



<b>DOCKET</b>	
<b>07-AFC-8</b>	
DATE	<u>MAR 18 2008</u>
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March 18, 2008

Mr. B.B. Blevins  
Executive Director  
California Energy Commission  
1516 Ninth Street  
Sacramento, CA 95814-5512

Subject: Carrizo Energy Solar Farm (07-AFC-8)  
Applicant's Responses to Comments from the Informational Hearing  
URS Project No. 22239472.01800

Dear Mr. Blevins:

On behalf of Ausra CA II, LLC (dba Carrizo Energy, LLC), URS Corporation Americas (URS) hereby submits the Applicant's Responses to Comments from the Informational Hearing held on January 29, 2008.

I certify under penalty of perjury that the foregoing is true, correct, and complete to the best of my knowledge. I also certify that I am authorized to submit the Applicant's Responses to Comments from the Informational Hearing on behalf of Carrizo Energy, LLC.

Sincerely,

URS CORPORATION

Angela Leiba  
Project Manager

AL:ml

Attachments

APPLICANT'S RESPONSES TO COMMENTS FROM INFORMATIONAL HEARING (CARRIZO ENERGY SOLAR FARM [07-AFC-8])					
No.	Speaker	Page/Line Location	Question	Subject	Response
52	Mr. Ruskovich	Page 53, Line 6	This is a new corporation . . . They don't know how to bid on land and how to build something without looking at the cost of bringing material in to the project site.	Ausra	Ausra, Inc. was founded in 2006; however, its employees have decades of experience in their respective fields and in the development of power generation facilities
II	Ms. Harvey, cont.	Page 61, Line 24	And this area has a lot of winds and little cyclone kind of things, so it's easy to raise the PM10 level.	Air Quality	<p>Data from the closest full-time weather station at La Panza show that winds in the project area are generally light and averaged just 3.3 miles per hour from 2001 through 2005, with calm conditions accounting for almost 28% of annual hours. No long-term data are available for the immediate Project area, which most likely experiences somewhat higher winds than La Panza, owing to its less sheltered location on a more elevated plain. Small- and large-scale wind circulations will have the potential to raise some dust over exposed areas within the site boundaries and on all other properties that are similarly situated on the Carrizo Plain.</p> <p>During project construction, watering of disturbed areas will be conducted as frequently as needed to prevent extended dust plumes. During CESF operations, the plant will be required to comply with San Luis Obispo APCD Rules 401 and 402, which prohibit extended visible plume emissions "from any source whatsoever" and prohibit any emissions that would cause a nuisance or adverse health impact to any group of the general population. In any case the solar power facility is expected to generate less dust than agricultural operations such as tilling.</p>
82	Ms. Harvey, cont.	Page 62, Line 21	Since a number of the commuters coming here might be coming from Taft, that road is subject to tule fog about halfway up during the winter, also.	Air Quality	Comment noted.
34	Mr. Ruskovich	Page 47, Line 24	There is a proposed piece of property out in this area that would be perfect for this plant. And it's an industrial area.	Alternatives	The Applicant has completed extensive site selection research, and chose the CESF site location based on a series of filters. Please refer to the Project AFC, Section 4.0, Alternatives and the Alternatives section in the Responses to Data Requests for additional information.
54	Mr. Ruskovich, cont.	Page 53, Line 23	I can even show you the proposed land tomorrow morning. . . and the U.S. Department of Energy own the land.	Alternatives	<p>There is not a specific parcel indicated by Mr. Ruskovich so Applicant has no way to adequately evaluate the feasibility of obtaining the site indicated. As to the general area indicated by Mr. Ruskovich, Applicant did consider the area and considers it inferior to the proposed site on a variety of dimensions: solar resource, land use feasibility, water availability and use.</p> <p>1. The CESF site has a better solar resource than the area indicated by Mr. Ruskovich due to higher potential incidence of cloud cover and fog in that area.</p> <p>2. Applicant considers the process for site certification on DOE or BLM land to be untested in the context of solar thermal in California and therefore uncertain, putting the project schedule at risk.</p> <p>3. Based upon the location described, it appears that the California Aqueduct managed by DWR crosses through the area identified. Westside Canal is also in the vicinity. The use of aqueduct or canal water is not typically the preferred source for water from the regulators' standpoint.</p>

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No.	Speaker	Page/Line Location	Question	Subject	Response
27	Mr. Maruska	Page 42, Line 15	Could you just explain briefly what is the [biological] issue triggering the particular [biological] concern?	Biological Resources	The project is located within the Carrizo Plain and contains habitat that may support the San Joaquin kit fox, a federally endangered species, as foraging habitat.
28	Mr. Maruska, cont.	Page 42, Line 17	and what about the project is prompting that concern?	Biological Resources	The project is within the Carrizo Plain, and San Joaquin kit fox may forage or pass through the site.
29	Mr. McCullough	Page 44, Line 5	It was a question, could this [permitting for kit fox habitat] stop the project?	Biological Resources	The project requires permits and approvals before it can commence construction. Carrizo Energy does not anticipate biological resources resulting in failure to receive the necessary permits
30	Mr. Ruskovich	Page 46, Line 20	Why are you just talking about the kit fox, according to the federal government? We have the condor; we have eagles, hawks. We have elk. We have vernal pool shrimp. I can't do anything with my land because this is what's on my land	Biological Resources	Eagles, hawks, and other species listed by the speaker are not federally endangered species. The AFC addresses each of these species; however, they are expected to use the habitat on the site. Condor is a listed species, but the use of the project site is not sufficient to expect an adverse impact to this species. There is no suitable habitat for vernal pools onsite. Please refer to Appendix L, Biological Resources, of the Project AFC, for additional information on species associated with the CESF project.
31	Mr. Ruskovich, cont.	Page 47, Line 5	The vernal shrimp [discuss vernal pools]...	Biological Resources	No vernal pool habitat is present in the Project area.
32	Mr. Ruskovich, cont.	Page 47, Line 8	[What about the presence of] the native Carrizo Grass?	Biological Resources	The native species Carrizo Grass is not present in the Project area.
33	Mr. Ruskovich, cont.	Page 47, Line 13	Why BLM is not here at this meeting representing stop to this growth?	Biological Resources	BLM has been contacted. The CESF project is not proposed on BLM-managed lands. The permitting process includes reaching out to all potentially affected agencies and parties. The BLM is among these. To date, the Applicant nor the CEC has received requests for any additional information from the BLM relating to the proposed CESF project.
45	Ms. Klock, cont.	Page 51, Line 21	And with the grass situation the way it is, I'm afraid of catalytic burners on cars going across my property, or ATVs.	Biological Resources	Best Management Practices will be followed during construction and operation of the plant that will help prevent fires.
47	Ms. Klock, cont.	Page 52, Line 2	I'm apprehensive, a lot of the land in this area is in the conservation reserve program.	Biological Resources	The project area is outside of the conservation reserve program.
79	Ms. Harvey, cont.	Page 61, Line 22	I have concerns about what the method of vegetation control is going to used because usually these things are sterile.	Biological Resources	Vegetation control is not anticipated other than topical herbicides.

