

Power Purchase Agreement Feasibility Study

Mammoth-San Manuel Unified School District No. 8
&
Tioga Solar San Manuel, LLC

Prepared by:

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Executive Summary

This Feasibility Study is provided in compliance with the provisions of A.R.S. § 15-213.01 and pursuant to the Power Purchase Agreement (the “Agreement”) between Tioga Solar San Manuel, LLC (“Provider”) and Mammoth-San Manuel Unified School District No. 8 (“Host”).

Provider has prepared the following summary of terms of the Agreement. Provider proposes to finance, install, operate a solar energy system (the “Project”) on Host’s property, and sell the energy produced by the Project to Host. The financing and construction of the Project is subject to credit review, securing applicable federal, state, local, and/or utility incentives, and review of the proposed site by Provider and its financing parties.

Provider:	Tioga Energy San Manuel, LLC		
Host:	Mammoth-San Manuel Unified School District No. 8		
Facility:	One 319.13kW DC carport photovoltaic system, including interconnections required to deliver electricity to Host, installed on the Host’s property at 711 McNab Pkwy, San Manuel, AZ 85631		
Percentage of Energy Provided by Solar:	Approximately 65%		
Price:	Term	Annual Escalator	Year 1 Price
	Twenty (20) years	3.0 %	\$0.076/kWh
Incentives, RECs, and non-energy attributes:	Provider is entitled to all available financial incentives and other environmental attributes associated with the electricity generated by the Project. Arizona Public Service (APS) Utility is entitled to all available solar renewable energy credits (SRECs) associated with the electricity generated by the Project.		
Insurance, Operation and Maintenance	Provider will insure the Project as personal property and provide all operations and maintenance necessary.		
Early Purchase Options:	The Host shall have the option to purchase the Project from the Provider on the 7th, 10th, and 15th anniversary of the commercial operation date, at the greater of the Early Termination Amount as detailed in our PPA contract or Facility’s fair market value at the time of purchase.		
End of PPA Disposition:	At the end of the PPA Term, the Host shall have the options of entering into a new PPA, purchasing the Project at its fair market value, or having the Provider remove the Project and restore the site to its initial functional condition.		



Defined Terms

For the purposes of this Feasibility Study, the Measurement and Verification Report, and the Energy Cost Savings Report, capitalized terms shall have the meanings provided in the Agreement. Other terms shall have the meaning as defined below:

"Energy baseline" means a calculation of the amount and cost of energy used in an existing facility before the installation or implementation of the energy cost savings measures.

"Energy cost savings measure" means the Project (a 'renewable energy project' under A.R.S. § 15-213.01) financed, installed, owned, and operated by the Provider under the terms of the Agreement (a 'renewable energy power service agreement' under A.R.S. § 15-213.01) between the Host and the Provider

"Energy and operational costs of energy cost savings measures" shall refer to the price paid by the Host for electricity under the Agreement.

"Guaranteed energy cost savings contract" means the Agreement.

