

**Public Comments in the matter of Preparation of the 2011 Integrated Energy Policy
Report, Docket 11-IEP-1G.**

Date: December 23, 2011

Submitted by:
Wayne Stevens
Critical Path Transmission
9400 Lurline Ave
Chatsworth, CA 91311
(818) 760-5480
wstevens@criticalpathtransmission.com

DOCKET	
11-IEP-1G	
DATE	<u>Dec.23 2011</u>
RECD.	<u>Dec.27 2011</u>

Critical Path Transmission thanks the California Energy Commission for the opportunity to submit public comments on the Commission's Executive Summary of the draft *Renewable Power in California: Status and Issues* report. Critical Path Transmission supports the Commission's work to implement the Governor's plan to "expedite permitting of the highest priority (renewable) generation and transmission projects.

Critical Path Transmission supports the recommendations previously submitted by Kern County and the High Desert Power Authority on 07 November 2011 (see appended documents) and respectfully requests that the following comments be considered and included in **Chapter I. Renewable Energy Status and Issues.**

In particular, the comments below (previously submitted by Kern County) should be added on page 41 as new paragraph 3, after line 8, before Table 2. Critical Path Transmission further respectfully requests that Table 2 on page 41 be amended to add The AV Clearview Transmission Project as one of the potential transmission projects that will be needed to provide generation from more than 16,000 MW of additional renewable capacity.

"The Board of Supervisors has always supported the development of responsible renewable generation in Kern County and the County Planning Department has been charged with following through to bring this support to reality... In all, Kern County has 3,900 MW of wind and solar PV in production with 1,875 MW approved and moving into construction and another 3,000 MW in processing."

"Kern County projects are schedule to provide 10,000 MW or 10 GW of renewable energy power by 2015, a goal adopted by the Kern County Board of Supervisors. When implemented, this will drive an estimated 8,000 construction jobs, 1,500 operational jobs and up to \$25 billion in investment in Kern County's future."

..."one of the key recommendations related to the Energy Commission's current work was (to) open up transmission planning to independent and private lines that can be processed faster (2 to 3 years) and be more responsive to need. Renewable energy

investors should not have to wait 7 to 10 years for California planning processes to provide more transmission.”

“Representatives from Kern County have been in discussions with Lancaster Power Authority (one of the two municipal utilities that make up the High Desert Power Authority) for some time regarding their AV Clearview Transmission Project. We have determined that this Project supports both the County’s renewable energy goals and the state of California’s goals as articulated in the CEC’s Executive Summary of the draft *Renewable Power in California: Status and Issues* report.”

“Specifically, the CEC concerns expressed in the Executive Summary include:

CEC Concern	Document Reference	Kern Comments
Permitting Delays	“Planning, permitting and environmental issues can delay or jeopardize project development and increase development costs. Because many renewable resources are located in remote areas, the state will need to upgrade existing or develop new transmission infrastructure to bring electricity from these areas to the state’s load centers. This is made more complex by the current disconnect between generation and transmission planning and permitting processes wherein the length of time needed for transmission development requires transmission project to proceed while there is still uncertainty about where generators will ultimately be located.”	Kern County concurs with the Commission’s concerns and plans to use its experience in permitting large amounts of renewable generation to permit, in a thorough yet expedited manner any transmission projects that fall under Kern’s jurisdiction. Kern County will work closely with any other relevant permitting agencies to insure the same level of CEQA compliance that Kern has achieved on all its renewable projects. This expedited permitting will allow renewable generation developers who have been forced by other proposed transmission project to remote pristine habitats on BLM land back to the abundant resources such as previously disturbed land close to load centers where permitting will be more straightforward and efficient.
Siting of Facilities	Identify and prioritize geographic areas in the state for both renewable utility-scale and distributed generation development. Priority areas should have <u>high levels of renewable resources, be located where development will have the least environmental impact and be close to planned, existing or approved transmission or distribution infrastructure</u>	As the CEC states in the Executive Summary, “Locating renewable facilities on undisturbed and/or sensitive lands in the desert raises a host of environmental concerns, including impacts on sensitive animal and plant species, water supplies and waterways and cultural resources such as areas of historical or ethnographic importance.” The AV Clearview line meets this goal completely. It is situated underground in critical locations and overhead in areas where there is an abundance of other overhead lines. Moreover, the renewable generation it will enable can be built in an area of very high solar resource and an abundance of previously disturbed private land, which is always the preference of permitting