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87	Ms. French	Page 67, Line 4	the Sierra Club is watching this project very closely . . . Santa Lucia Chapter, and the California/Nevada Regional Conservation Committee, which takes in all of California and Nevada.	Biological Resources	Comment noted.
49	Ms. Klock, cont.	Page 52, Line 13	Where will families live that will be on the -- the project workers?	Construction Workers	The Project construction workforce is provided in Section 3.4.13.1.9 and Table 3.4-11 of the Project AFC. The Project operations workforce is provided in Section 3.4.14 of the Project AFC. In addition, responses to Data Adequacy Requests 11 and 12, the Carrizo Energy Solar Farm (CESF) will not indirectly cause a population increase to the local Shandon-Carrizo planning area. All of the workers are expected to commute to the Project site from various areas of San Luis Obispo County and Bakersfield, and no workers are expected to relocate to the local Shandon-Carrizo planning area as a result of employment at the CESF; however, possibly up to 6 to 12 non-local workers will relocate within other areas of San Luis Obispo to shorten the commute.
50	Ms. Klock, cont.	Page 52, Line 14	Will they be buses in every day and out every night?	Construction Workers	Yes. The Applicant will set up carpool and busing points based on the number of workers in locations including San Luis Obispo County and Bakersfield as indicated in the Project AFC. Traffic impacts associated with these buses were evaluated in Section 5.11, Traffic and Transportation, of the Project AFC. Specifically, please refer to Section 5.11.2.
69	Mr. Krier, cont.	Page 59, Line 1	But I'd welcome to have this in our area for jobs.	Construction Workers	See 49 above.
1	Audience Speaker	Page 22, Line 14	Could you repeat those [downsides of parabolic dishes] and why you are essentially using flat plate technology instead of parabolics?	Engineering	<p>Parabolic troughs have good optical efficiency and are a proven technology for solar thermal generation. But there are several key factors that make them less efficient on a \$/kW capacity scale. The first is that they have comparatively short focal lengths which require tight curvature in the glass mirrors. In order to curve the glass to the degree required, slumped mirror glass must be used, which warrants an expensive manufacturing process. Ausra's technology, on the other hand, still uses curved glass but has long enough focal lengths that standard, flat mirror glass can be curved elastically when the reflectors are assembled.</p> <p>The second area where parabolic troughs are at a disadvantage is the amount of steel or aluminum structure required to back the mirrors, because of the deep curvature. Essentially, the shape of the troughs makes them highly susceptible to wind loading, requiring extensive structural support behind the glass to counteract it. Ausra's CLFR technology allows mirrors to be rolled over, presenting a very flat profile for wind loading, minimizing the amount of steel structure required to support the mirror face.</p> <p>The third area where parabolic trough costs limit the economics of the technology is that the focused light is used to heat up oil or molten salt in a vacuum sealed pipe. Oil and salt are highly corrosive and require specialized, expensive piping to transport it. Additionally, in order to produce steam, an extra step is required where water is circulated past the hot oil in a heat exchanger--this drops efficiency and increases cost. By contrast, the CLFR technology involves running clean water through standard steel pipes, lowering cost for piping and eliminating the need for a heat exchanger. Ausra's design and pipe technology also allows efficient production without vacuum tubes.</p>
2	Ms. Holmes	Page 22, Line 24	What's the purpose of the steam drum?	Engineering	<p>The purpose of the steam drum is to have a fixed steam-water separation point where the 2-phase mixture is divided into 2 separate streams: saturated steam and saturated water.</p> <p>Additionally, the steam drum serves the following purposes:</p> <ol style="list-style-type: none"> <li>1) it separates out water that has not boiled after going through the receiver from the steam. The steam can then flow out of the drum and into the steam turbine. The separated water is recirculated back through the receiver again to convert it to steam.</li> <li>2) it allows the CLFR system to continue to produce power during sporadic sun conditions by providing a small amount of extra steam capacity;</li> <li>3) it stores extra water that isn't boiled into steam during morning and afternoon operation and allows it to be recirculated.</li> </ol>

