STATE OF CALIFORNIA

Energy Resources Conservation
and Development Commission

Application for Certification for the ABENGOA MOJAVE SOLAR POWER PLANT	)	Docket No. 09-AFC-5

APPLICANT'S SUPPLEMENTAL OPENING TESTIMONY ON WORKER SAFETY AND FIRE PROTECTION

ELLISON, SCHNEIDER & HARRIS L.L.P.
Christopher T. Ellison
Greggory L. Wheatland
Shane E. Conway
2600 Capitol Avenue, Suite 400
Sacramento, California 95816
(916) 447-2166 - Phone
(916) 447-3512 - Facsimile

Attorneys for Abengoa Mojave Solar Project

PREPARED TESTIMONY OF TOM COUCH

MOJAVE SOLAR PROJECT

09-AFC-5

Q: Please state your name, current employment position and business address.

A: My name is Stuart Thomas (Tom) Couch.

Q: Please describe your educational and professional background.

A: My education and professional background are set forth in my attached resume. Of particular relevance to this testimony, from 1983 to 2000 I worked as a fire fighter, plan checker, inspector and investigator for San Bernardino County Fire. I was the plan checker and inspector for San Bernardino County in 1983 to 1990 and I reviewed and set the conditions for the solar plants ("SEGS" Solar Electric Generating Systems - III through VIII) that were constructed and operated afterwards. I was promoted to Engineer in 1986, to Lieutenant in 1989 and to Captain in 1999. My duties included construction of new fire stations, fire fighter and crew leader. I have instructed many fire fighting classes.

From 1990 to 2005 I also served as Safety Specialist for initially Luz Engineering for SEGS I through IX, and then, in 1992 after the bankruptcy of LUZ, for KJC Operating Company, the company that was formed by the equity owners of SEGS III through VII. I was responsible for site safety, safety training, security, communications and drug testing, and I was Fire Chief for the Emergency Response Teams ("ERTs"). In 1995, KJC Operating Company ("KJC OC") signed a Mutual Aid Agreement with the County of San Bernardino. The KJC

OC ERT fire safety operations qualified to be and became a certified Fire Department within the State of California. (Station 89, recognized by the California State Fire Marshal, California Fire Department ID #36116)

From 2006 to 2009 I worked for Acciona Solar Power, as a Safety, Fire and Environmental Specialist, where I assisted in securing all Environmental Permits, Designed the fire protection system for the 70 MW Nevada Solar One ("NSO") project (the largest solar parabolic-trough plant to be built in the world since the construction of SEGS IX). I worked with the local jurisdictional fire authority, the City of Boulder City to qualify the fire prevention and safety plans for the project's construction and operation, and authored the LQG Hazardous Material Plan and training package.

Q: On whose behalf are you testifying?

A: I am testifying on behalf of Abengoa Solar Inc.

Q: What is the purpose of your testimony in this proceeding?

A: The purpose of my testimony is to describe the anticipated impacts of the Mojave Solar Project on the San Bernardino Fire Department.

Q: The Commission Staff states that the Project would have a "significant" impact on County fire services. Do you agree?

A: I do not believe that the impact of this Project on County fire services will be significant.

Q: Please explain.

A: Based on my direct observation of the County's fire and emergency response services for more than 25 years, especially as these services relate to existing solar

power plants, the Mojave Solar Project will have minimal demands on County fire services. As with any industrial worksite (or any residential, commercial or industrial facility for that matter) there may be an occasional call for EMS services (such as a heart attack or injury), or there may be a rare service call for a fire or hazardous material spill. However, from my experience, these events will be few and far between. For example, I worked for 15 years at the five Kramer Junction solar plants and we took care of virtually all incidents without outside help. We had 25 personnel that were State Certified Fire Fighter I's, EMT's HazMat responder-certified and technical rescued-trained. Also we had the equipment required by NFPA 850 that enabled us to respond to any and all emergencies that arose on site in a timely manner. On one occasion we requested a mutual aid Engine from Kern County Fire Department for standby. This engine was held in staging for about 30 minutes and released.

Q: The Staff testimony states that County data indicated that over the past 10 years, the department responded to about 30 incidents and emergencies at the three solar locations, including two fires and two hazardous materials spills. During the same period, the SBCFD conducted approximately 90 inspections and visits for enforcement actions/plan reviews, totaling about 260 hours of personnel time. The incident rate, therefore, for all three power plants would be 30 in 12 years or 2.5 emergency calls per year or 0.83 emergencies per solar plant per year. Do you agree?

A: Yes, I think the number of service calls will be at this level, or less. To put these numbers in perspective, each surrounding fire station experiences anywhere from

500 to 1500 calls per year; therefore, the incident rate is likely to be less than 1 in 500 or less than 1 in 1500 incidents per year.

Q: The Staff testimony is that the SBCFD will not be able to respond to fire, hazmat, rescue, and EMS emergencies in a "timely manner" at the Mojave Solar Project. Is this true?

A: The time needed to respond to a fire, hazmat, rescue or EMS emergencies at the Mojave Solar Plant, on those rare occasions when a response may be required, will be consistent with the response time to other residential, commercial and industrial facilities in the vicinity of Kramer Jct and Harper Lakes by the stations from Hinkley and Silver Lakes/Helendale. The level of service and response times will be consistent with the times that have been in place for the last 25 years. For Staff to suggest that SBCFD is currently not able to respond to residents and workers in these communities in a timely manner is an unfair and incorrect indictment of the County fire services.