		agencies.
Use of federal financing	"In particular, the state should maximize the use of federal cash grants and loan guarantee programs by prioritizing the permitting and interconnection of California-based renewable energy projects vying for federal stimulus funds."	The Project Sponsors have indicated that with a straightforward upgrade of the existing Kramer-Edwards line, the HVDC version of the AV Clearview Transmission Project can accommodate most of the solar generation projects backed by federal incentives and in fact may be the only transmission solution that can support these projects before the expiration of the Investment Tax Credit at the end of 2016.

"The AV Clearview Transmission Project has been under development for over two years and its sponsors have spent considerable effort to bring together a strong, broad-based coalition of supportive stakeholders including Edwards Air Force Base, various communities in the Antelope Valley as well as staff and elected officials in Los Angeles County. Instead of facing the typical transmission development hurdles of fierce local opposition, the AV Clearview Project is starting the permitting process with strong local support."

Kern County Planning recommends to the California Energy Commission that the AV Clearview Transmission Project be included as a baseline project in any projections made by the Commission regarding which transmission projects will be constructed and where solar generation will be located. Specifically, the AV Clearview Transmission Project will enable solar development close to load centers on previously disturbed agricultural land with some of the highest solar resource in California. Kern County Planning also anticipates that the AV Clearview Transmission Project will not face the same level of permitting uncertainty that other projects may face crossing pristine desert elsewhere in the state."

"As the CEC points out in the Executive Summary,

Renewable development at the local level will be an essential component of the state's efforts to meet its renewable energy goals. Local governments are closely involved in land use decisions, environmental review and permitting for a wide range of renewable projects. Many local governments face constraints due to scaled-back staffing as a result of the economic downturn, limited expertise about renewable technologies and lack of energy elements in their general plans and ordinance that could delay the processing of permits for renewable facilities. However, a number of local jurisdictions are showing strong leadership and innovation in promoting renewable energy development, including Kern County..."

"Kern County will continue to demonstrate the critical leadership and pioneering thinking required to make the California's renewable energy goals a reality. Kern County Planning anticipates commencing the permitting process for the AV Clearview Transmission Project this month and moving the project forward expeditiously with the same level of professionalism and expertise employed in the successful permitting of many renewable generation projects."

**PLANNING AND COMMUNITY
DEVELOPMENT DEPARTMENT**

Lorelei H. Oviatt, AICP, Director

2700 "M" STREET, SUITE 100
BAKERSFIELD, CA 93301-2323

Phone: (661) 862-8600

FAX: (661) 862-8601 TTY Relay 1-800-735-2929

E-Mail: planning@co.kern.ca.us

Web Address: www.co.kern.ca.us/planning



DEVELOPMENT SERVICES AGENCY

Planning and Community Development
Engineering, Surveying and Permit Services
Roads Department

**DOCKET
11-IEP-1G**

DATE NOV 07 2011

RECD. NOV 07 2011

November 7, 2011

California Energy Commission

Dockets Office, MS-4

Re: Docket No. 11-IEP-1G

1516 Ninth Street

Sacramento, CA 95814-5512

**Re: Comments on Preparation of the 2011 Integrated Energy Policy Report
Docket 11-IEP-1G**

Dear Commissioners,

Thank you for the opportunity to comment on the Draft Renewable Power in California: Status and Issues Report to reflect Kern County's experience with permitting and construction of renewable energy. Kern County has pioneered the development of new energy sources since the 1890s. Our energy sector continues to support our economy at a pace not seen in any other areas of California. Investment in Kern County is strong and reflects our commitment to innovation, modern technology and business friendly permitting.