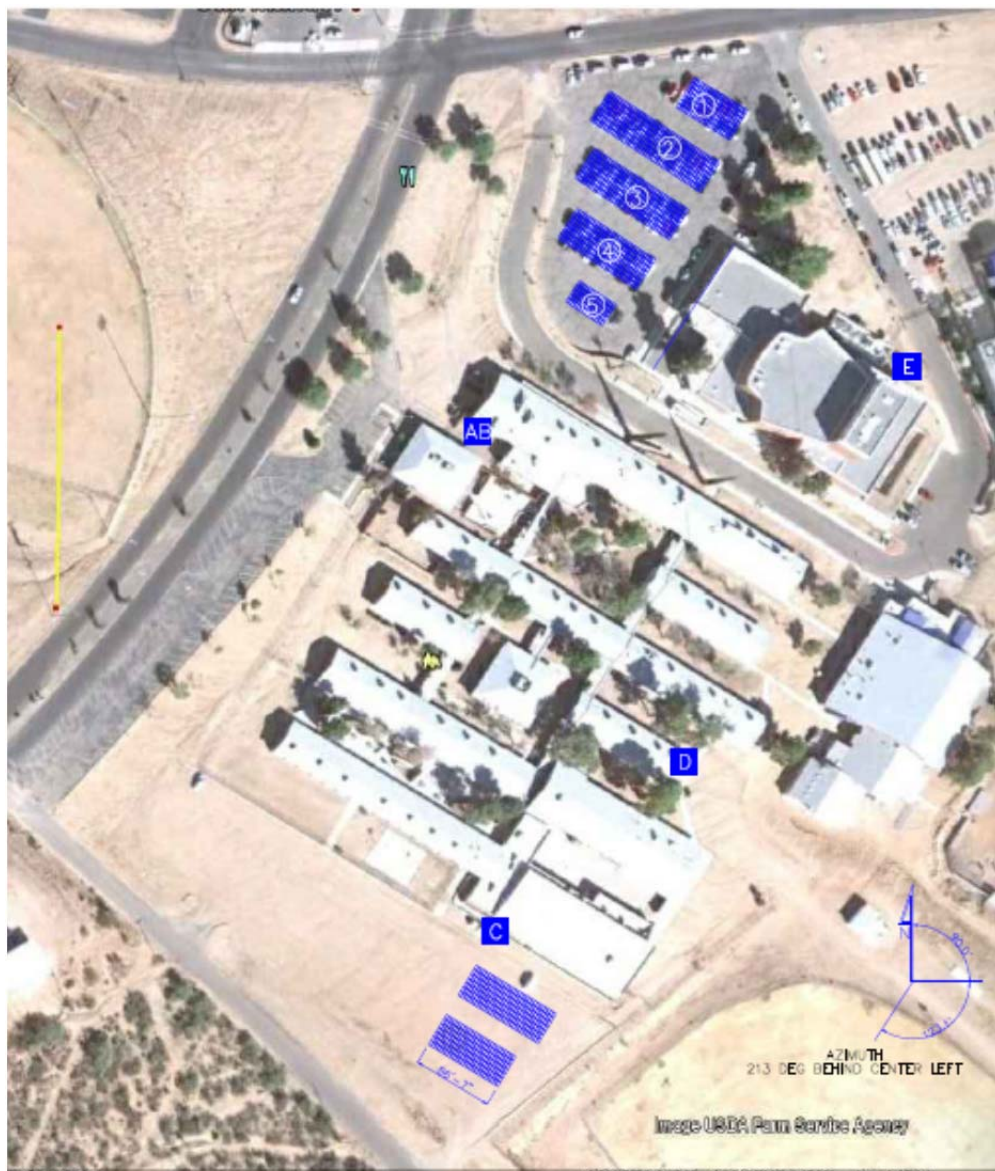
"Energy and operational cost savings" means reductions in actual budget line items currently being expended or savings realized from the implementation or installation of energy cost savings measures.

Facility Description

The San Manuel Junior and Senior High School is a public school operated by the Host, located at 711 McNab Parkway, San Manuel, AZ 85631. Provider intends to install a 319.13kW DC STC photovoltaic system on custom shade and carport structures located in the North parking lot along with a small array on the South side of campus as seen in the layout provided below.

Address:

Mammoth – San Manuel Unified School District #8
711 McNab Parkway
San Manuel, AZ 85631





Key components of the proposed Facility (the energy cost savings measure) are summarized in the following table:

Nameplate capacity (kW DC STC):	319.13kW DC
Array Footprint:	24,228 square feet
Output Criteria [60 cycle 120 hertz 3 phase]:	480 Volt, 3-Phase, 60-cycle
System CEC-AC rated Capacity (kW AC CEC):	275 kW
Quantity and type of Photovoltaic Modules:	1358 Kyocera 235watt modules (or equivalent)
Quantity and type of Inverters:	2 PVP 75kW; 1 PVP 100kW
Type of Mounting Structure:	Custom Carport Shade Structures
Other Balance-of-System items:	DC combiner boxes, wiring, grounding, and ancillary equipment needed for code compliant installation and interconnection to utility grid.
Data	Energy Recommence monitoring system

The proposed Facility will be financed, installed, owned, and operated by the Provider. Electricity generated by the Project will be sold to the Host under the terms of the Agreement. The Project will be interconnected to the electrical systems of buildings at the Site on the Host’s side of three utility electric meters as follows:

Building	Meter ID	Interconnected Capacity (kW)
Office/Café*	J88459/883066*	141.47
Addition	A63839	92.12
Auditorium	C93899	85.54

Total 319.13

*Note: two meters to be combined

Each interconnection qualifies for net metering with the local electric utility.