Q: The Staff testimony describes the project as follows: "The AMS solar power plant would be larger in scale than the existing solar power plants and will have a huge amount of highly flammable oxygenated heat transfer fluid in use at elevated temperatures and stored on site, approximately 2,300,000 gallons. The amount of highly flammable oxygenated flammable material stored and used on-site, combined with the rather remote location and the potential for escalation of a small fire into a large conflagration, presents an emergency response challenge for the SBCFD".

Is this an accurate description of the project?

A: The description is not at all accurate. This testimony exaggerates or is mistaken on every key point. First, the heat transfer fluid is NOT flammable, much less "highly flammable". As defined by NFPA therminol is a Type IIIB Combustible liquid. A Type IIIB combustable liquid has a Flashpoint above 200^{o}F. The MSDS for therminol states the flash point is 255^{o}F. Flammable and combustible liquids are both liquids that can burn. They are classified, or grouped, as either flammable or combustible by their flashpoints. Generally speaking, flammable liquids will ignite (catch on fire) and burn easily at normal working temperatures. Combustible liquids have the ability to burn at temperatures that are usually above working temperatures.

Second, just because the description has the word "oxide" in it does not make it oxygenated. The fluid is not "oxygenated" but is, instead, blanketed with an inert gas. The fluid is not "stored" on site, but is instead used in process vessels. With all fluid being used daily in the generation process, there is nothing being stored. Finally, the use of terms like "huge" volumes, "highly flammable" and large "conflagration" serve to scare, rather than inform, the reader.

Q: Does the Project, as the Staff says, pose an emergency response challenge to the SBCFD?

A: Every structure and facility poses an emergency response challenge – the proposed project does not propose any greater challenge than any other Group H industrial facility in the County (of which there are many). In many ways this Project is actually less challenging. The project will meet the fire protection and suppression requirements of the International Fire Code as adopted by San

Bernardino County, all applicable recommended NFPA standards (including Standard 850, which addresses fire protection for electric generating plants), all Cal-OSHA, and insurance requirements. Fire suppression elements in the proposed plant will include both fixed and portable fire extinguishing systems. In addition to the fixed fire protection system, there will be fire alarms, smoke detectors, flame detectors, high-temperature detectors, and fire hydrants must be located throughout the Power Block at code-approved intervals. These systems are standard requirements of the fire code. These measures along with the fact that the plant is manned 24/7 by safety-trained personnel will ensure adequate fire protection.

Q: The Staff testimony states this Project is different from the existing solar plants located at Harper Lake and Kramer Junction in San Bernardino County. Do you agree?

A: The Mojave Solar Project is different from these other projects, but in terms of fire safety, the differences are positive. The Mojave Solar Project does not have a natural gas interface, does not use heaters and has more technologically advanced equipment and processes which conform to the latest fire and safety codes. Significant advances in fluid sealing and containment technologies have been made over the last 25 years since the California SEGS were constructed such as advanced pump seals, valves, and the connecting hoses and joints between solar collector arrays ("SCAs") as well as advances in the monitoring, detection, and process automation technologies. Many of the lessons learned in that quarter century of solar plant construction and operation about fluid, vapor containment,

fire prevention and suppression, and loss prevention have been incorporated into the basic designs of new solar plants such as NSO, and in this case the proposed Mojave Solar Project.

Q: Was this testimony prepared by you or under your supervision?

A: Yes, it was.

Q: Insofar as this material is factual in nature, do you believe it to be correct?

A: Yes, I do.

Q: Insofar as this material is in the nature of opinion or judgment, does it represent your best judgment at this time?

A: Yes, it does.

Q: Does this conclude your testimony?

A: Yes, it does.

PREPARED TESTIMONY OF ERIC NICKELL

MOJAVE SOLAR PROJECT

09-AFC-5

Q: Please state your name, current employment position and business address.

A: My name is Eric Nickell. My current position is Principal Consultant with Willdan Financial Services, a division of Willdan Group, Inc. My business address is 2150 River Plaza Dr, Suite 300; Sacramento, CA 95833.

Q: On whose behalf are you testifying?

A: I am testifying on behalf of Abengoa Solar Inc. (ASI).

Q: Please describe your educational and professional background.

A: My education and professional background are set forth in my attached resume.

Q: What is the purpose of your testimony in this proceeding?

A: The purpose of my testimony is to provide the key results and detailed backup calculations for an analysis of the Mojave Solar Project's (MSP's or Project's) share of costs to fund fire services, including fire protection and emergency medical services, in rural San Bernardino County (the County).

Q: What are your conclusions regarding a reasonable allocation of costs to the Project?

A: A reasonable allocation of one-time capital costs to the Project for expanded District facilities, under either existing or improved service levels, is estimated to be between $36,000 and $38,000. A reasonable allocation of ongoing operating costs to the Project for expanded District staffing, under either existing or

improved service levels, is estimated to be between $6,200 and $10,600 annually. In total, the cost to serve the Project is estimated to be between $193,000 and $301,000. If the Commission were to accept the values and weighting scheme in the District's risk-weighted matrix, the one-time capital costs would be $80,000 and ongoing operating costs would be $23,000, making the total cost be $655,000.