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5	Ms. Harvey, cont.	Page 23, Line 14	How does that [air cooling] work?...What is being cooled?	Engineering	Air cooling works by blowing ambient air across pipes carrying steam that has exited the steam turbine. The pipes are configured with as much surface area as possible to allow the air blowing across them to cool the steam inside until it condenses back into water. The condensing step is necessary in a steam cycle to decrease the pressure on the downstream side of the turbine so the steam will flow and is an important process for maximizing the efficiency of a turbine. Air cooling is a more expensive, less efficient method for condensing steam in a steam cycle when compared to wet cooling, which uses circulating water to cool the steam in pipes. A wet cooling option was not considered for the CESF because of the amount of water necessary to operate it.
6	Ms. Harvey	Page 24, Line 20	What's the capacity of the one [1 MW site] in Australia? This one seems much larger. And I assume you don't have experience with something this large.	Engineering	Ausra has installed 2 lines at Liddell Power Station, near Singleton, NSW, Australia. Each line produces peak energy of about 4.5 MW thermal. Liddell Power Station has an option to purchase up to 20 lines, which will give approximately 90 MW thermal energy, converting to between 30-34 MW electrical power. The CESF will be the largest plant Ausra has built to date. Additionally, Ausra will be commissioning a 5 MWe plant this summer near Bakersfield, CA.
15	Mr. Stoddard, cont.	Page 27, Line 12	What impact those lenses and fresnel lenses and mirrors would have?	Engineering / Visual	The Project does not include the use of fresnel lenses. If the stated concern is the impacts associated with glint/glare from the CESF fresnel mirrors, please see Responses to Data Requests 07, 71, and 72 for a description of potential glint/glare impacts associated with the CESF mirrors.
24	Ms. Bell	Page 31, Line 25	I'd like to know about the air-cooled condensers. The two of them, why they have to be 115 feet tall.	Engineering	The air cooled condensers must move large volumes of air with large fans located inside. Unfortunately, the requirement to move a large volume of air requires a large structure. The height of the air cooled condensers allow for clean air to be pulled into the units. With the large volume of air moving through these units, a lower structure height would pick up dust and dirt with the air which accumulates on the fans and reduces efficiency of the units. In addition, with the current design, the air cooled condensers only require one washing per year. The increased dust and dirt accumulation associated with a shorter structure would require additional washings throughout the year. Therefore, the height of the condensers also provide for increased water efficiency for the CESF Project.
25	Ms. Bell, cont.	Page 32, Line 2	Couldn't there be an alternate design that was more horizontal so there wasn't such a visual impact?	Engineering	See 24 above.
19	Ms. Nolan	Page 31, Line 2	A lot of questions were asked at the original opening house. They should be answered by now.	General	Comment noted.
26	Hearing Officer Fay	Page 38, Line 20	Which local libraries have the document [project application]?	General	Per the CEC's Notice of Receipt, dated 11-08-2007, copies of the AFC are available for public inspection at the following San Luis Obispo County public libraries: San Luis Obispo County Library, 995 Palm Street, San Luis Obispo, CA 93401 Santa Margarita Library, 9630 Murphy Avenue, Santa Margarita, CA 93453 Simmler Library, 13080 Soda Lake Road, Simmler, CA 93453 Creston Library, 6290 Adams Street, Creston, CA 93432 Copies are also available at the California Energy Commission's Library in Sacramento, the California State Library in Sacramento, and at public libraries in Eureka, Fresno, San Francisco, Los Angeles, and San Diego. In addition, this information has been shared with those public agencies that either have jurisdiction over the project or would have jurisdiction except for the Energy Commission's exclusive authority to certify sites and related facilities.
75	Ms. Harvey	Page 60, Line 23	I represent North County Watch...	General	Comment noted.

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81	Ms. Harvey, cont.	Page 62, Line 5	I would like to ask Mary Dyas if she could put copies of the reports in the Atascadero Library, the Paso Robles Library, San Luis Obispo City and Taft . . .	General	Copies have been provided to each of these libraries as requested.
43	Ms. Klock, cont.	Page 51, Line 15	Also, I am concerned about the grass and land usage...	Land Use	Comment noted.
55	Ms. Bell	Page 54, line 22	I own property 1.2 miles from the AUSRA site and I plan to live there forever after.	Land Use	Comment noted.
56	Ms. Bell, cont.	Page 54 Line 25	[Doesn't] belong here because . . . It's situated adjacent to an area of 40-acre parcels to the north and the west. And these parcels, the primary use is residential.	Land Use	The CESF Project is located in an area zoned for agricultural uses as specified in the San Luis Obispo County General Land Use Plan. Similarly, the Project is predominantly surrounded by agricultural land uses. For further information please refer to Applicant's Responses to Robin Bell Questions, docketed February 28, 2008.
57	Ms. Bell, cont.	Page 55, Line 11	So there goes our property value, I feel.	Land Use	The Applicant is not aware of any studies showing long-term decrease in property values in connection with the construction of a nearby solar power plant. Studies on the impacts to property values associated with other types of power plants acknowledge that decreases in property values can result from perceptions of dangers associated with coal, gas, and nuclear power plants, such as emissions, odors, heavy machinery, accidental releases, and pollution, etc. However, solar power is clean and renewable and the perceived dangers associated with other types of power facilities are not likely to be associated with solar power plants. Therefore, this Project has the potential to be received positively by potential buyers. Alternatively, the CESF may actually enhance property values by stimulating the local economy. For more information on this subject please refer to: Applicant's Responses to Robin Bell Questions.
70	Mr. Krier, cont.	Page 59, Line 4	Or a hospital or some of the benefits to the community here?	Land Use	The Applicant has reviewed the potential for cumulative impacts relating to the CESF project. At this time, no significant cumulative impacts are anticipated. See also Section 5.18, Cumulative Impacts, in the Project AFC. Ausra has suggested the possibility that the project would have a stimulating effect on the local economy. The potential socioeconomic impacts to the Carrizo Plain arise from the introduction of permanent jobs to 75 employees and the potential for solar renewable energy conversion as a viable economic alternative to agriculture, represented by CESF. However, the increase in permanent employees is not expected to have any adverse impact on employment, housing, tax revenues, public services, or utilities. The need for a new hospital is not a foreseen consequence of CESF development.
85	Mr. Cooper	Page 66, Line 5	I live about a mile and a half from where the site's going to be.	Land Use	Comment noted
86	Mr. Cooper, cont.	Page 66, Line 13	If this project goes through, will we have any sort of development?	Land Use	See 70 above.
17	Mr. Strobridge	Page 28, Line 14	And my question is [what are] the noise levels?	Noise	Predicted operational noise levels may be found on Table 5.12-7 (pg. 5.12-15 of the Project AFC) of the noise section. Levels are all less than 50 dBA (SLO County Ordinance) at the indicated noise-sensitive locations.

