Reznick | Think Energy

SOLAR POWER PURCHASE AGREEMENT EVALUATION: SUNPOWER PHASES 1B AND 2

PAUL WOODS, DIRECTOR OF PLANNING AND CONSTRUCTION
Sweetwater Union High School District
1130 Fifth Avenue
Chula Vista, California 91911

SUBMITTED BY
Reznick Think Energy, LLC
7501 Wisconsin Avenue Suite 400E
Bethesda, Maryland 20814

301-589-9522

Helen Tocco, Engineer
htocco@reznickthinkenergy.com

Matt Fellmeth, Analyst
mfellmeth@reznickthinkenergy.com

January 28, 2013

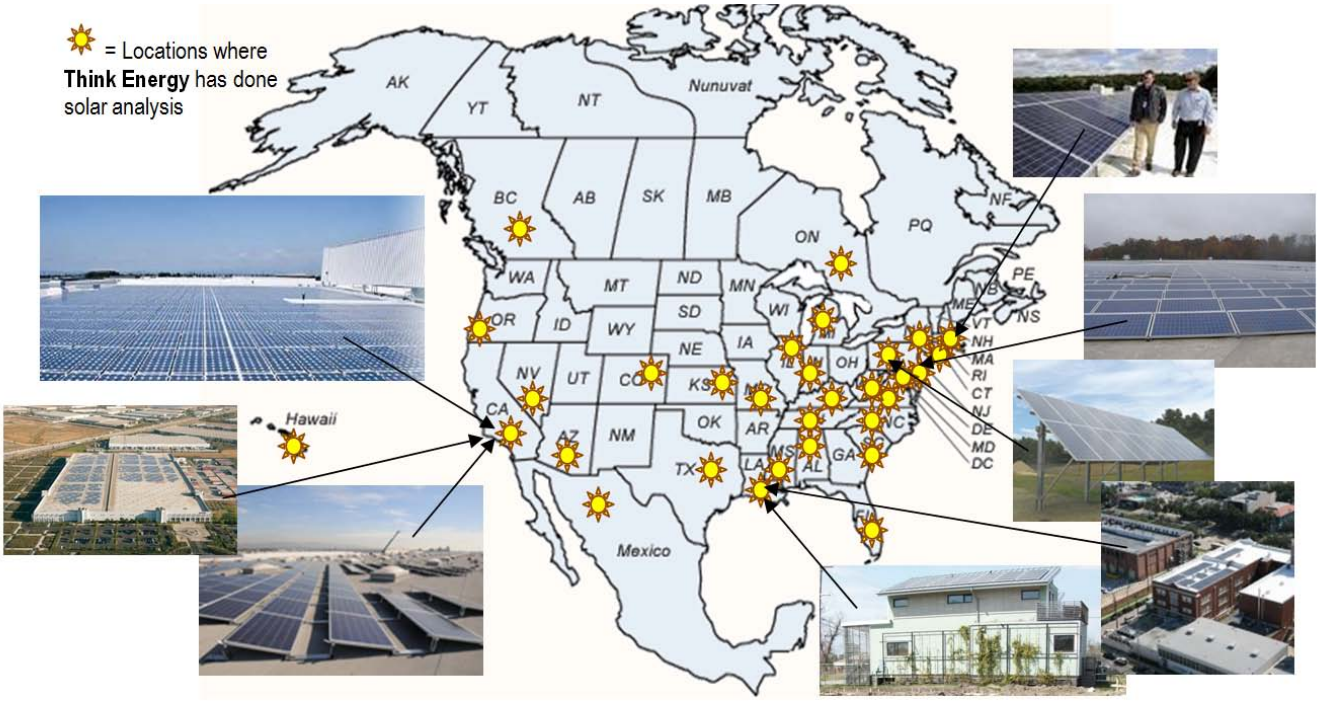
Table of Contents

INTRODUCTION

Reznick Think Energy, LLC (RTE) is pleased to support the Sweetwater Union High School District (SUHSD) in the evaluation of a solar photovoltaic (PV) proposal from SunPower Corporation (SunPower) for Phase 1B and Phase 2 of the currently ongoing PV project. It is our understanding that only about 60% of the original Phase 1 solar installations were completed due to problems with existing roof structures, and as a result SunPower has proposed Phase 1B, which consists of replacement projects. Additionally, SunPower has proposed Phase 2 with the goal of expanding the project onto additional sites and helping SUHSD take advantage of cost savings that result from the economies of scale of a larger project.