Q: What assumptions were used to make these estimates?

A: Public finance principles commonly used to determine a correct nexus between new development and local government facility costs were used to make the estimates regarding the cost to serve the Project. These public finance principles include: (1) Project's share of growth; (2) Project's share of a higher standard of fire services; and (3) Impact of unique project attributes.

Q: Are the reasons for your conclusions contained in the attached Memorandum and Tables?

A: Yes, they are.

Q: Do you adopt the attached materials as your testimony?

A: Yes, I do.

Q: Was this testimony prepared by you or under your supervision?

A: Yes, it was.

Q: Insofar as this material is factual in nature, do you believe it to be correct?

A: Yes, I do.

Q: Insofar as this material is in the nature of opinion or judgment, does it represent your best judgment at this time?

A: Yes, it does.

Q: Does this conclude your testimony?

A: Yes, it does.

FINAL Memorandum

TO: John Mirau, *Mirau, Edwards, Cannon, Lewin & Tooke*

FROM: Eric Nickell

DATE: July 12, 2010

SUBJECT: San Bernardino County Fire Services Cost Allocation to the Abengoa Mojave Project

This memorandum provides the key results and detailed backup calculations for an analysis of proposed development's share of costs to fund fire services, including fire protection and emergency medical services, in rural San Bernardino County (the "County"). Abengoa Solar (the "Applicant") retained Willdan Financial Services to provide an estimate of costs for the San Bernardino County Fire Protection District (the "District") to serve the company's proposed solar thermal electric generating facility (the "Project").

The District is a full service fire department recently consolidated from the operations of 32 fire districts. In Fiscal Year 2009, the District served five cities as a contract provider and was the direct provider to 64 unincorporated communities, the City of Grand Terrace, and the town of Yucca Valley. The District's operating budget in that year was nearly $150 million, supporting 69 fire stations and 682 employees.

The proposed 250 MW Project, planned for operation by 80 employees during peak generation periods, is located approximately 9 miles northwest of Hinkley, California, halfway between Barstow and Kramer Junction, in the District's North Desert Regional Service Zone. This service zone, whose Fiscal Year 2010 budget is $15.5 million, operates with 20 stations and 58 employees.

The memorandum presents the cost allocation results first, followed by a statement of each public finance principle commonly used to determine a correct nexus between a project and local government facility and staffing costs.

Results in Brief

This analysis provides three estimates of the Project's potential fire services impact by evaluating three cost allocation scenarios, each with a different public finance approach. Each scenario was based on District service standards, capital and operating needs, and new development projections for this area of the County.

The first scenario analyzes the Project's share of fire service costs assuming the District's current level (budgeted in FY2009-10) of service and staffing. The second scenario analyzed the Project's share of fire service costs assuming that the Project will fund services to be provided by the District at a higher level (better response, additional firefighting capabilities, etc.) than is currently delivered. The third scenario analyzes the Project's share of fire service costs, assuming that the Project's costs are weighted based on the District's risk-weighted matrix presented in the Staff's Opening Testimony. The Applicant does not agree with the criteria values and weighting scheme used in this matrix; however, assuming these values to be correct, the Applicant has calculated the resulting share of Project costs.

As shown in **Table 1** below, a reasonable allocation of one-time capital costs to the Project for expanded District facilities, under either existing or improved service levels, is estimated to be between $36,000 and $38,000. Added facilities will include land, buildings, apparatus (vehicles and vehicle-based equipment), and special equipment used by firefighters.

A reasonable allocation of ongoing operating costs to the Project for expanded District staffing, under either existing or improved service levels, is estimated to be between $6,200 to $10,600 annually, or between $155,000 to $265,000 over a 25 year project lifetime. All amounts are in nominal dollars. Expanded operations funding will provide additional engine companies in existing paid-call or full-time stations, and additional engine companies for newly constructed stations.

In total, the cost to serve the Project is expected to be between $193,000 and $301,000 in nominal dollars.

In addition, even if the Commission were to accept the values and weighting scheme in the District's risk-weighted matrix, this analysis estimates that the Project's one-time capital cost impact would be $80,000 and the ongoing operating cost impacts would be $23,000. Under this third scenario, the total cost to the Proect would be $655,000.

Table 1: Summary of Results

			Project Cost Allocation			
Scenario / Fire Service Std.		**Geography**	Facilities	Operating	25 Years of Operating	**TOTAL, Rounded**
#1	FY10 Current Level of Service	North Desert Regional Service Zone	$38,000	$6,200	$155,000	**$193,000**
#2	2020 System Plan Level of Service	Barstow and Victor Valley RSAs	$36,000	$10,600	$265,000	**$301,000**
#3	2020 Risk-Weighted System Plan	Barstow and Victor Valley RSAs	$80,000	$23,000	$575,000	**$655,000**

Sources: Willdan Financial Services; Stanley R. Hoffman Associates, Inc; San Bernardino County Fire Department; San Bernardino County General Plan Housing and Economic Development Background Reports.