From an updated \$280 million natural gas processing plant for Occidental of Elk Hills to the Chevron Project Brightfield that is testing next-generation solar energy technologies on a former Chevron oil refinery our streamlined permitting process brings projects online for our oil and gas industry while protecting the environment and respecting neighboring land uses. Kern County is also home to many innovative projects using biomass, alternative fuels and biogas from animal waste.

Continuing our growth in renewable energy, this year construction continued on the next phase of the Southern California Edison Tehachapi Renewable Transmission Project for 4,500 MW of new capacity. Solidifying our reputation as the place to do green business, Terra-Gen Power broke ground and is in construction on the world's largest wind project – Alta Wind Energy Center within Kern County's Tehachapi Wind Resource Area completely in Kern County. When completed, the Alta Wind Energy Center will have the capacity to generate 1,500 MW of renewable energy, enough to supply over 1.1 million people. The Alta project is creating more than 3,000 construction, operation and maintenance jobs and contributed more than \$1.2 billion to the local economy of Kern County. Construction of wind projects by Corum/Brookfield, Iberadrola, NextEra and enXco will bring another 1,200 MW of wind on line in 2012. To see the impacts on employment from renewable energy, visitors to Kern County only have to drive through the community of Mojave to see motels full of construction professionals and millions of dollars of wind turbine components being staged at the Mojave Air and Spaceport.

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The commercial solar industry moved from concept to reality this year with 1,200 MW of project approvals in both the Central Valley and West Mojave Desert. Agricultural processors added rooftop and distributed solar to their facilities, a 1 MW project now fuels the pumps for an oilfield and the County is installing panels on the County Administration building to lower energy costs. In all, Kern County has 3,900 MW of wind and solar PV in production with 2,195 MW approved and moving into construction and another 3,000 MW in processing. Kern County projects are scheduled to provide 10,000 MW or 10 GW of renewable energy power by 2015, a goal adopted by the Kern County Board of Supervisors. When implemented, this will drive an estimated 8,000 construction jobs, 1,500 operational jobs and up to \$25 billion in investment in Kern County and California's future.

The Board of Supervisors has always supported the development of responsible renewable generation in Kern County and the County Planning and Community Development Department has been charged with following through to bring this support to reality.

As I recently testified to the Little Hoover Commission¹:

In all, Kern County has 3,900 MW of wind and solar PV in production with 1,875 MW approved and moving into construction and another 3,000 MW in processing.

Kern County projects are schedule to provide 10,000 MW or 10 GW of renewable energy power by 2015, a goal adopted by the Kern County Board of Supervisors. When implemented, this will drive an estimated 8,000 construction jobs, 1,500 operational jobs and up to \$25 billion in investment in Kern County's future.

Among the eleven issues discussed in my testimony, one of the key recommendations related to the Energy Commissions current work was:

Open up transmission planning to independent and private lines that can be processed faster (2 to 3 years) and be more responsive to need. Renewable energy investors will not wait 7 to 10 years for California planning processes to provide more transmission.

Representatives from Kern County have been in discussions with Lancaster Power Authority (one of the two municipal utilities that make up the High Desert Power Authority) for some time regarding their AV Clearview Transmission Project. We have determined that this Project supports both the County's renewable energy goals and the state of California's goals as articulated in the CEC's Executive Summary of the draft *Renewable Power in California: Status and Issues* report.