As owner of the solar facility, Tioga Energy is responsible for all stages of the project implementation. Tioga will provide on-site project construction manager(s) to oversee all phases of project construction. Tioga will also provide direct engineering resources and the independent engineering reviews conducted by both our construction financing lender and our project investor to ensure that system design, engineering, and construction documents meet or exceed the highest industry standards.

Facility Performance Analysis

In order to determine the energy and operational costs savings associated with the energy cost savings measure, the performance of the Project is estimated utilizing the commercial performance estimating software, PVSYST. This software performs hourly production calculations based on Facility parameters and Typical Meteorological Year weather files developed by the National Renewable energy Laboratory from data collected at the Tucson International Airport. The input parameters and output results from this modeling software are attached to this Feasibility Study. For the purposes of this Feasibility Study, the Project in aggregate has been modeled utilizing PVSYST. Detailed analysis will be performed at the meter level by assuming that the results of the PVSYST analysis scale down proportionally to the size of each subsystem that is connected to an individual meter.

Monthly Solar Production

The table below indicates, by month, the expected energy production for the Project at each of the three meters and in total for the first year of operation.

Month	Office/Café, Solar kWh per Month	Addition, Solar kWh per Month	Auditorium, Solar kWh per Month	Total, Solar kWh per Month
January	16,559	10,782	10,012	37,353
February	15,761	10,263	9,530	35,554
March	20,315	13,228	12,283	45,827
April	20,627	13,432	12,472	46,532
May	20,156	13,125	12,187	45,469
June	18,962	12,347	11,465	42,774
July	17,540	11,422	10,606	39,568
August	18,703	12,179	11,309	42,191
September	18,844	12,271	11,394	42,510
October	18,813	12,250	11,375	42,439
November	16,663	10,851	10,075	37,589
December	15,485	10,083	9,363	34,932



Annual Solar Production

The table below indicates the annual total expected energy production for the Project at each of the three meters and in total for each year of the 20 year Agreement Term, taking into account solar module degradation of 0.5% per year.

Contract Year	Office/Café, Solar kWh per year	Addition, Solar kWh per year	Auditorium, Solar kWh per year	Total, Solar kWh per year
1	218,430	142,233	132,074	492,737
2	217,338	141,522	131,413	490,273
3	216,251	140,815	130,756	487,822
4	215,170	140,110	130,103	485,383
5	214,094	139,410	129,452	482,956
6	213,023	138,713	128,805	480,541
7	211,958	138,019	128,161	478,138
8	210,898	137,329	127,520	475,747
9	209,844	136,643	126,882	473,369
10	208,795	135,959	126,248	471,002
11	207,751	135,280	125,617	468,647
12	206,712	134,603	124,989	466,304
13	205,678	133,930	124,364	463,972
14	204,650	133,260	123,742	461,652
15	203,627	132,594	123,123	459,344
16	202,609	131,931	122,508	457,047
17	201,596	131,272	121,895	454,762
18	200,588	130,615	121,286	452,488
19	199,585	129,962	120,679	450,226
20	198,587	129,312	120,076	447,975

It should be noted that the values in the tables above are based on typical meteorological conditions expected at the Project site. On a month to month basis, actual energy production can vary by as much as 40% due to variations in weather; on a year to year basis, actual energy production can vary by as much as 15% due to variations in weather. Production estimates can be viewed in the following PVSYST report.