Methods and Assumptions

The methods used in this analysis are common practice in California local government finance and are consistent with 23 years of implementing the 1987 *Mitigation Fee Act* (the "Act" or Government Code §66000 *et seq.)*. The original *Act*, later amendments to it, and related case law provide key ground rules for local agencies to follow when charging new development for the cost of expanded public infrastructure.

The following three guidelines summarize and explain the public finance practices that apply when cities, counties, or special districts determine development's share of facility costs:

A. **PROJECT'S SHARE OF GROWTH. Costs for serving new development must be based on a proportionate share of the District's cost to add fire services capacity to the current system of stations and staffing.** The Project's share of fire services costs can be estimated by comparing the amount of growth proposed by the project to the amount of development in the fire services area in total.

   As a hypothetical example, if a project will contribute to expanding employment by 5 percent in the service territory, it is fair that the project contribute 5 percent of the cost required to serve existing nonresidential development.

   In this analysis, the Project will add 80 jobs to an estimated 49,600 total jobs in the District's North Desert Regional Service Territory and 80 jobs to an estimated 130,000 jobs in the Barstow-Victor Valley area (see **Tables 2** and **3**).

Table 2: Growth Projections in Project Area, 2010-2020

Victor Valley and Barstow Regional Statisical Areas[1]	2010	2020	Growth 2010-2020	Percent Change 2010-2020
Population	389,750	397,510	7,760	2.0%
Households	126,096	127,894	1,798	1.4%
Employment	128,970	129,519	549	0.4%

[1]Unincorporated territory only.

Sources: Stanley R. Hoffman Associates, Inc; San Bernardino County General Plan Housing and Economic Development Background Reports, 2005

Table 3: Employment Estimate for North Desert Regional Service Zone

	Formula	Value
Victor Valley and Barstow Regional Statisical Areas		
Population 2010	*A*	389,750
Employment 2010	*B*	128,970
Ratio Jobs:Population 2010	*C = B / A*	0.33
North Desert Regional Service Zone		
Population 2010	*D*	150,000
Ratio Jobs:Population 2010	*C*	0.33
Employment 2010, Est.	*E = D * C*	49,600

Sources: Stanley R. Hoffman Associates, Inc; and San Bernardino County General Plan Housing and Economic Development Background Reports, 2005

B. **PROJECT'S SHARE OF BETTER FIRE SERVICES. If the fire services that new development will fund will be provided by the District at a higher level (better response, additional firefighting capabilities, etc.) than is currently delivered, then new development must share the additional cost with existing development.** The Project can fund its share of total growth if the fire services are to remain the same (see **Tables 4** through **6**). This is the basis for Scenario #1, the *Fiscal Year 2010 Current Level of Service.*

Table 4: Current Level of Fire Protection Service in Project Area

North Desert Regional Service Zone	Formula	Value
Stations	*A*	20
Square Miles	*B*	10,884
Area Served per Station (sq miles/station)	*C = B / A*	544
Staffing	*D*	58
Staffing per Station	*E = D / A*	2.9
Residents	*D*	150,000
Employment[1]	*E*	49,600
Service Population	*F = D + E*	199,600
Service Population per Station	*G = F / A*	9,980

[1]Estimated from 2010 jobs and housing projections in the County General Plan Update.

Sources: Stanley R. Hoffman Associates, Inc; Willdan Financial Services.

Table 5: Facilites and Operating Costs per Person Served, Current Service Level

North Desert Regional Service Zone	Formula	Value
Operations		
Fiscal Year 2009-2010 Budget	*A*	$ 15,545,722
Service Population	*B*	199,600
Operations Budget Standard per Person Served	*C = A / B*	$ 78
Facilities[1]		
Replacement Cost per Station	*D*	$ 4,688,636
Stations	*E*	20
Replacement Cost, All Stations[2]	*F = D * E*	$ 93,772,720
Capital Standard per Person Served	*G = F / B*	$ 470

[1]Fire Protection Facilities costs includes one-time charges for land, buildings, apparatus, and special equipment.

[2]The existing 20 stations would not likely have replacement costs equal to the new station cost of $4.7 million, but the result is shown here to avoid an underestimate of system value.

Sources: County of San Bernardino; Stanley R. Hoffman Associates, Inc; and Willdan Financial Services.

Table 6: Project Fire Protection Funding Requirements, FY10 Budget Standard

Funding Component	Formula		Value
Project Employment at Buildout	*A*		80
Added Fire Protection Service Population	*A*		80
Operations			
Fire Protection Operations Standard Per Person Served	*B*	$	78
Annual Funding Requirements for Project	*C = B * A*	$	6,200
25 Year Total Requirement	*D = C * 25*	**$**	**155,000**
Facilities[1]			
Fire Protection Capital Standard Per Person Served	*E*	$	470
One-Time Funding Requirements for Project	*F = E * A*	**$**	**38,000**
TOTAL	*G = D + F*	**$**	**193,000**

[1]Fire Protection Facilities costs includes one-time charges for land, buildings, apparatus, and special equipment.

Sources: County of San Bernardino; Stanley R. Hoffman Associates, Inc; and Willdan Financial Services.