About Reznick Think Energy, LLC

RTE is a consulting firm focusing on renewable energy generation. We assist project developers, investors, governmental organizations, and consumers and generators of renewable power. Since RTE was founded in 2000, we have been supporting clients interested in acquiring on-site renewable energy systems, developing renewable energy projects, purchasing and selling electricity and renewable energy credits (RECs), expanding and improving their renewable energy businesses, and investing in renewable energy projects and businesses. Working alongside CohnReznick and Reznick Capital Markets, RTE offers one of the most comprehensive project advisory platforms in the industry. RTE has assembled a team experienced in economic, financial and policy analysis; project management; engineering; technology and resource evaluation; and project feasibility studies.



Our staff of highly responsive, diverse, and specialized consultants has over 70 years of combined experience in engineering, environmental science, energy, finance, economics, and business administration. Some of RTE's accomplishments include:

- Feasibility analyses of well over 300 MW of PV and over 1,400 site surveys
- Procurement and installation of over 25 MW of PV projects in North America
- Feasibility analyses of over 20 MW of wind projects and 200 kW of small wind projects
- Saved a manufacturing company nearly $6.1M on the cost of their PV system
- Developed business plans and marketing strategies for eight PV-related companies
- Identified potential finance partners on over 20 MW of solar projects in New Jersey
- Managed the North American Board of Certified Energy Practitioners and helped the New York State Energy Research and Development Authority bring renewable energy businesses to the state

In addition to the body of work described above, RTE helped SUHSD complete a request for proposals process and procure the solar photovoltaic projects that have been installed as Phase 1 of this project, and we are pleased to assist with Phases 1B and 2.

PHASE 1B AND 2 PROPOSAL REVIEW

Reznick Think Energy has reviewed SunPower's updated proposal from both a qualitative and quantitative standpoint. It is our understanding that while one version of the proposal was included with the RFP to which we responded, a slightly updated version will ultimately be presented to the School Board on January 28th. With that goal in mind, we have reviewed both versions of this proposal, and our results are summarized below.

Project Overview

System Size	6,448.44 kW
Year 1 Output	10,882,602 kWh
Annual Degradation Rate	0.25-0.50%
Contract Term	20 Years
PPA Rate	$0.1475
Annual PPA Escalator	3.00%
Utility "Price to Compare"	$0.1538 (projected based on proposed rate structure change which will take effect in 2014)
Projected Utility Escalation Rate	3.39-4.00%
Funding from DG-R Settlement	$1,063,993
Projected Savings – Worst Case*	$4,500,000
Projected Savings – Expected Case	$7,500,000

* Worst case scenario assumes 3.39% utility escalation, 0.50% output degradation, and no REC sales. Expected and Worst Case scenarios are discussed in the quantitative review section below.

Qualitative Review Comments

- **General:** SunPower claims to have spent $768,340.52 in design and project management costs towards rooftop systems in Phase 1 of the project, which never came to fruition due to defects in the roof systems and errors in the as-built drawings provided by the District's roofers. While this number seems somewhat high, we believe that it shows a good faith effort on SunPower's part that they have chosen to try to recoup this cost through profits from additional projects rather than trying to charge the District directly.

- **Contract Term:** The original proposal from September 27, 2012, shows that SunPower wished to extend the contract term to 25 years. However, the updated proposal from January 11, 2013, shows this being shortened to a 20 year team. We believe that either term would be appropriate for the District, and we recommend choosing the term that offers the lowest starting PPA rate to the District.