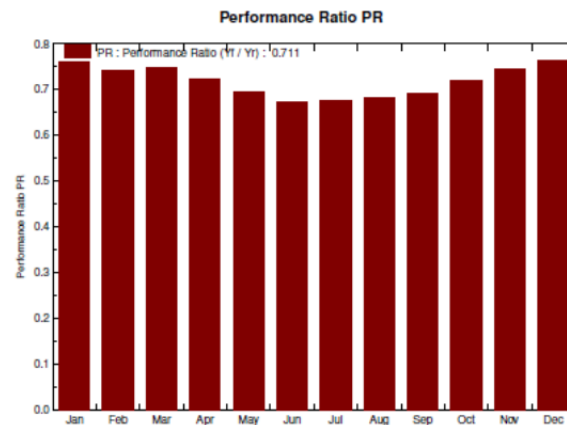
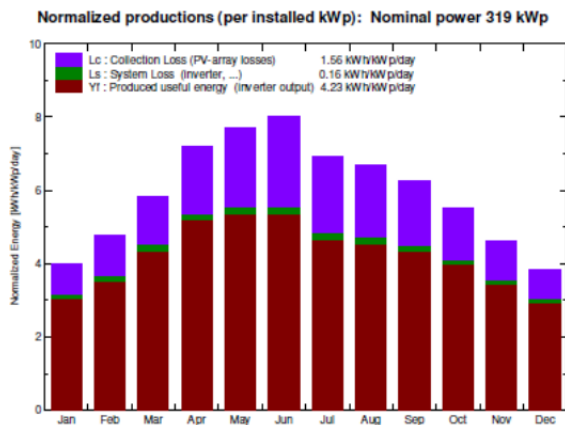
PVSYST V5.52		06/10/11	Page 1/3
Grid-Connected System: Simulation parameters			
Project :	Mammoth San Manuel		
Geographical Site	Tucson International Ap	Country	USA
Situation	Latitude 32.1°N	Longitude	111.0°W
Time defined as	Legal Time Time zone UT-7	Altitude	777 m
	Albedo 0.20		
Meteo data :	Tucson International Ap, NREL TMY3		
Simulation variant :	New simulation variant		
	Simulation date	06/10/11 11h07	
Simulation parameters			
Collector Plane Orientation	Tilt 10°	Azimuth	33°
Horizon	Free Horizon		
Near Shadings	No Shadings		
PV Array Characteristics			
PV module	Si-poly	Model	KD235GX-LPB
	Manufacturer	Kyocera	
Number of PV modules	In series	14 modules	In parallel 97 strings
Total number of PV modules	Nb. modules	1358	Unit Nom. Power 235 Wp
Array global power	Nominal (STC)	319 kWp	At operating cond. 282 kWp (50°C)
Array operating characteristics (50°C)	U mpp	369 V	I mpp 764 A
Total area	Module area	2234 m²	
Inverter			
	Model	PVP 100KW-480	
	Manufacturer	PV Powered	
Characteristics	Operating Voltage	295-500 V	Unit Nom. Power 100 kW AC
Inverter pack	Number of Inverter	3 units	Total Power 300 kW AC
PV Array loss factors			
Thermal Loss factor	Uc (const)	20.0 W/m²K	Uv (wind) 0.0 W/m²K / m/s
=> Nominal Oper. Coll. Temp. (G=800 W/m², Tamb=20°C, Wind=1 m/s.)			NOCT 56 °C
Wiring Ohmic Loss	Global array res.	8.2 mOhm	Loss Fraction 1.5 % at STC
Array Soiling Losses			Loss Fraction 4.1 %
Module Quality Loss			Loss Fraction 1.5 %
Module Mismatch Losses			Loss Fraction 2.0 % at MPP
Incidence effect, ASHRAE parametrization	IAM = 1 - bo (1/cos i - 1)		bo Parameter 0.05
User's needs :	Unlimited load (grid)		

Grid-Connected System: Main results

Project : Mammoth San Manuel
Simulation variant : New simulation variant

Main system parameters	System type	Grid-Connected	
PV Field Orientation	tilt	10°	azimuth 33°
PV modules	Model	KD235GX-LPB	Pnom 235 Wp
PV Array	Nb. of modules	1358	Pnom total 319 kWp
Inverter	Model	PVP 100KW-480	Pnom 100 kW ac
Inverter pack	Nb. of units	3.0	Pnom total 300 kW ac
User's needs	Unlimited load (grid)		

Main simulation results
 System Production **Produced Energy 492743 kWh/year** Specific prod. 1544 kWh/kWp/year
 Performance Ratio PR **71.1 %**