However, if a faster response time and hazardous material capabilities will increase the quality of the service, for example, a project is responsible only for its share of *both* the current level of service and the higher level of service. It would not be permissible under current law for new development (either one project or all projects combined) to fund the full amount of the higher level of service. This concept is the basis for Scenario #2, the *2020 System Plan Level of Service.*

The Project cannot be charged a disproportionate share of the higher level of service. To continue the hypothetical example, suppose that a 15 minute response time is currently provided to the project area for a $4,000,000 total area cost. The project's share–representing 5 percent growth in the service population-- would be $200,000 to maintain the15 minute response times.

However, if a 10 minute response time were proposed for the project area at an additional cost of $2,000,000, the project could not be charged $2,000,000. Instead, the project's share of a 15 minute response time is likely limited to $300,000 or 5 percent of the new service cost of $6,000,000. The District would need to locate alternative revenues totaling $1,700,000, ideally from existing development, to provide the entire area with a 10 minute response time.

See **Tables 7** through **9** for details.

Table 7: Fire Protection System Plan, North and South Deserts and Victorville Divisions

	Unit cost	Units	2010	2020	Additional 2010-2020	Percent Change
Staffing and Facilities						
Stations			45	51	**6**	13.3%
Personnel[1]			155	308	**153**	98.7%
Engine Companies					**17**	
Costs						
Annual Operating[2]	$ 1,977,846	per engine company	$ 37,636,917	$ 70,130,027	**$ 32,493,110**	86.3%
Replacement Costs, Facilities[3]	$ 4,688,636	per station	$ 210,988,620	$ 237,593,983	**$ 26,605,363**	12.6%

[1]2010 staffing based on 58 North Desert, 36 South Desert, and 61 Victorville approved positions. 2020 staffing assumes 6 additional engine companies staffed with 9 personnel each.

[2]Elevent of the 17 additional engine companies have a lower annual operating cost of $1,875,094. The 2010 operating cost assumes 100% of North and South Desert Regional Service Zone appropriations, plus the Victorville Division's share (based on 61 of 493 approved positions) of the $97.0 million FY10 appropriations for the District, SKX-106.

[3]One proposed station at Amboy has a lower capital cost of $3,162,183. The existing 45 stations would not likely have replacement costs equal to the new station cost of $4.7 million, but the result is shown here to avoid an underestimate of system value.

Sources: San Bernardino County FY10 Budget, Stanley R. Hoffman Associates, Inc;.

Table 8: Facilites and Operating Costs per Person Served, System Plan Standard

In 2020[1]	Amount	Staffing	Facilities
Fire Protection Cost		$ 70,130,027	$ 237,593,983
Population	397,510		
Employment	129,519		
Service Population	527,029		
Fire Protection Cost Standard per Person Served		$ 133	$ 451

[1]All figures are for the North and South Desert and Victorville Divisions.

Sources: County of San Bernardino; Stanley R. Hoffman Associates, Inc; and Willdan Financial Services.

Table 9: Project Fire Protection Funding Requirements, System Plan Standard

Funding Component	Formula	Value
Project Employment at Buildout	*A*	80
Added Fire Protection Service Population	*A*	80
Operations		
Fire Protection Operations Standard Per Person Served	*B*	$ 133
Annual Funding Requirements for Project	*C = B * A*	$ 10,600
25 Year Total Requirement	*D = C * 25*	**$ 265,000**
Facilities[1]		
Fire Protection Capital Standard Per Person Served	*E*	$ 451
One-Time Funding Requirements for Project	***F = E * A***	**$ 36,000**
TOTAL	*G = D + F*	**$ 301,000**

[1]Fire Protection Facilities costs includes one-time charges for land, buildings, apparatus, and special equipment.

Sources: County of San Bernardino; Stanley R. Hoffman Associates, Inc; and Willdan Financial Services.

C. **IMPACT OF UNIQUE PROJECT ATTRIBUTES. Certain types of new development may pose unusual levels of demand on a fire services system.** To correctly allocate the costs of land uses whose service demands are not identical even if the added service population from two projects is identical, a risk weighting evaluation is useful. The District has produced an Emergency Response Matrix to address differences among 14 proposed solar energy projects, including the Project examined in this study. This matrix, plus the system plan standard of analysis, is the basis for Scenario #3, the *2020 Risk-Weighted System Plan.*

This analysis extends the concept of a service demand matrix by ranking land uses that will constitute the full range of growth in the Project area. **Table 10** provides example ranking data for residential, retail, office, warehouse, mining, and manufacturing uses in unincorporated County locations where they are likely to develop by 2020. These uses represent 94 percent of all growth projected for the Barstow and Victor Valley Regional Statistical Areas and 100 percent of the growth for which the District will the service provider based on current agreements.

The Applicant believes that the District's marix contains incorrect criteria, incorrect weighting criteria and incorrect risk "scores" that overstate the risks presented by the Project. Nevertheless, for the purpose of this analysis, the District's original criteria values and weighting scheme has been preserved. **Table 11** then weights 2020 development by the Emergency Response weighting factors to allocate fire services costs. The Project at its proposed location receives a higher share of costs than some other projects because of the District's evaluation of the response time and the Project's fire, hazmat, and rescue attributes, as shown in **Table 12**. While the Applicant does not agree this evaluation, this evaluation has preserved the District's assessment as one scenario for analysis.