- **Technology:** The concept of moving from rooftop systems to mostly carport systems makes sense for several reasons. First, it will avoid future potential issues with roof conditions. Second, the capital cost for carport technologies and solar PV in general has dropped significantly since the RFP process for Phase 1 of the project, meaning that carports are now cost-effective; whereas previously, they were much more expensive than rooftop mounted systems. The 327 Watt panels proposed by SunPower are state of the art, and one of the most efficient solar panels available on the market. Furthermore, these panels are considered a "Tier 1" product by financiers; in other words, they are very high quality and have a long track record of success. All proposed racking and mounting systems are Division of the State Architect (DSA) approved, which will speed the design approval process.

- **System Size:** The RTE team has visited some, but not all, of the proposed sites in person. Based on this site experience, and the aerial photographs and other documentation provided, we believe that the proposed system locations appear to be reasonable and feasible. Furthermore, we have spot checked a few proposed system sizes based on the square footage available, and the proposed system sizes are reasonable. We do recommend, however, that the District double check the proposed system locations to ensure that they do not interfere with any portables that are on the campuses in the parking lot areas, or with any planned future development.

- **Educational Value:** Phases 1B and 2 will provide solar learning opportunities to 12 additional schools and even more students around the District. The educational programs proposed by SunPower via Project Lead the Way, the Solar Science Academy, and the Teacher Training Program, appear to be well thought out, and add intangible value to the project.

- **RECs:** 100% of the Renewable Energy Certificates (RECs) will be retained by the District, providing the opportunity to earn Leadership in Energy and Environmental Design (LEED) points, or the option for future sales. By retaining the RECs, the District also positions itself as a "green powered" school district, setting a strong example for other school districts across California.

- **Timing:** Completion of the project by Q4 2013 is possible, provided the project is approved early in 2013 and begins the permitting process immediately.

- **Energy Usage Offset:** The proposed school energy usage offset by solar is reasonable. One concern we had with Phase 1 of the project was that some of the outputs of the PV systems were very high, and there was a chance the systems could overproduce if the usage of the school changed (for example, if portables were removed). The highest percentage in this batch of schools is 91.6%, but most are much lower than that.

- **Degradation Rate:** The 0.25% annual degradation rate proposed by SunPower is somewhat aggressive. They do have solid support that this degradation rate will easily be met on Sweetwater's projects. However, it is not yet industry-standard to assume a rate this low, and there is no power output guarantee for the project, so for the purposes of this financial analysis, we have performed a sensitivity analysis showing a range of savings from with degradation from 0.25% to 0.50%. More information on this is included in the quantitative review section.

- **Strength and Experience:** SunPower Corporation has long been a leader in the US solar industry. SunPower both manufactures and integrates solar panels and mounting systems, and will be installing their own technologies on SUHSD's schools. SunPower is currently the top ranked US solar company, according to a report by GTM Research, and has installed more MW of solar in the 1-5 MW project size range than any other company in the US. In other words, they lead the market in mid-sized projects such as this. Most of SunPower's manufacturing operations are located in Malaysia, but they do still maintain some manufacturing in the US, helping to drive US job creation and the economy. Finally, in April of 2011, 66% of SunPower was purchased by oil giant Total SA, the 11th largest business in the world, providing it with a very strong financial backing.

- **Warranty:** SunPower offers a "best in class" warranty that includes not just the replacement equipment; it also covers removal of the bad panel, shipping, and installation of the new panel for 25 years. The warranty also combines power and product coverage, whereas most other companies have warranty terms for these. See the diagram at the right for a graphical explanation of SunPower's warranty compared to others in the industry.