Specifically, the CEC concerns expressed in the Executive Summary include:

CEC Concern	Document Reference	Kern Comments
Permitting Delays	<p>"Planning, permitting and environmental issues can delay or jeopardize project development and increase development costs. Because many renewable resources are located in remote areas, the state will need to upgrade existing or develop new transmission infrastructure to bring electricity from these areas to the state's load centers. This is made more complex by the current disconnect between generation and transmission planning and permitting processes wherein the length of time needed for transmission development requires transmission project to proceed while there is still uncertainty about where generators will ultimately be located."</p>	<p>Kern County concurs with the Commission's concerns and plans to use its experience in permitting large amounts of renewable generation to permit, in a thorough yet expedited manner any transmission projects that fall under Kern's jurisdiction. Kern County will work closely with any other relevant permitting agencies to insure the same level of CEQA compliance that Kern has achieved on all its renewable projects. This expedited permitting will allow renewable generation developers who have been forced by other proposed transmission project to remote pristine habitats on BLM land back to the abundant resources such as previously disturbed land close to load centers where permitting will be more straightforward and efficient.</p>
Siting of Facilities	<p>Identify and prioritize geographic areas in the state for both renewable utility-scale and distributed generation development. Priority areas should have <u>high levels of renewable resources, be located where development will have the least environmental impact and be close to planned, existing or approved transmission or distribution infrastructure</u></p>	<p>As the CEC states in the Executive Summary, "Locating renewable facilities on undisturbed and/or sensitive lands in the desert raises a host of environmental concerns, including impacts on sensitive animal and plant species, water supplies and waterways and cultural resources such as areas of historical or ethnographic importance." The AV Clearview line meets this goal completely. It is situated underground in critical locations and overhead in areas where there is an abundance of other overhead lines. Moreover, the renewable generation it will enable can be built in an area of very high solar resource and an abundance of previously disturbed private land, which is always the preference of permitting agencies.</p>
Use of federal financing	<p>"In particular, the state should maximize the use of federal cash grants and loan guarantee programs by prioritizing the permitting and interconnection of California-based renewable energy projects vying for federal stimulus funds."</p>	<p>The Project Sponsors have indicated that with a straightforward upgrade of the existing Kramer-Edwards line, the HVDC version of the AV Clearview Transmission Project can accommodate most of the solar generation projects backed by federal incentives and in fact may be the only transmission solution that can support these projects before the expiration of the Investment Tax Credit at the end of 2016.</p>

November 7, 2011

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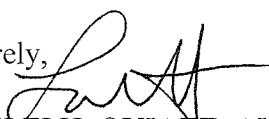
The AV Clearview Transmission Project has been under development for over two years and its sponsors have spent considerable effort to bring together a strong, broad-based coalition of supportive stakeholders including Edwards Air Force Base, various communities in the Antelope Valley as well as staff and elected officials in Los Angeles County. Instead of facing the typical transmission development hurdles of local opposition and unresolved issues, the AV Clearview Project is starting the permitting process with strong local support.

Kern County Planning and Community Development recommends to the California Energy Commission that the AV Clearview Transmission Project be included as a baseline project in any projections made by the Commission regarding which transmission projects will be constructed and where solar generation will be located. Specifically, the AV Clearview Transmission Project will enable solar development close to load centers on previously disturbed agricultural land with some of the highest solar resource in California. Kern County Planning and Community Development also anticipates that the AV Clearview Transmission Project will not face the same level of permitting uncertainty that other projects may face crossing pristine desert elsewhere in the state.

As the CEC points out in the Executive Summary,

Renewable development at the local level will be an essential component of the state's efforts to meet its renewable energy goals. Local governments are closely involved in land use decisions, environmental review and permitting for a wide range of renewable projects. Many local governments face constraints due to scaled-back staffing as a result of the economic downturn, limited expertise about renewable technologies and lack of energy elements in their general plans and ordinance that could delay the processing of permits for renewable facilities. However, a number of local jurisdictions are showing strong leadership and innovation in promoting renewable energy development, including Kern County...