Conclusion

It is important to recognize that for the purpose of adopting a development impact fee according to the California *Mitigation Fee Act,* a nexus must be defined for the amount paid by the Project for capital facilities. The Staff's analysis does not present a clear nexus using the common practices of cost allocation described in guidelines A, B, and C (above). In contrast, this analysis and associated tables are consistent with the Act as it applies to any local agency seeking a mitigation fee to fund a capital project that serves growth.

Overall, new development, such as this Project, should fund its share of expanded public services, defined by a proportional share of current service costs or by a proportional share of current and incremental service costs if the service standard will be increased, i.e. better response times. On the other hand, new development, such as this Project, should not be required to fund costs of providing a higher level of service to *existing* residents and businesses in the Project area.

Table 10: Emergency Response Matrix, 2020 Land Uses

			Land Use						
Criteria	**Points**	**Weight**	*Project*	Residential	Retail	Office	Warehouse	Mining	Manufacturing
1. Inspections		0.10							
minimal need	1			1	1	1			
average need	3		3				3	3	3
significant need	5								
2. Fire									
A. Quantity stored on-site		0.20							
<1000 gal	1			1	1	1	1		
<1000 and <100,000 gal	2							3	3
>100,000	5		5						
B. Fire/Explosion Off-Site Consequences		0.30							
limited to site	1								
potential for smoke and/or fire and/or blast effects	3			3	3	3	3	3	3
potential for major fire/blast structure damage and/or injuries/fatalities off-site and/or major hwy disruption/closure	5		5						
3. HazMat									
A. Proximity to or potential for effect on all human receptors		0.05							
no sig quant of hazmats or no potential for off-site impacts within 1/2 mi	1			1	1	1			
<10 receptors within 1/2 mi.	2								
>10 receptors within 1/2 mi.	3								
>50 within 1/2 mi.	4						4	4	4
>100	5		5						
B. Hazmat Response Time		0.05							
<30 minutes	1			1	1	1	1		1
30-60 minutes	3		3					3	
>60 minutes	5								
4. Rescue First Alarm		0.15							
<30 minutes	1		1	1	1	1	1		1
30-60 minutes	3							3	
>60 minutes	5								
5. EMS Response of Certified Medic		0.15							
Staff on site	1								
<15 min response time	2			2	2	2	2		2
15-30 min response time	3							3	
30-45 min response time	4		4						
>60 min response time	5								
Sum Weighting Factors		**1.00**							
TOTAL Score			**3.95**	**1.75**	**1.75**	**1.75**	**2.10**	**3.05**	**2.50**

Sources: Willdan Financial Services; San Bernardino County Fire District.

Table 11: Land Use Share of Emergency Response Demand in 2020

			Nonresidential							
	Project	**Residential**	Retail	Office[2]	Warehouse	Mining	Manufacturing	Military	**All Jobs**	**All Jobs Net of Armed Forces Jobs[3]**
	A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*J = C + D + E + F + G + H*	*K = C + D + E + F + G*
Emergency Response Weighting	3.95	1.75	1.75	1.75	2.10	3.05	2.50	-		
Units	Jobs	Residents	Jobs	Jobs	Jobs	Jobs	Jobs	Jobs		
Share of Total Employment			22%	38%	10%	10%	14%	6%		**100%**
Residents/Workers in 2020[1]	80	397,510	28,624	48,699	13,340	12,693	18,521	7,642	**129,519**	
Total Emergency Weighting, 2020	316	695,643	50,092	85,223	28,014	38,714	46,303	-		**944,304**
Percent share	*0.03%*	*73.67%*	*5.30%*	*9.02%*	*2.97%*	*4.10%*	*4.90%*	-		**100.00%**

[1]All figures are for the Victor Valley-Barstow Regional Statistical Areas of the County. Future employment shares by use are expected to be similar to current employment shares by use. Sector shares are from General Plan Update Background Report for Economic Development.

[2]Includes all Finance, Insurance, and Real Estate; Services; and Public Administration jobs.

[3]Excludes 5.9% of total jobs in the armed forces, as County fire protection services are not required for military employment sites.

Sources: County of San Bernardino Fire District; County of San Bernardino General Plan Update Economic Development Background Report; Stanley R. Hoffman Associates, Inc; and Willdan Financial Services.

Table 12: Land Use Share of Fire Protection and EMS Costs in 2020

	Project	Residential	Retail	Office	Warehouse	Mining	Manufacturing	**TOTAL**
Total Emergency Response Weighting, 2020	316	695,643	50,092	85,223	28,014	38,714	46,303	**944,304**
Percent share	*0.03%*	*73.67%*	*5.30%*	*9.02%*	*2.97%*	*4.10%*	*4.90%*	***100.00%***
Costs								
Annual Operating	$ 23,000	$ 51,663,000	$ 3,720,000	$ 6,329,000	$ 2,080,000	$ 2,875,000	$ 3,439,000	**$ 70,130,000**
25-Year Requirement	$ 575,000	$ 1,291,575,000	$ 93,000,000	$ 158,225,000	$ 52,000,000	$ 71,875,000	$ 85,975,000	**$ 1,753,250,000**
Replacement Costs, Facilities[1]	$ 80,000	$ 175,026,000	$ 12,603,000	$ 21,442,000	$ 7,048,000	$ 9,740,000	$ 11,650,000	**$ 237,590,000**
Total	**$ 655,000**	**$ 1,466,601,000**	**$ 105,603,000**	**$ 179,667,000**	**$ 59,048,000**	**$ 81,615,000**	**$ 97,625,000**	**$ 1,990,840,000**

[1]The existing 45 stations would not likely have replacement costs equal to the new station cost of $4.7 million, but the result is shown here to avoid an underestimate of system value.