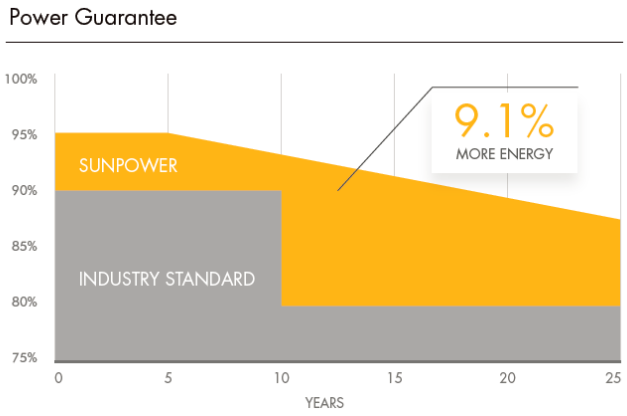


Figure 1: SunPower Panel Warranty

Quantitative Review Comments

- **General:** We believe that the updated Year 1 PPA rate of $0.1475 offered by the January 11, 2013 proposal offers even greater benefit to SUHSD than the original proposal. Furthermore, these prices are fairly industry-standard for solar projects in Southern California.

- **Rate to Compare:** RTE did a thorough analysis of SunPower's financial model. We reviewed the analysis of the $0.1538/kWh "rate to compare," or the projected utility rate that will be offset at each school site, and felt that SunPower's assumptions for kWh and kW rates are reasonable. There are some unknowns in this analysis due to the fact that the 2013-2015 General Rate Case proposed by San Diego Gas and Electric (SDG&E) has not yet been finalized, but these estimates are based on the latest pricing that was released and by assessments done by several industry organizations.

- **Annual Utility Escalation:** We have assumed an annual utility escalation rate of 4%, with the concept that the cost of fossil fuels will continue to rise, causing annual utility escalation rates to increase. RTE updated the numbers from our previous analysis and found that the average annual escalation over the last 20 years in SDG&E territory was 3.39% per year. After the proposed rate case is passed, rates are expected to rise by at least 1.5% per year, and probably more. After the last General Rate Case in 2008, the prices jumped by 6.07% in one year. To show this variation in potential future utility escalation rates, RTE ran a sensitivity analysis showing a "worst case" scenario whereby the utility rate escalation remains steady at 3.39%, and compared this to the expected rate increase scenario of 4%. Our savings results in the Project Overview table above reflect this sensitivity analysis. On a related note, it is important to be aware of the events that led SDG&E to request a rate increase, including, but not limited to: the nuclear leak at the San Onofre power plant, extensive wildfire damage, and a need for additional funding to expand their energy efficiency programs.

- **DG-R Tariff Settlement:** Part of SDG&E's General Rate Case proposal was to raise the fees for solar customers. This would include a rate increase and also a new "Network Use Charge." The settlement would provide compensation to entities hosting solar systems that relied on switching to the DG-R rates to help reduce their utility bills. Entities that have rebate applications submitted by March 2013 (SUHSD's have already been submitted), and systems installed by December 31, 2013, are eligible for a onetime credit of $0.165/W from SDG&E. This would result in a total of $1,063,993 which would be paid out as credit on the applicable site's electricity bill until the total credit has been paid off.

- **CSI Incentives:** SUHSD is eligible for California Solar Initiative incentives at an average rate of about $0.05/kWh, or a total of about $2.9 million. The application for these incentives has already been filed and approved.

- **RECs:** Because SUHSD does not plan to sell its RECs, we have taken the value of these to zero in the model. However, if SUHSD did wish to sell the RECs, the value over the term would be around $300,000, or possibly more if a Renewable Portfolio Standard-based REC market opens in California (legislation has been in process for at least five years with no results).