Kern County will continue to demonstrate the critical leadership and pioneering thinking required to make the California's renewable energy goals a reality. Kern County Planning and Community Development anticipates commencing the CEQA document for the permitting process for the AV Clearview Transmission Project this month and moving the project forward expeditiously with the same level of professionalism and expertise employed in the successful permitting of many renewable generation projects.

Sincerely, 

LORELEI H. OVIATT, AICP, Director
Kern County Planning & Community Development

LHO:jb

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cc: Clerk of the Board

County Administrative Office

City of Lancaster

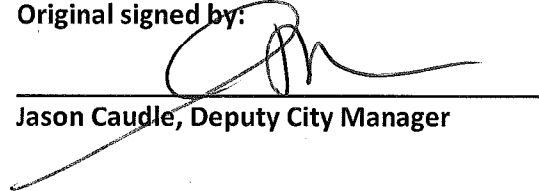
DATE NOV 07 2011

RECD. NOV 07 2011

Public Comments in the matter of Preparation of the 2011 Integrated Energy Policy Report.
Docket 11-IEP-1G.

Submitted by:
Jason Caudle, Deputy City Manager
City of Lancaster
On behalf of
High Desert Power Authority
44933 North Fern Avenue
Lancaster, CA 93534
(661) 723-6000
jcaudle@cityoflanasterca.org

Original signed by:


Jason Caudle, Deputy City Manager

Executive Summary

High Desert Power Authority agrees with the general conclusions and recommended strategies as described in the Executive Summary of draft *Renewable Power in California: Status and Issues* report.

However, regarding the Transmission Issues section starting on Page 9, Table ES-5 is incomplete in that it does not include the AV Clearview Transmission Project that has been under development for over two years. Just as importantly, the Table lacks critical data that is required for the CEC and other agencies to make any meaningful evaluation of impending transmission projects.

Specifically, without inclusion of 1) some measure of economic cost (for example, cost per MW of renewable generation accessed) and 2) some measure (even if only qualitative) of the environmental impact of the various transmission projects, then the CEC runs the risk of painting itself in the same corner the CAISO finds itself: inclusion of projects in the Statewide Transmission Plan that are completely devoid of any economic or environmental evaluation or consideration.

The CAISO's ineffectual process has had serious consequences: projects already included in the CAISO Statewide Transmission Plan have permitting challenges so great that they are unlikely to be overcome in the CPUC permitting process, resulting in more uncertainty, more delays, less jobs and greater cost to the ratepayers. The objective of this CEC process is not to meet the RPS standards *at any cost*, but to meet our renewable energy goals in the most efficient, economical and environmentally sensible manner, which the hallmark of prudent governance.

Most critically, as described below, the AV Clearview Project is *the only* transmission project that will enable ARRA-driven projects east of Kramer to be built and on line before the 2016 deadline regarding the expiration of the Section 48 Investment Tax Credit.

Public Comments in the matter of Preparation of the 2011 Integrated Energy Policy Report,
Docket 11-IEP-1G.

Submitted by:
Jason Caudle, Deputy City Manager
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On behalf of
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Executive Summary

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Most critically, as described below, the AV Clearview Project is *the only* transmission project that will enable ARRA-driven projects east of Kramer to be built and on line before the 2016 deadline regarding the expiration of the Section 48 Investment Tax Credit.

Background:

The High Desert Power Authority is a Joint Powers Authority between the City of Lancaster and the City of Pittsburg.

The City of Lancaster's mission through the Lancaster Power Authority is to foster the development of renewable generation in the Antelope Valley, which is ideal for solar energy because of the excellent solar resource, abundance of previously disturbed, privately owned, agricultural land, proximity to load and community support of renewable energy.

The City of Pittsburg through its Pittsburg Power Company brings its expertise as an owner of energy infrastructure and as a developer of generation and transmission assets.

Together, as High Desert Power Authority, these two municipal utilities are working with other advocates, such as Edwards Air Force Base and Kern County to develop, permit and construct the AV Clearview Transmission Project.