Sources: County of San Bernardino Fire District; County of San Bernardino; Stanley R. Hoffman Associates, Inc; and Willdan Financial Services.

Stuart Thomas (Tom) Couch

Fire, Safety & Environmental Specialist

Home address; 19074 Wagon Wheel Tr.
PO Box 192
Helendale, CA 92342
Phone: 760-843-5472
Cell: 760-964-7935
Email k6dktom@yahoo.com

Employment History

1969-1972 - US Army: Served in Vietnam as Transportation and Logistics

1972-1978 - Carnegie Institution of Washington, Mt. Wilson Observatories: Logistics and Construction Liaison for the construction of the Las Campanas Observatories 100" Telescope and Commons Buildings at La Serena Chile.

1978-1982 – Vari-Tronics Inc: Purchasing Manager and Communications Designer. A manufacture of components for the Telephone Industry.

1982-1987 - Couch Communications: General Contractor. The business designed and built mountain top radio communications repeater facilities and cable TV head ends.

1983-2000 – San Bernardino County Fire: Pay call fire fighter, plan checker, inspector and investigator. Promoted to Engineer in 1986 and to Lieutenant in 1989 and to Captain in 1999. Duties included plan check, (including plan check and permit condition determination for solar plants SEGS III through SEGS VIII) construction of new fire stations, fire fighter and crew leader. Instructed many fire fighting classes.

1984-1985 – California Department of Forestry (Today known as Cal-Fire): Fire fighter.

1990-1992 - Luz Engineering Corporation: Fire Prevention and Safety duties included the development of fire prevention and safety training and formation of industrial fire brigades for all three California solar parabolic trough development sites, Daggett, Kramer Junction, and Harper Lake California (comprising SEG I through IX) specified and procured all required emergency response vehicles and equipment.

1992-2005 - KJC Operating Company: Safety Specialist. Duties included all site safety, safety training, security, communications, drug testing and Fire Chief for the Site Emergency Response Team. Qualified the ERT and facility as Station

89 in 1995 becoming a certified fire department within the state of California, ID #36116.

2006-2009 - Acciona Solar Power: Safety, Fire and Environmental Specialist. Assisted in securing all Environmental Permits, Designed the fire protection system for the 70 MW Nevada Solar One project and qualified it for implementation through the Boulder City Fire Department. Handled all Environmental monthly and quarterly reports. Authored the LQG Hazardous Material Plan and training package.

2009-Current - Working on the development of radio station KQTE in Silver Lakes/Helendale. Working with the Silver Lakes Association on developing a disaster preparedness plan for the Silver Lakes / Helendale Area.

Education consists of studies in General Engineering, Fire Science, and Hazardous Materials. High School Plus 125 units of advanced Studies.

Certifications
Amateur Radio Operator Extra Class
CSFM Certified Fire Fighter I & II
CSFM Hazardous Material Technician & Specialist
Many additional Fire related Certifications.

Eric J. Nickell

Public Finance Lead

Education

Master of Public Affairs with Emphasis in Economics and Public Policy, Woodrow Wilson School of Public Affairs, Princeton University

Bachelor of Arts in Chemistry, the Colorado College

Areas of Expertise

Impact Fee Nexus Studies

Public Services and Infrastructure Funding Plans

Budget Analysis

Affiliations

Urban Land Institute

National Impact Fee Roundtable

16 Years Experience

Eric Nickell is a Principal Consultant in the Sacramento and Oakland offices of Willdan Financial Services. Mr. Nickell leads the firm's impact fee practice and has worked for numerous fire districts, cities, and counties on questions of fire facilities and staff planning.

His practice areas include infrastructure finance plans, fiscal analysis, taxsharing negotiations, and development impact fee nexus studies.

Relevant Experience

Fire Operations and Facility Funding

City of Madera Comprehensive Impact Fee Program: As consultant to the City, Mr. Nickell is updating capital projects and costs for city hall, roadway, bridge, fire protection, wastewater, drainage, water, and park impact fees as part of an update and streamlining of the City's current programs.

Mountain View Fire District Impact Fee Program: Working on behalf of the District, Mr. Nickell has prepared documentation supporting new impact fees for this rural fire agency. The fees will fund additional fire station capacity and apparatus as development occurs.

County of Sacramento Fiscal Peer Review: Working to assist the County with better revenue generation, Mr. Nickell is estimating General Fund revenue and cost impacts from various tax sharing and development options in Folsom and Natomas for the County. Key issues include fire services funding by the City in development proposed for its sphere of influence.

County of Riverside Development Impact Fee Update: As consultant to the County, Mr. Nickell is assisting with the update of a large County fee program that will improve program defensibility reconcile different policy goals involving General Plan facility standards, CEQA documentation, and available alternative funding.