System Description		Economic Summary	
System Size (kWp)	6,448.44	**20-Year Nominal Savings**	**$ 7,344,090**
Yield (kWh/kWp)	1,688	**NPV @ 5.00%**	**$ 4,337,047**
Year 1 Energy Production (kWh)	10,882,602	**Upfront SDG&E Subsidy Payment**	**$ 1,063,993**
Key Assumptions			
Avoided Cost ($/kWh)	$0.1538		
Annual Utility Inflator (%)	4.00%		
Initial PPA Rate ($/kWh)	$0.1475		
Annual PPA Inflator (%)	3.00%		
REC Value ($/kWh)	$0.0000		
Annual PV degradation (%)	0.50%		
Customer Discount Rate (%)	5.00%		
SDG&E Subsidy ($/W)	$0.165		

Power Purchase Agreement - 20 Years

Year	kWh	Utility Rate	Avoided Cost Savings	SDG&E Subsidy Payment	RECs	PPA Rate	PPA Payment	Net Savings	Cumulative Net Savings
1	10,882,602	$0.1538	$1,673,259	1,063,993	$0	$0.14750	($1,605,184)	$1,132,068	$1,132,068
2	10,828,189	0.1599	$1,731,489	-	$0	0.15193	(1,645,073)	$86,416	$1,218,484
3	10,774,048	0.1663	$1,791,744	-	$0	0.15648	(1,685,953)	$105,792	$1,324,276
4	10,720,178	0.1730	$1,854,097	-	$0	0.16118	(1,727,849)	$126,248	$1,450,524
5	10,666,577	0.1799	$1,918,620	-	$0	0.16601	(1,770,786)	$147,834	$1,598,358
6	10,613,244	0.1871	$1,985,388	-	$0	0.17099	(1,814,790)	$170,598	$1,768,956
7	10,560,178	0.1945	$2,054,479	-	$0	0.17612	(1,859,887)	$194,592	$1,963,548
8	10,507,377	0.2023	$2,125,975	-	$0	0.18141	(1,906,105)	$219,870	$2,183,418
9	10,454,840	0.2104	$2,199,959	-	$0	0.18685	(1,953,472)	$246,487	$2,429,905
10	10,402,566	0.2188	$2,276,518	-	$0	0.19245	(2,002,016)	$274,502	$2,704,406
11	10,350,553	0.2276	$2,355,740	-	$0	0.19823	(2,051,766)	$303,974	$3,008,381
12	10,298,801	0.2367	$2,437,720	-	$0	0.20417	(2,102,752)	$334,968	$3,343,348
13	10,247,307	0.2462	$2,522,553	-	$0	0.21030	(2,155,006)	$367,547	$3,710,895
14	10,196,070	0.2560	$2,610,338	-	$0	0.21661	(2,208,558)	$401,780	$4,112,675
15	10,145,090	0.2663	$2,701,177	-	$0	0.22311	(2,263,440)	$437,737	$4,550,412
16	10,094,364	0.2769	$2,795,178	-	$0	0.22980	(2,319,687)	$475,491	$5,025,904
17	10,043,892	0.2880	$2,892,451	-	$0	0.23669	(2,377,331)	$515,119	$5,541,023
18	9,993,673	0.2995	$2,993,108	-	$0	0.24380	(2,436,408)	$556,700	$6,097,723
19	9,943,705	0.3115	$3,097,268	-	$0	0.25111	(2,496,952)	$600,316	$6,698,039
20	9,893,986	0.3239	$3,205,053	-	$0	0.25864	(2,559,002)	$646,051	$7,344,090
TOTAL	**207,617,241**		**$47,222,113**	**$1,063,993**	**$0**		**($40,942,016)**	**$7,344,090**	

Figure 2: Expected Case

System Description		Economic Summary	
System Size (kWp)	6,448.44	**20-Year Nominal Savings**	**$ 4,506,963**
Yield (kWh/kWp)	1,688	**NPV @ 5.00%**	**$ 2,913,730**
Year 1 Energy Production (kWh)	10,882,602	**Upfront SDG&E Subsidy Payment**	**$ 1,063,993**
Key Assumptions			
Avoided Cost ($/kWh)	$0.1538		
Annual Utility Inflator (%)	3.39%		
Initial PPA Rate ($/kWh)	$0.1475		
Annual PPA Inflator (%)	3.00%		
REC Value ($/kWh)	$0.0000		
Annual PV degradation (%)	0.50%		
Customer Discount Rate (%)	5.00%		
SDG&E Subsidy ($/W)	$0.165		