The Project:

The AV Clearview Transmission Project consists of:

- A multiple circuit, underground north-south segment which connects a new substation named Yeager located on the northern boundary of Edwards Air Force base and extends south to the community of Littlerock to a new substation named Tucker.
- Tucker substation at the southern terminus will interconnect with the SCE Vincent-Lugo Lines, and is also capable of interconnecting with the adjacent LADWP Rinaldi-Victorville and Toluca-Adelanto lines, allowing renewable generation to flow to LADWP and providing a strategic additional interconnection between California's two largest balancing authorities.
- A multiple circuit, overhead east-west segment from the new Yeager substation west to the existing SCE Windhub substation
- The new Yeager substation will also splice into the existing SCE Kramer-Edwards line which will become a new Kramer-Yeager line
- The new Kramer-Yeager line may be reconducted and energized at a higher voltage by SCE or, alternately, High Desert Power Authority can reinforce the SCE line at a higher voltage on a new higher voltage Kramer-Yeager line constructed on Edwards AFB right of way. This configuration of the AV Clearview Project will not only facilitate the ARRA-driven solar projects east of Kramer Junction, but is the *only* transmission project that can be permitted and constructed in time for the ARRA-driven projects to be constructed before the December 31, 2016 expiration of the solar Investment Tax Credit.
- The new Yeager substation can also include integrated, "substation-level" energy storage (as opposed to energy storage at each individual renewable generator) that will efficiently and economically support better integration of the intermittent wind and solar generators interconnected line.
- Both AC and HVDC options exist for the underground portion (between the Yeager and Tucker substations) of the Project. The AC option is a double-circuit 345kV design with a line capacity of 2,100 MW. The DC option is a ± 300 kV design with a line capacity of 1,000 MW per circuit, with three such circuits anticipated in the event of reconductoring of the Kramer-Yeager line and interconnection at the Tucker substation to both the Vincent-Lugo line and the adjacent LADWP lines. The HVDC design is based on state-

of-the-art voltage source converters and uses high frequency PWM allowing for independent control of both active and reactive power. Besides the extraordinary carrying capacity with only 2 cables per circuit, the HVDC design has the added benefits of significantly upgraded grid stability and facilitating better integration of intermittent generation.

The underground portion of the project will be built along county road utility right of way in Los Angeles County, Edwards Air Force Base, and the City of Lancaster. The route of the overhead portion of the project is a combination of right of way on Edwards AFB, right of way controlled by Kern County and other right of way in Kern County (see map below).



Schedule

Permitting of the project will commence this month with Kern County and the City of Lancaster as co-lead agencies under CEQA and Edwards AFB the lead agency under NEPA. It is estimated that permitting will be complete in Q4 2012 or Q1 2013, followed shortly thereafter by construction start.

Permitting studies are considering both the AC and HVDC design versions of the transmission line and substations. The permitting process will also include the option to reinforce the Kramer-Yeager (currently Kramer-Edwards) line to 500 kV (initially energized at 230 kV) in order to support the interconnection of ARRA-related solar projects located east of the Kramer substation. Construction of the AV Clearview Project is estimated to take 24 months, with a commissioning date in the first quarter of 2015.

Comparative Advantages

Relative to projects “south of Kramer”, the AV Clearview Transmission project:

