct a sensitivity case with 2600 megawatts. The CTPG has already evaluated scenarios with a renewable resource development portfolio that includes all existing generation in the IID balancing authority area as well amounts of new renewable generation in the Imperial Valley area that actually exceed the quantities recommended by 8me. The generator interconnection queue portfolio, for example, includes 3040.7 megawatts of new renewable generation in the Imperial North-A, Imperial North-B and Imperial South CREZs. (See the CTPG’s November 8, 2010, response to the Independent Energy Producers’ (“IEPs’”) comments, in particular the worksheet labeled “Generator Data” in the spreadsheet named “CTPG_Phase2_queue_scenario_v7.xls” posted on the CTPG website (www.ctpg.us) under Stakeholder Meetings.) The generator interconnection queue portfolio was evaluated in the CTPG’s Phase 2 studies, and 8me is encouraged to review the results of those studies as described in the CTPG’s final Phase 2 Study Report which is posted on the CTPG website.

Comment:

Though the CTPG did not consider cost, schedule, or relative feasibility of the recommended upgrades in this year's analysis, it should make an exception in the case of the P42/DM Upgrade. Specifically, the Upgrade would be:

- Extremely cost-effective under multiple IID-area generation scenarios. Given the results of CAISO interconnection cluster studies to date, there are few major high-potential renewables areas where a $40 million to $80 million transmission upgrade could enable delivery of so much additional generation.

- Relatively quick, easy, and environmentally friendly. No new transmission lines or rights of way would be required.

CTPG Technical Study Team Response:

The CTPG Technical Study Team appreciates 8me's view that the "Path 42/Devers-Mirage Upgrade" is "extremely cost-effective." Compared to other transmission infrastructure additions identified in the CTPG's studies, the proposed upgrades of Path 42 appear to be relatively low cost and have minimal adverse environmental impacts. However, as noted above, regulatory entities with authority for approving construction of transmission upgrades can be expected to insist on a demonstration that such upgrades are cost-effective relative to other alternatives for meeting renewable resource goals.

The CTPG has decided it will not evaluate alternatives to proposed transmission infrastructure additions and so is not in a position to opine on whether any particular transmission upgrade is "cost-effective" when taking into account these potential alternatives.

Comment:

The CTPG should recognize that the Path 42/Devers-Mirage Upgrade has been studied extensively already, in WECC and other cooperative planning efforts. Path 42 upgrades have been studied several times in the past 10 years and were submitted into the California ISO 2009 Request Window by both Southern California Edison and IID. These upgrades were also studied in detail in the Imperial Valley Study Group effort in 2003 and have been included in virtually every transmission plan for that area of California.

For those reasons, the CTPG should reclassify the P42/DM Upgrade as "high-potential in the final version of the CTPG Transmission Plan.

CTPG Technical Study Team Response:

The methodology used by the CTPG to designate transmission upgrades as "high potential" and "medium potential" does not include any consideration of whether a proposed transmission upgrade was previously studied by other planning organizations. The CTPG believes the designation of "high potential" and "medium potential" transmission upgrades should be made on the basis of objective analysis that uses the most current information available, not on the fact that other planning organizations may have studied these upgrades in the past.