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No.	Speaker	Page/Line Location	Question	Subject	Response
60	Ms. Bell, cont.	Page 55, Line 20	They did their noise evaluation and the sounds that they heard were cows, wind, birds. How does that compare with the noise of turbines going to generate. That's not country noise.	Noise	Table 5.12-1 (pg. 5.12-3 of the Project AFC) shows a table that associates typical noises and sound environments with decibel levels. Table 5.12-7 (pg. 5.12-15 of the Project AFC) shows that predicted operational noise levels at selected noise-sensitive locations are all below 50 dBA, which Table 5.12-1 suggests is comparable in magnitude to "light traffic at 100 feet". Since the project's pair of dry cooling systems are expected to be the dominant plant operational noise sources, the character of the sound will probably resemble that of a household window fan (at low speed setting), clothes dryer, or dehumidifier at 3-5' distance. (Source of these analogies: USEPA, "Noise from Construction Equipment and Operations, Building Equipment and Home Appliances", NTID300.1, December 31, 1971.)
61	Ms. Bell, cont.	Page 56, Line 1	I'd like to know about their noise report and how to understand it in a layman's terms.	Noise	Please refer to the analogy described in 60, above.
62	Ms. Bell, cont.	Page 56, Line 3	I'd like to know if their reports were done on a windy day because that certainly affects the quiet here.	Noise	Appendix P4 of the Project AFC shows field notes from the acoustical site survey. As described in response to Robin Bell's question 10, a review of the field measurement notes indicated recorded wind velocities ranged from 0-12 mph. We agree that wind noise is louder on a windy day than a calm day, and the noise generated typically depends on the site conditions (i.e., are there trees, grasses, fences, poles, or other forms of wind resistance that create turbulence and hence noise).
63	Ms. Bell, cont.	Page 56, Line 6	There are times you cannot hear anything on my property. And they have the lows on some of the properties as 20 decibels. But yet where my house is, it'll be over 30.	Noise	Outdoor sound as low as 20 dB was indeed measured, and is shown in the field notes of Appendix P4 of the Project AFC. However, such very low sound levels are Lmin values, or the "minimum" level detected by the sound level meter during a measurement period. This means that 20 dB was measured, but probably for no more than a fleeting moment. Since Ms. Bell is making a comparison with a future level, which we reported in only Leq, it is important that one compares apples to apples. Table 5.12-2 (pg. 5-12.5 of the Project AFC) shows that the short-term measured Leq at all seven locations are already in excess of 30 dB. In fact, Table 5.12-7 (pg. 5.12-15 of the Project AFC) shows that for ten studied locations near the Project, existing sound levels are already in the 40s. And with the exception of two locations, the predicted operational noise from the plant will result in either no change to the existing outdoor sound level, or a change of less than 1 dB. Additionally, because the CESF is a solar power project, there will not be full operational activity at night.
68	Mr. Krier, cont.	Page 58, Line 23	I own wind turbines on Tehachapi	Noise	A primary difference between a solar power plant, featuring CESF's technology, and wind turbines (WTG) is that the latter can run and hence make noise at night--depending on wind velocity. Table 5.12-7 (pg. 5.12-15 of the Project AFC) shows predicted operational sound levels for the CESF plant at a variety of receivers. By way of example, the calculated level at ML03, which is approximately a mile from the center of the power block siting area, is about 39 dBA. Based on a recent study by Schattner, which measured the sound from a single Micon NM-82 WTG (rated at 1.65 MW, operating in 15 mph windspeed) at a distance of 200 meters, this level would be about as loud as ten such WTGs at an average 1-mile distance from ML03. The CESF project will resemble other types of plants that involve conventional steam turbines to generate power; but because it essentially utilizes the sun as the "fuel," the CESF plant does not have noise-producing sources associated with coal, oil, natural gas, or biomass fuel supply and combustion systems.
12	Mr. Stoddard	Page 27, Line 5	[What are the safety records of] significant high-pressure steam boilers and steam storage facility?	Safety	Human error remains the foremost cause of boiler and pressure vessel incidents in North America. Of the 23,338 boiler and pressure vessels accidents recorded from 1992 to 2001, 83 percent were a direct result of human oversight or lack of knowledge (i.e., low-water condition, improper installation, improper repair, or operator error or poor maintenance). Human oversight and lack of knowledge were also responsible for 69 percent of the 720 injuries and 60 percent of the 127 deaths recorded over this 10-year span. (source: <a href="http://www.nationalboard.org/NationalBoard/Publications/Bulletins/Pdf/SU02.pdf">http://www.nationalboard.org/NationalBoard/Publications/Bulletins/Pdf/SU02.pdf</a> ).  Using the October 2007 Department of Labor Statistics data for non fatal accidents and the approximate number of operations and maintenance employees working in the CESF power block (i.e., 20 employees), the number of non-fatal accidents (incident rate) in a year would be only 0.52. In comparison, incident rates for other industries are as follows: the Utility incident rate is 3.7; the Electrical Power Generation incident rate is 2.6, the Private Industry incident rate is 4.2, the Goods Producing incident rate is 5.5, and the Natural Resources rate is 4.6. [Incident rates represent the number of injuries per 100 full-time workers and were calculated as (N/EH) X 200,000 where N = the number of injuries; EH = the total hours worked by all employees in a calendar year; and 200,000 = the base for 100 equivalent full-time employees (working 40 hours per week for 50 weeks per year)]