- The AV Clearview Transmission Project can be completed 2-3 years sooner enabling the creation of thousands of high-paying construction jobs in 2013, 2014 and 2015 instead of later in the decade
- The AV Clearview Transmission Project is substantially less expensive in terms of dollar price per MW of renewable generation capacity accessed by the grid
- The AV Clearview Transmission Project will have substantially less environmental impact than proposed projects “south of Kramer”. In fact, the Lugo-Pisgah and Red Bluff projects, according to Southern California Edison, “face extraordinary commercial and licensing risks. Both Lugo-Pisgah and Red Bluff will cross near the habitats of several protected species (including the desert tortoise, and several species of desert plants), requiring complex environmental reviews under both state and federal law.”¹ SCE uses the same language describing the Cool Water-Lugo Project: “South of Kramer will cross near the habitats of several protected species (including the desert tortoise and several species of desert plants) and will require complex environmental reviews under both state and federal law.”²
- The probability of the AV Clearview Project receiving a permit to construct is significantly greater than the “south of Kramer” projects currently in the CAISO Statewide Transmission Plan. Uncertainty is the worst enemy of developers and it is common knowledge in the industry that the phrase “inclusion in the CAISO Statewide Plan does not guarantee a CPCN from the CPUC” refers specifically to “south of Kramer” projects.
- AV Clearview can provide grid access to ARRA-supported generation projects at a tremendous savings to the ratepayers of California via the local PTO reconductoring the Kramer-Yeager (currently Kramer-Edwards) line or by High Desert Power Authority reinforcing that line with a new 500 kV line on Edwards AFB right of way.

Table ES-5

It is imperative that the CEC include some measure of both economic and environmental cost to Table ES-5. High Desert Power Authority has made a first cut at adding critical information to Table ES-5 of the Executive Summary based on publically available information but will leave it to the Commission to complete this task with its better access to this type of data.

In addition, the Commission should provide references to the information contained in Table ES-5. For example, Table ES-5 lists the “Deliverability Potential of Lugo-Pisgah as 1,750 MW where in the SCE Petition to FERC speaks of “transmission capacity [of] at least 1,400 MW.”³ Table ES-5 lists the “Deliverability Potential” of the Sunrise Powerlink Project at 1,700 MW at a cost of \$1,000M whereas the CPUC indicates that the capacity of the line is 1,000 MW and is

¹ Page 33 of Southern California Edison Company’s Petition for Declaratory Order under EL10-81, Vol. 1, Aug 4, 2010 available at http://elibrary.ferc.gov/idmws/File_list.asp?document_id=13837704

² Page 30 of Southern California Edison Company’s Petition for Declaratory Order under EL11-10, Vol. 1, Dec 9, 2010 available at http://elibrary.ferc.gov/idmws/File_list.asp?document_id=13872460

³ Page 3 of Southern California Edison Company’s Petition for Declaratory Order under EL10-81, Vol. 1, Aug 4, 2010 available at http://elibrary.ferc.gov/idmws/File_list.asp?document_id=13837704

estimated to cost \$1.256 M⁴ and the SDG&E website indicates capacity of 1,000 MW and a cost of \$1,883M⁵.

Finally, the Commission should define the term “Deliverability Potential” in Table ES-5 and distinguish between “Deliverability Potential” and “Line Capacity” (a somewhat more precise term) of each project in the Table.

Conclusions

California desperately needs transmission infrastructure investment to provide access to renewable generation, improve system stability, create jobs, and leverage federal subsidies. Our high desert communities strongly support this project because the AV Clearview transmission line represents smart, near-term investment in our state infrastructure and our solar future.

The AV Clearview Transmission Project is a lower cost, environmentally responsible alternative transmission proposal that can enable the same amount of renewable generation as the proposed Pisgah-Lugo, Coolwater-Lugo and Barren Ridge projects combined. It is the only project that can be permitted and constructed to enable interconnection of ARRA-driven projects before the 2016 expiration of the investment tax credit. It is the only project that starts the permitting process with unprecedented support of local governments and Edwards Air Force Base (which views the AV Clearview Project as a means to fulfill Department of Defense renewable energy mandates as well as increase the energy security of the Base, which, in turn, enhances the mission readiness of the Base).

We ask that the AV Clearview Transmission Project be included as a baseline project in the Executive Summary and we invite the California Energy Commission to become an advocate of the project to the CAISO, CTPG and CPUC.