County of Sacramento Development Exactions Comparison: Working on behalf of the County's Municipal Services Agency, Mr. Nickell is estimating total fees, special taxes and assessments, and developer contributions for public infrastructure and services, including fire protection contributions, for 15 development sites in the Sacramento Region.

CEQA Alternatives Analysis

City of Rancho Cordova Rio del Oro CEQA Alternatives Economic Analysis: In collaboration with Remy Thomas Moose & Manley, Mr. Nickell prepared public benefit comparisons of seven EIR/EIS alternatives as part of the U.S. Army Corps of Engineers' permit evaluation process for this master planned community.

County of Placer Vineyards Specific Plan CEQA Alternatives Analysis: Working for the developer, Mr. Nickell evaluated the Specific Plan's EIR alternatives for their support of planning objectives such as jobs-housing balance, efficiency in land use, and town center–design concept and transit service–plan viability.

Declaration of
Thomas Couch

I, Thomas Couch declare as follows:

1. I am presently employed by Abengoa Solar as Fire Protection Consultant.

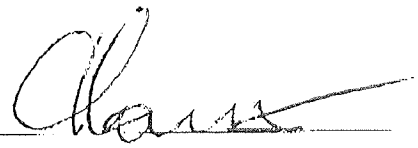
2. A copy of my professional qualifications and experience are attached hereto and incorporated herein by reference.

3. The attached testimony on Worker Safety/Fire Protection for the Abengoa Mojave Solar Project was either prepared by me or under my direction for the Mojave Solar project based on my independent analysis, supplements thereto, data from reliable sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue(s) addressed herein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: July 13, 2010 Signed: 

At: Helendale, California

Declaration of
Eric Nickell

I, Eric Nickell, declare as follows:

1. I am presently employed by Willdan Financial Services as a Principal Consultant.

2. A copy of my professional qualifications and experience are attached hereto and incorporated herein by reference.

3. The attached testimony on Fire Services Cost Allocation was either prepared by me or under my direction for the Mojave Solar project based on my independent analysis, supplements thereto, data from reliable sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue(s) addressed herein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: July 13, 2010

At: Oakland, CA

Signed: Eric J Nickell

STATE OF CALIFORNIA

Energy Resources Conservation
and Development Commission

Application for Certification for the ABENGOA MOJAVE SOLAR POWER PLANT	)	Docket No. 09-AFC-5

PROOF OF SERVICE

I, Karen A. Mitchell, declare that on July 13, 2010, I served the attached *APPLICANT'S SUPPLEMENTAL OPENING TESTIMONY ON WORKER SAFETY AND FIRE PROTECTIION* via electronic and U.S. mail to all parties on the attached service list.

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

Karen A. Mitchell

SERVICE LIST
09-AFC-5

APPLICANT

Emiliano Garcia Sanz
General Manager
Abengoa Solar Inc.
11500 West 13th Avenue
Lakewood, CO 80215
emiliano.garcia@solar.abengoa.com

Scott D. Frier
Chief Operating Officer
Abengoa Solar Inc.
13911 Park Ave., Ste. 206
Victorville, CA 92392
scott.Frier@solar.abengoa.com

Tandy McMannes
2030 Addison Street, Suite 420
Berkeley, CA 94704
tandy.mcmannes@solar.abengoa.com

APPLICANT'S CONSULTANTS

Frederick H. Redell, PE
Engineering Manager
Abengoa Solar Inc.
11500 West 13th Avenue
Lakewood, CO 80215
frederick.redell@abengoa.com

COUNSEL FOR APPLICANT

Christopher T. Ellison
Ellison, Schneider & Harris
2600 Capitol Ave.
Sacramento, CA 95816
cte@eslawfirm.com

INTERESTED AGENCIES

California ISO
e-recipient@caiso.com

INTERVENORS

County of San Bernardino
Ruth E. Stringer, County Counsel
Bart W. Brizzee, Deputy County Counsel
385 N. Arrowhead Avenue, 4th Floor
San Bernardino, CA 92415-0140
bbrizzee@cc.sbcounty.gov

California Unions for Reliable Energy
Tanya A. Gulesserian
Marc D. Joseph
Elizabeth Klebaner
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080
tgulesserian@adamsbroadwell.com
eklebaner@adamsbroadwell.com

Luz Solar Partners Ltd., VIII
Luz Solar Partners Ltd., IX
Jennifer Schwartz
700 Universe Blvd
Juno Beach, FL 33408
jennifer.schwartz@nexteraenergy.com

ENERGY COMMISSION

Anthony Eggert
Commissioner and Presiding Member
aeggert@energy.state.ca.us

James D. Boyd
Vice Chairman and Associate Member
jboyd@energy.state.ca.us

Kourtney Vaccaro
Hearing Officer
kvaccaro@energy.state.ca.us

Lorraine White
Adviser to Commissioner Eggert
lwhite@energy.state.ca.us

Craig Hoffman
Project Manager
choffman@energy.state.ca.us

Christine Hammond
Staff Counsel
chammond@energy.state.ca.us

Jennifer Jennings
Public Adviser's Office
publicadviser@energy.state.ca.us