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13	Mr. Stoddard, cont.	Page 27, Line 8	How we anticipate to keep those [steam boilers and storage facilities] safe?	Safety	All steam generating and storage equipment will be designed, manufactured and maintained as per ASME Code requirements. All applicable articles of Subchapter 1 - Unfired Pressure Vessel Safety Orders (California Code of Regulations Title 8 - Division 1. Department of Industrial Relations - Chapter 4. Division Of Industrial Safety) will be implemented. All plant personnel will go through safety, operation and/or maintenance training, as applicable to their duties, prior to starting their job. Training manuals will be made readily available to plant personnel. Safety information sheets will be posted in appropriate places throughout the plant. All plant personnel will attend regular mandatory sessions to review safety, operation and maintenance procedures. Visitors will attend a visitor safety session upon arrival at the site.
14	Mr. Stoddard, cont.	Page 27, Line 10	How to keep the site safe from inquisitive kids who run in there?	Safety	The entire project site will be fenced and access will be through controlled gates. The facility will be fenced with a minimum 3 m (10-foot) chain link fence with three strands of barbwire on top and with privacy lattice around the perimeter. Entrance to the facility will be through one 7.3 m (24 feet) wide motorized gate equipped with a security monitoring system, including a camera and intercom system, remotely controlled from the control room.
48	Ms. Klock, cont.	Page 52, Line 11	The construction area will be returned to its previous condition.	Site / Laydown	Yes. As required, the construction area will be returned to its previous condition, as practicable. This will involve disking and tilling.
44	Ms. Klock, cont.	Page 51, Line 25	If there are going to be residents families out here to run the plant, that will mean a lot of water consumption, but it will also mean children and teenagers and visiting cousins.	Socioeconomics	The CESF is not expected to lead to a significant increase in the population of the Shandon-Carrizo planning area, therefore, there will likely not be significant increases in residential water use as a result. Ausra does not expect families to relocate to the Shandon-Carrizo planning area as a result of project construction and operation.
78	Ms. Harvey, cont.	Page 61, Line 19	Countywide, I believe the numbers for sheriff is less than one per thousand, which is a really low level of service.	Socioeconomics	CESF is within the service area of the County of San Luis Obispo Sheriff's Department. In addition, the California Highway Patrol also patrols the major rural roads within the vicinity. The Sheriff's Department was contacted for input on this project and has not provided comments to this point.
88	Mr. Strobridge	Page 68, Line 8	...there's no tax money for this; they're exempt. You're not going to get any tax money out of this project.	Socioeconomics	The CESF is expected to be allowed a Property Tax Exemption as part of an extension of the California Incentives for Renewables and Efficiency. This would remove the potential for County and Local Property Tax Revenues derived from the CESF. However, local products will be purchased when possible, and sales taxes on purchases in the area will be a source of tax revenue.
46	Ms. Klock, cont.	Page 51, Line 25	This is very thin soil.	Soils	The alluvial soil deposits at the site are thought to be very thick. Soil borings performed at the site were advanced as deep as about 95 feet below the ground surface and encountered interlayered soil consisting of clayey sand, sandy clay and clay, with smaller amounts of silty sand, silt and gravel. Groundwater was found between about 13 and 30 feet below the ground surface.
51	Ms. Klock, cont.	Page 52, Line 15	That's a horrendous amount of wear on our county highways.	Traffic	SR-58 pavement conditions are monitored and maintained by both Caltrans District 5 within San Luis Obispo County Line and Caltrans District 6 within Kern County Line. According to Mr. Kurt Hatton, Caltrans District 6, Program Management, Caltrans strives to maintain its facilities through a systematic maintenance program including pavement rehabilitation and repair through its Division of Maintenance. Through the Caltrans website, a maintenance service request is available for the public to report potholes and other road conditions that need immediate attention. A Traffic Congestion or Construction Problem Form is also available to direct questions to the appropriate person or specialist who can answer specific public questions.  As part of our ongoing refinement of the project description, and in response to public concerns, Carrizo Energy will be modifying the project plans to include limited manufacturing on-site during construction. The manufacturing component will be removed upon completion of construction. This project modification will result in a significant reduction in truck traffic. A detailed description of this project modification is being prepared and will be provided to CEC staff and the public.