**New simulation variant
Balances and main results**

	GlobHor	T Amb	GlobInc	GlobEff	EArray	E_Grid	EffArrR	EffSysR
	kWh/m ²	°C	kWh/m ²	kWh/m ²	kWh	kWh	%	%
January	104.5	10.56	124.2	118.8	31307	30167	11.28	10.87
February	119.7	13.32	133.2	128.2	32804	31585	11.02	10.61
March	168.3	14.23	180.8	174.8	44682	43043	11.06	10.66
April	210.0	18.79	215.4	209.4	51478	49623	10.70	10.31
May	240.6	24.68	239.3	232.6	54872	52915	10.26	9.90
June	244.2	30.27	239.9	233.4	53249	51405	9.93	9.59
July	216.5	30.65	214.3	208.1	47837	46117	9.99	9.63
August	205.2	29.00	206.9	201.2	46757	45057	10.11	9.75
September	180.5	26.68	188.3	182.9	43148	41571	10.26	9.88
October	154.8	20.95	171.3	165.3	40801	39388	10.66	10.29
November	118.2	14.22	138.2	132.0	34050	32822	11.03	10.63
December	99.3	11.20	119.4	113.8	30102	29049	11.28	10.89
Year	2061.8	20.41	2171.1	2100.4	511085	492743	10.54	10.16

Legends: GlobHor Horizontal global irradiation EArray Effective energy at the output of the array
 T Amb Ambient Temperature E_Grid Energy injected into grid
 GlobInc Global incident in coll. plane EffArrR Effic. Eout array / rough area
 GlobEff Effective Global, corr. for IAM and shadings EffSysR Effic. Eout system / rough area

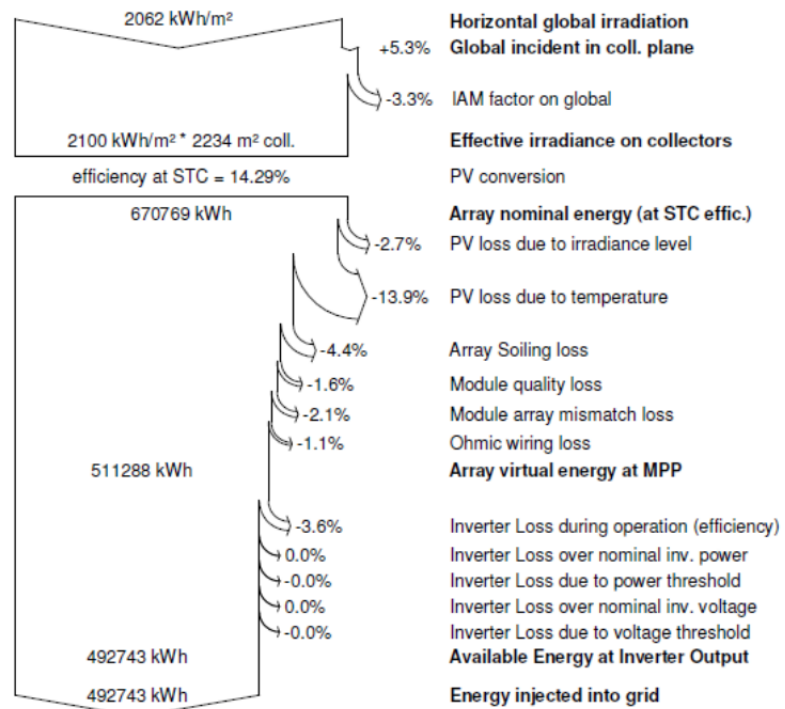
Grid-Connected System: Loss diagram

Project : Mammoth San Manuel

Simulation variant : New simulation variant

Main system parameters	System type	Grid-Connected	
PV Field Orientation	tilt	10°	azimuth 33°
PV modules	Model	KD235GX-LPB	Pnom 235 Wp
PV Array	Nb. of modules	1358	Pnom total 319 kWp
Inverter	Model	PVP 100KW-480	Pnom 100 kW ac
Inverter pack	Nb. of units	3.0	Pnom total 300 kW ac
User's needs	Unlimited load (grid)		

Loss diagram over the whole year





Energy Baseline

The energy or operational cost savings of the energy cost savings measure are computed by comparing the energy baseline before installation or implementation of the energy cost savings measure with the energy consumed and operational costs avoided after installation or implementation of the energy cost savings measure.