Power Purchase Agreement - 20 Years

Year	kWh	Utility Rate	Avoided Cost Savings	SDG&E Subsidy Payment	RECs	PPA Rate	PPA Payment	Net Savings	Cumulative Net Savings
1	10,882,602	$0.1538	$1,673,259	1,063,993	$0	$0.14750	($1,605,184)	$1,132,068	$1,132,068
2	10,828,189	0.1590	$1,721,333	-	$0	0.15193	(1,645,073)	$76,260	$1,208,328
3	10,774,048	0.1644	$1,770,788	-	$0	0.15648	(1,685,953)	$84,835	$1,293,163
4	10,720,178	0.1699	$1,821,663	-	$0	0.16118	(1,727,849)	$93,815	$1,386,977
5	10,666,577	0.1757	$1,874,000	-	$0	0.16601	(1,770,786)	$103,215	$1,490,192
6	10,613,244	0.1816	$1,927,841	-	$0	0.17099	(1,814,790)	$113,052	$1,603,244
7	10,560,178	0.1878	$1,983,229	-	$0	0.17612	(1,859,887)	$123,342	$1,726,586
8	10,507,377	0.1942	$2,040,208	-	$0	0.18141	(1,906,105)	$134,103	$1,860,689
9	10,454,840	0.2008	$2,098,825	-	$0	0.18685	(1,953,472)	$145,352	$2,006,041
10	10,402,566	0.2076	$2,159,125	-	$0	0.19245	(2,002,016)	$157,109	$2,163,150
11	10,350,553	0.2146	$2,221,158	-	$0	0.19823	(2,051,766)	$169,392	$2,332,542
12	10,298,801	0.2219	$2,284,973	-	$0	0.20417	(2,102,752)	$182,220	$2,514,762
13	10,247,307	0.2294	$2,350,621	-	$0	0.21030	(2,155,006)	$195,615	$2,710,377
14	10,196,070	0.2372	$2,418,156	-	$0	0.21661	(2,208,558)	$209,598	$2,919,975
15	10,145,090	0.2452	$2,487,630	-	$0	0.22311	(2,263,440)	$224,190	$3,144,165
16	10,094,364	0.2535	$2,559,101	-	$0	0.22980	(2,319,687)	$239,414	$3,383,580
17	10,043,892	0.2621	$2,632,625	-	$0	0.23669	(2,377,331)	$255,294	$3,638,874
18	9,993,673	0.2710	$2,708,262	-	$0	0.24380	(2,436,408)	$271,854	$3,910,728
19	9,943,705	0.2802	$2,786,072	-	$0	0.25111	(2,496,952)	$289,119	$4,199,848
20	9,893,986	0.2897	$2,866,117	-	$0	0.25864	(2,559,002)	$307,115	$4,506,963
TOTAL	**207,617,241**		**$44,384,987**	**$1,063,993**	**$0**		**($40,942,016)**	**$4,506,963**	

Figure 3: Worst Case

CONCLUSION

SunPower's proposal to SUHSD has the potential to make a positive educational and financial impact. SunPower has the proven track record to not only finance and build the project, but stand by the project for the full 20 year contract term. The worst case, most conservative scenario we would expect would result in roughly $4.5 million dollars in savings over the contract term. A less conservative scenario would result in returns of over $7.3 million for the District. While it's impossible to predict utility rates in the future, we believe that this proposed deal provides a long term, intelligent hedge against rising energy prices.

If you have any questions about this report, please do not hesitate to contact Helen Tocco at (310) 843-8272 or htocco@reznickthinkenergy.com.