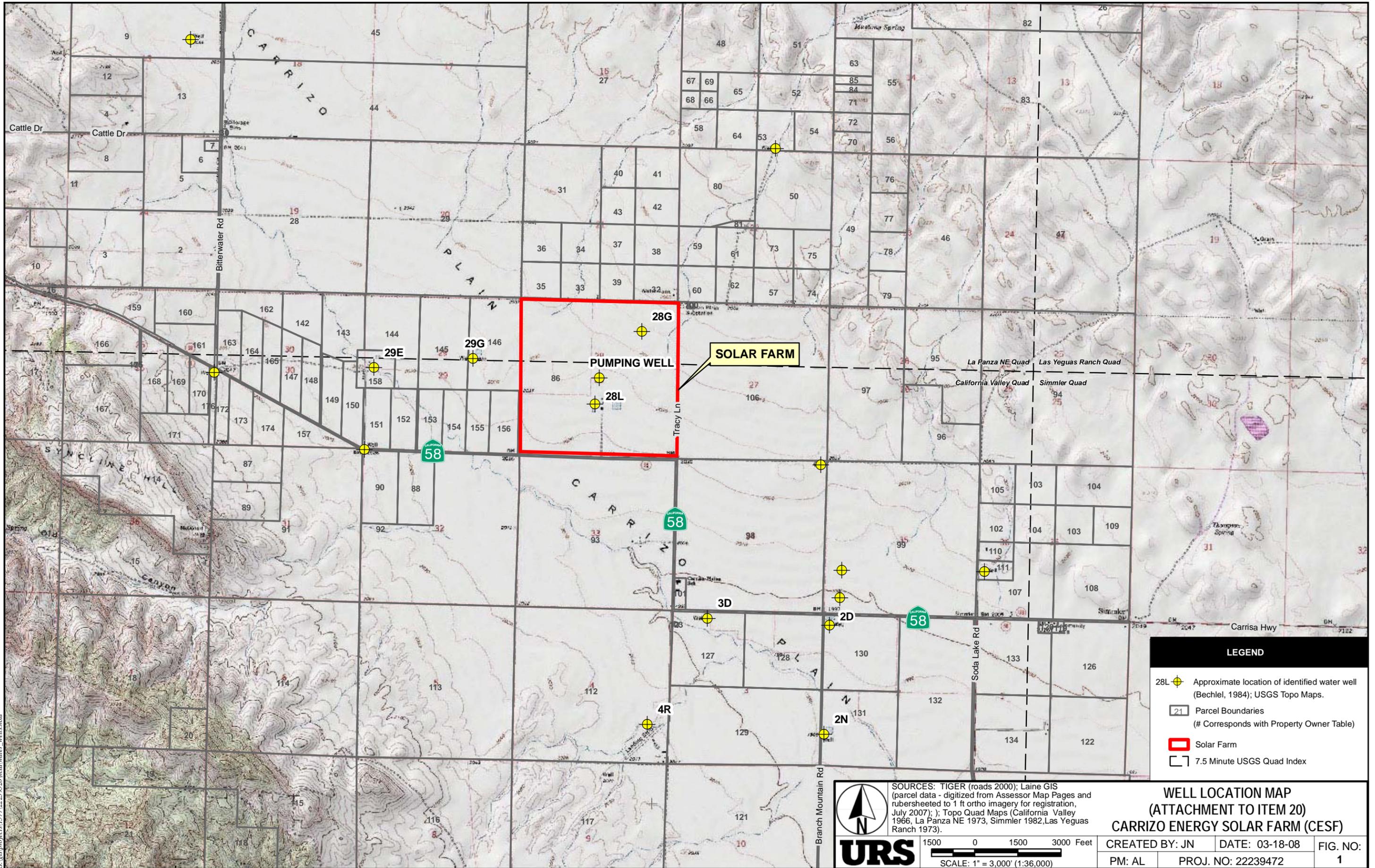
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No.	Speaker	Page/Line Location	Question	Subject	Response
53	Mr. Ruskovich, cont.	Page 53, Line 11	Highway 58, Bitter Water Road, Shell Creek Road cannot be traveled on by semis to bring in the product to build this plant.	Traffic	Truck traffic along SR-58 are allowed but with some advisory limitations on some segments. The segment of SR-58 from SR-101 to J Street is a Terminal Access (TA) route where STAA trucks may travel on State Highways. The segment of SR-58 from J Street to Route 33 is CA Legal Advisory Route where trucks with KRPA (Kingpin-to-rear-axle) distance greater than 30 feet are "Not Advised". The segment of SR-58 east of SR-33 has varying segments composed of CA Legal, Terminal Access (STAA), CA Legal Advisory and National Network (STAA) towards its eastern termini at I-15 in San Bernardino County. In some instances where there is a need to move oversize cargo shipments, these requests will be handled via the Caltrans permitting process.
65	Mr. Maruska	Page 57, Line 2	Understanding the concept of the laydown being across 58 from the project site, and how that would affect transportation on 58 when they're bringing material from one side to the other [describe our plans and include school stops, etc.].	Traffic	Vehicle crossings will be clearly identified and marked with advance warning signs in each direction of SR-58. Extended crossing activity across SR 58 will be supplemented by the deployment flagmen to expedite crossing as quickly as possible and minimize motorist delay. Encroachment permits will be secured for all traffic crossing work within SR 58 right-of-way. Selection and placement of traffic signs shall comply with the provisions set forth in the California Manual of Uniform Traffic Control Device (MUTCD). All construction and operational activities that could potentially affect school bus stop operations shall be conducted in close coordination with the Atascadero Unified School District.
58	Ms. Bell, cont.	Page 55, Line 13	The visual impact. I'm concerned about the landscaping. How are we supposed to get individual agreements with AUSRA to deal with the landscaping.	Visual Resources	The Applicant would need to prepare an agreement with individual landowners to allow for tree planting on their properties. Per responses to Robin Bell's questions 4 and 5, the Applicant proposes that the sensitive receptors identified in the AFC be eligible for a tree planting allowance from Carrizo Energy, LLC, (Carrizo Energy) the details of which will be determined on a case-by-case basis. The allowance will be determined by the number of trees required and their cost, and will be based on the response to Data Adequacy Request 26 submitted with regard to landscaping.
59	Ms. Bell, cont.	Page 55, Line 17	We don't agree with their description that there's no scenic vistas here.	Visual Resources	The Project site is located within the Shandon-Carrizo inland area. There are no Federal, State or Locally designated scenic vistas within the Project area, nor are there any specific goals/policies relating to scenic areas and visual resources for the Project. However, The San Luis Obispo County General Plan contains several goals and policies relating specifically to minimizing impacts to scenic areas and visual resources within the County. The CESF will conform to all applicable Laws, Ordinances, Regulations and Standards (LORS) related to the preservation of scenic resources. Based on the inventory of scenic attractiveness and Existing Scenic Integrity Levels (ESILs), areas retaining high scenic value/visual quality rating were not identified within the Visual Sphere of Influence (VSOI).
64	Ms. Bell, cont.	Page 56, Line 11	I'm concerned about the lights, the beautiful starry nights we have.	Visual Resources	CESF is limiting nighttime lighting, therefore minimizing temporary impacts wherever practical. Nighttime operations would occur only when necessary processes cannot occur in peak daytime temperatures. There are two primary activities that might have to be performed on off-peak hours due to temperature: pouring concrete foundations, in which case typical highway lighting would be used, and millwright work. Foundation pouring would happen approximately once a month over the course of three to four months, although the number could feasibly average half a dozen nights in total. Millwright work requires smaller, portable, halogen lights. These lights are not pole-mounted, and would therefore have more limited temporary impacts to nighttime lighting conditions.
83	Mr. Strobridge	Page 64, Line 5	It's going to be lit at night.	Visual Resources	See 64 above.
84	Mr. Strobridge, cont.	Page 64, Line 9	And their pictures are deceptive if you look at them. They're not in correlation with what the actual footages are.	Visual Resources	The simulations were prepared in coordination with CEC staff and in accordance with CEC regulations Appendix B (g) (6) (F): "full-page color simulations of the proposed project at life-size scale when the picture is held 10 inches from the viewer's eyes, including any project-related electrical transmission lines, in the existing setting from each key observation point." Please see discussion provided in Section 5.13.2.2.1 on page 5.13-2 of the Project AFC for a full description of how the CESF simulations were prepared to ensure accuracy and compliance with CEC regulations.
3	Ms. Harvey	Page 23, Line 11	You talked about water but you didn't say how much water you expected to use daily;	Water Use	* Please note that typographical errors occurred in Sections 1.2.2, 3.4.5.1, 4.6, and 5.5.2.1 of the Project AFC and Response to CEC Data Request No. 34. Those sections stated the average daily water use as 21.8 afy and a maximum daily use of 0.7 million gallons per day (700,000 gpd). The correct values are 20.8 afy for expected average daily water use which is rounded to 21 afy in this response and 0.074 mgd or 74,000 gpd. The actual daily water use will vary.