⁴ <http://www.cpuc.ca.gov/PUC/energy/Environment/Current+Projects/A0512014.htm>

⁵ http://www.sdge.com/sunrisepowerlink/docs/srpl_whitepaper.pdf

Balancing Authority	Transmission	Served CREZ	Cumulative Renewable Deliverability Potential (MW) With Upgrade	Expected Commercial On-Line Date	Total Cost, \$M	Cost per MW Accessed to Grid	Environmental Impact
CAISO	Sunrise Powerlink (new 500 kV and 230 kV lines)	Imperial North and South, San Diego S	4,700 1,000	2012	\$1,000 1,883	1.88 ⁶	TBD
CAISO	Tehachapi Renewable Transmission Project	Tehachapi, Fairmont	4,500	2015	\$2,100	0.47	LOW
CAISO	Colorado River	Riverside East, Palm Springs	4,700 combined with West of Devers project	2013	?	?	TBD
CAISO	Eldorado-Ivanpah 115 to 230 kV conversion	Mountain Pass	1,400	2013	\$483	\$0.35	MIXED ⁷
CAISO	Borden-Gregg (230 kV line reconductoring)	Westlands	800	2015	TBD	TBD	TBD
CAISO	South of Contra Cost reconductoring	Solano	535	2015	TBD	TBD	TBD
CAISO	Pisgah-Lugo 230 kV to 500 kV conversion	Pisgah, Mountain Pass	1,400 ⁸ -1,750	2017	740	\$0.53	HIGH ⁹
CAISO	Carrizo-Midway sections of Morro Bay-Midway (230 kV lines reconductoring)	Carrizo South, Santa Barbara	900	2012	TBD	TBD	TBD
CAISO	Coolwater-Jasper-Lugo (new 230 kV line and other upgrades)	Kramer	700	2018	\$542	\$0.77	HIGH ¹⁰
CAISO	AV Clearview – 345 kV Design	Tehachapi, Fairmont	2,100	2015	\$890	\$0.42	LOW ¹¹
CAISO	AV Clearview – HVDC Design	Tehachapi, Fairmont, Kramer	3,000+	2015	\$1,200	\$0.42	LOW
CAISO/IID	Path 42 Upgrades	Imperial Valley	1,400	2015	TBD	TBD	TBD
IID	Internal IID Upgrades	Imperial Valley	See above	2011+	TBD	TBD	TBD
LADWP	Barren Ridge	Tehachapi, Barren Ridge	1,000	2016	TBD	TBD	TBD

⁶ http://www.sdge.com/sunrisepowerlink/docs/srpl_whitepaper.pdf

⁷ Low impact for reconductoring the Eldorado-Ivanpah line; extreme impact from enabling the Brightsource Ivanpah Generation Project: See <http://www.pe.com/local-news/topics/topics-environment-headlines/20110427-mojave-desert-solar-project-would-disturb-thousands-of-tortoises.ece>

⁸ Page 3 of Southern California Edison Company Petition for Declaratory Order under EL10-81, Volume 1, Aug 4, 2010 available at http://elibrary.ferc.gov/idmws/File_list.asp?document_id=13837704

⁹ Page 5 of Southern California Edison Company's Petition for Declaratory Order under EL10-81, Volume 1, Aug 4, 2010 available at http://elibrary.ferc.gov/idmws/File_list.asp?document_id=13837704: "The Projects face extraordinary commercial and licensing risks. Both Lugo-Pisgah and Red Bluff will cross near the habitats of several protected species (including the desert tortoise, and several species of desert plants), requiring complex environmental reviews under both state and federal law."

¹⁰ Page 30 of Southern California Edison Company's Petition for Declaratory Order under EL11-10, Volume 1, Dec 9, 2010 available at http://elibrary.ferc.gov/idmws/File_list.asp?document_id=13872460: "South of Kramer will cross near the habitats of several protected species (including the desert tortoise and several species of desert plants) and will require complex environmental reviews under both state and federal law."

¹¹ Transmission mostly underground; enables renewable generation on previously disturbed, privately owned agriculture land near load centers