APPLICANT'S RESPONSES TO COMMENTS FROM INFORMATIONAL HEARING (CARRIZO ENERGY SOLAR FARM [07-AFC-8])					
No.	Speaker	Page/Line Location	Question	Subject	Response
					As indicated in Response to Data request 34, the peak water usage will occur very infrequently and only when the air cooled condenser requires cleaning. This may occur once per year. The annual water usage of approximately 21 afy assumes that the air cooled condenser is cleaned once per year. This is a conservative assumption since the air cooled condensers at a similar facility in a similar environment in Nevada required cleaning once in five years.
7	Mr. Bell	Page 25, Line 14	You mentioned the 18- to 19,000 [gallons of water] a day. But in your application you said the peak usage of water could be up to 700,000 gallons a day. Can you explain the difference there?	Water Use	See 3 above.
8	Mr. Bell	Page 26, Line 1	So you think the 700,000 is a one-time usage?	Water Use	See 3 above.
9	Mr. Bell	Page 26, Line 9	During the three years of construction is there an estimate of what your water usage at that time....?	Water Use	* Water use during construction will be on the order of 1/3 of the water used during operations. For example, as described in the AFC, the amount of water that will be used during the three years of construction is approximately 5 acre-feet to mix concrete. This is approximately 1.63 million gallons. Over the three-year period, this would be an average of about 1,500 gallons per day (gpd), or about 1 gallon per minute (gpm) from the water supply well that is located on site. Other uses include dust control and compaction which are included in the estimate of the 1/3 of the water used during operations.
10	Mr. Bell, cont.	Page 26, Line 11	...abatement...?	Water Use	See 9 above.
11	Mr. Bell, cont.	Page 26, Line 12	...compaction...?	Water Use	See 9 above.
36	Ms. Klock, cont.	Page 51, Line 3	I am worried about the consumption, not only in the initial construction of the facility	Water Consumption	* Studies of residential water use in the state indicate that a residential property in California uses about 0.52 acre feet of water per year on average. This includes water used by individuals and irrigation for landscaping and trees. This is about 170,000 gallons per year for each residence. In Southern California, the split between indoor and outdoor is estimated to be split 50:50. The CESF project, with its limited water use, will not negatively affect regional water consumption.
37	Ms. Klock, cont.	Page 51, Line 5	but in the plant usage, as well as if	Water Consumption	See 36 above.
38	Ms. Klock, cont.	Page 51, Line 6	there are resident families out here to work on the facility	Water Consumption	See 36 above.
39	Ms. Klock, cont.	Page 51, Line 7	[and what] their consumption [would be]. Because families do consume a lot of water.	Water Consumption	See 36 above.
66	Mr. Krier	Page 58, Line 11	An acre of carrots take about three foot of acre of water per acre, and they use that in about 120-, 130-day crop.	Water / Comparable Use	* CESF has reviewed a variety of water uses from agricultural uses. These are described in response to Data Request 33. The attached table (see attachment to 66) shows that the estimated water usage by the facility is small in comparison to two alternative uses for the land (irrigated and dry land farming).
67	Mr. Krier, cont.	Page 58, Line 15	That's not a whole lot of water...	Water / Comparable Use	See 66 above.
72	Mr. Krier, cont.	Page 59, Line 17	I understand you have a lot of farm down here. They pull up more water than this project here does	Water / Comparable Use	* The comparisons presented above show that the facility will use less water than conventional agriculture. Additionally, please refer to response to Data Request 33 for additional information.

APPLICANT'S RESPONSES TO COMMENTS FROM INFORMATIONAL HEARING (CARRIZO ENERGY SOLAR FARM (07-AFC-8))					
No.	Speaker	Page/Line Location	Question	Subject	Response
4	Ms. Harvey, cont.	Page 23, Line 13	How much you expect to recover?	Water Recovered/Recycled	<p>The amount of water recovered from the process on the average day will be 40,000 gallons, or approximately 97 percent of the total daily process water demand. Mirror washing and domestic uses make up approximately 96 percent of the daily raw water usage of 18,500 gallons. Water used for the proposed CESF project will be purified and applied to wash the mirrors. Some water will evaporate. What water remains will be reused and water will be added to make up the difference in what is needed. There will be no wastewater generated that will require disposal. The only "discharge" in the water system is the back flush from the inline filter. See Figure 3.4-17, Water Balance, in the Project AFC.</p> <p>The filter will collect dirt and sand that comes with the water from the well to keep from bring the sand and dirt into the raw water tank. The discharge is well water containing dirt and sand. This discharge can be collected and used for dust control. No chemical additions or treatments have been made to the water being discharged. General site operations will have a septic system and a leachfield to which wastewater will be discharged, just like other ranches and businesses throughout the Carrizo Plain.</p>
40	Ms. Klock, cont.	Page 51, Line 9	I have several springs, too. And two wells. And I would like to know if there is some water that will not be recycled into the system.	Water Recovered/Recycled	See 4 above.
41	Ms. Klock, cont.	Page 51, Line 12	If that water that is dispensed with will be reclaimed,	Water Recovered/Recycled	See 4 above.
42	Ms. Klock, cont.	Page 51, Line 13	and what will be done with it.	Water Recovered/Recycled	See 4 above.
16	Mr. Stoddard, cont.	Page 27, Line 19	Do you have some kind of backup plan if your wells suck ours dry?	Water / Aquifer	See 20, below.
20	Ms. Nolan, cont.	Page 31, Line 8	This says right here: Staff is concerned that Carrisa Plains may currently be in an over-draft situation.	Water / Aquifer	<p>Carrizo Energy is well aware of the importance of water and has focused significant resources in designing a facility that is compatible with the project area. The aquifer has historically accommodated much higher water uses in the past, as described in Section 5.5, Water Resources, of the Project AFC (Section 5.5.2.1 and Appendix K). The groundwater in the area can sustain both the proposed CESF project as well as current and future needs of the region.</p> <p>The following map (see Attachment to 20) shows the location of water wells that appear on the U.S. Geological Survey 7.5-minute La Panza NE, California Valley and Simmler topographic quadrangle maps. Well information is not public information in California, so it is difficult to know the locations of wells in the site vicinity. Locations of seven wells in the site vicinity were readily available in a previous Bechtel study for the Former ARCO solar facility. These additional wells are plotted on the map.</p> <p>URS is in the process of conducting a model run of drawdown (the change in water level), including recharge, in the aquifer and will provide the results as soon as they become available.</p> <p>The net recharge to the basin under predevelopment conditions has been estimated at 80,000 acre-ft per year (Kemnitzner, 1967). Under predevelopment conditions, this net recharge is believed to have been lost as groundwater flow to the north. The estimated average water usage as a percentage of the predevelopment net recharge is 0.026%.</p>
21	Ms. Nolan, cont.	Page 31, Line 11	Some of the groundwork that was laid down for this should have been, hey, do we have water?	Water / Aquifer	See 20 above.
22	Ms. Nolan, cont.	Page 31, Line 13	And if we run out, what's the answer?	Water / Aquifer	See 20 above.

APPLICANT'S RESPONSES TO COMMENTS FROM INFORMATIONAL HEARING (CARRIZO ENERGY SOLAR FARM [07-AFC-8])					
No.	Speaker	Page/Line Location	Question	Subject	Response
23	Ms. Nolan, cont.	Page 31, Line 16	Water's an absolute must in this community, it's an absolute must in this state. And to gloss over that is just a joke.	Water / Aquifer	See 20 above.
35	Ms. Klock	Page 51, Line 1	I am very concerned about the environmental impact on my groundwater. I am upstream...	Water / Aquifer	See 20 above.
71	Mr. Krier, cont.	Page 59, Line 15	I'm not sure if your aquifer is hard.	Water / Aquifer	* The water is hard and contains dissolved minerals such as calcium and magnesium. When the water is pumped from the well it will pass through a softener and will then used to wash the mirrors. The removed salts from this process will be properly disposed.
73	Mr. Young	Page 60, Line 11	We already have residents out here, I don't know if you're aware, that don't have good water already. And this is not likely to make the situation any better.	Water / Aquifer	See 20 above.
76	Ms. Harvey, cont.	Page 61, Line 2	[Aquifer history]	Water / Aquifer	Comment noted. Please refer to the response for item 20, above, for additional information.
77	Ms. Harvey, cont.	Page 61, Line 14	So it's a closed aquifer.	Water / Aquifer	* The basin is nearly a closed system; however, it is believed that there is groundwater flow to the north when withdrawals from the aquifer are less than the estimated net recharge under predevelopment conditions (approximately 80,000 ac-ft/yr). We do not have current estimates for withdrawals from the basin.
18	Mr. Rose	Page 29, Line 25	I'd like to know when you feel that it proper to have the Regional Water Quality Control Board do a survey and see if this is really a viable enterprise that you're anticipating?	Water / RWQCB	The Applicant understands that the CEC staff will make an independent assessment of the proposed water supply for the project. In their role as lead agency for state, regional and local permitting, the CEC staff will coordinate with staff of the Regional Water Quality Control Board and other agencies to get their input to this evaluation. Similarly, the Regional Water Quality Control Board will be contacted prior to construction and operation to determine if Waste Discharge Requirements will be needed for the project.
74	Mr. Young, cont.	Page 60, Line 16	So why not, as part of this project, could not the water supply for the area be improved?	Water / Other	The Applicant has shown that neither water quality nor water supply will not be negatively affected by the Project (see Section 5.5, Water Resources, in the Project AFC and response to item number 20, above). Reviewing and addressing water supplies for the region is out of the realm of the Project.

\* Indicates response was peer reviewed by Eric LaBolle, University of California Davis



**LEGEND**

- 28L Approximate location of identified water well (Bechlel, 1984); USGS Topo Maps.
- Parcel Boundaries (# Corresponds with Property Owner Table)
- Solar Farm
- 7.5 Minute USGS Quad Index

**WELL LOCATION MAP  
(ATTACHMENT TO ITEM 20)  
CARRIZO ENERGY SOLAR FARM (CESF)**

SOURCES: TIGER (roads 2000); Laine GIS (parcel data - digitized from Assessor Map Pages and rubersheeted to 1 ft ortho imagery for registration, July 2007); Topo Quad Maps (California Valley 1966, La Panza NE 1973, Simmler 1982, Las Yeguas Ranch 1973).

CREATED BY: JN      DATE: 03-18-08      FIG. NO: 1  
 PM: AL      PROJ. NO: 22239472

1500 0 1500 3000 Feet  
 SCALE: 1" = 3,000' (1:36,000)

C:\gis\projects\1577\22239472\water\_wells.mxd

Attachment to Item 66: A Comparison of Water Usage for Alternative Uses of the Project Area

	Inches/Year	Acre-ft/Year	Gal/Day	Percent of Estimated Facility Usage
Projected Water Usage for Facility	0.4	21	18,500	100%
Dry Land Farming of Grains**	8	427	380,878	2,059%
Irrigated agriculture***	65	3467	3,094,630	16,728%

\*\* from Kemnitzer, 1967.

\*\*\*Based on estimated applied water for a single crop of carrots. Some of this applied water will become recharge through infiltration. Planting more than one crop per year would increase water usage.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE  
STATE OF CALIFORNIA

**APPLICATION FOR CERTIFICATION**  
***For the CARRIZO ENERGY***  
***SOLAR FARM PROJECT***

**Docket No. 07-AFC-8**

**PROOF OF SERVICE**  
(Revised 2/5/2008)

**INSTRUCTIONS:** All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the Docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:

CALIFORNIA ENERGY COMMISSION  
Attn: Docket No. 07-AFC-8  
1516 Ninth Street, MS-14  
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**DECLARATION OF SERVICE**

I, Kristen E. Walker, declare that on March 18, 2008, I deposited copies of the attached Applicant's Responses to Questions from the Informational Hearing (Carrizo Energy Solar Farm 07-AFC-8) in the United States mail (FedEx) thereon fully prepaid and addressed to those identified on the Proof of Service list above.

**OR**

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