For the purposes of this Feasibility Study, the scope of the energy baseline calculation shall be limited to an analysis of the electricity bills for the meter(s) to which the Project will be interconnected under the Agreement. For each of these meters, the prior 12 months of utility bills and the details of the applicable utility rate structure are analyzed to establish a monthly pre-solar consumption and cost model for electricity purchased from the utility. The estimated monthly production of the Project is then subtracted from pre-solar consumption model, and a new post-solar consumption and cost model for electricity purchased from the utility is established, taking into account both rate structure and net metering characteristics. The difference between the pre-solar and post-solar utility cost, divided by the number of solar generated kilowatt hours provided, yields an average utility bill savings per kWh for each solar kWh provided (the “Value of Solar”, or VOS). This VOS is then compared against cost of the solar generated kWh to establish the energy or operation cost savings of the energy cost savings measure. The VOS is escalated annually at a rate annually consistent with historical utility rate escalation in Arizona.

Current Electricity Tariffs and Bills

Each of the meters to which the Project will be interconnected is served by Arizona Public Service (APS) under their E-32 tariff. The Office and Café are on separate meters, under the E-32S tariff, but these will be combined into a single meter which will likely take service under the E-32M tariff, as do the Addition and Auditorium. The E-32M tariff includes seasonally adjusted energy charges which are reverse-ratcheted based on monthly peak demand, monthly demand charges, and a variety of additional surcharges assessed on a kWh basis. The primary components of the rate are shown below:



**RATE SCHEDULE E-32 M
MEDIUM GENERAL SERVICE (101 kW - 400 kW)**

RATES (cont)

Bundled Standard Offer Service (cont)

Demand Charge:

Secondary Service:	\$ 9.597	per kW for the first 100 kW, plus
	\$ 5.105	per kW for all additional kW, or
Primary Service:	\$ 8.905	per kW for the first 100 kW, plus
	\$ 4.412	per kW for all additional kW, or
Transmission Service:	\$ 6.942	per kW for the first 100 kW, plus
	\$ 2.450	per kW for all additional kW

Energy Charge:

May – October Billing Cycles (Summer)	November – April Billing Cycles (Winter)
\$0.10320 per kWh for the first 200 kWh per kW, plus \$0.06034 per kWh for all additional kWh	\$0.08619 per kWh for the first 200 kWh per kW, plus \$0.04334 per kWh for all additional kWh

Additional charges assessed on a kWh basis (back calculated from December 2010 bill) include:

Other Energy Charges (per Dec kWh)	\$/kWh
Environment Benefits Surcharge	\$ 0.004
Federal Environmental Improvement Surcharge	\$ 0.000
System Benefits Charge	\$ 0.002
Power Supply Adjustment	\$ (0.004)
Transmission and Ancillary Services	\$ 0.005
Transmission Cost Adjustment	\$ 0.002
Total	\$ 0.010

Using these rate components and structures and monthly consumption and demand data from utility bills for the 12 month period beginning in September 2010 and ending in August 2011, models for the pre-solar energy baseline (including only energy and kWh-assessed charges) for each of the three meters to which the Project will be interconnected are established as shown in the three sections below.

Office/Café

In order to calculate the energy baseline for the combined Office and Café meter, it is assumed that the new rate will be E-32M, and that the monthly demand will be equal to 80% of the sum of the demand from each of the current individual meters (i.e., that peak demand is not entirely coincident but is highly correlated).



The resulting pre-solar energy baseline is shown in the table below.

Pre-Solar Energy Baseline - Office/Café (APS E-32M)								
	A	B	C	D	E	F	G	(B x G) + (C x E) + (D x F)
Month	Demand (kW)	Usage (kWh)	Usage below 200 kWh/kW (kWh)	Usage above 200 kWh/kW (kWh)	Rate below 200 kWh/kW (\$/kWh)	Rate above 200 kWh/kW (\$/kWh)	Non-energy kWh-Assessed Charges (\$/kWh)	Total
Jan	83.2	18,840	16,640	2,200	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 1,713.56
Feb	84	20,640	16,800	3,840	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 1,816.01
Mar	93.6	18,560	18,560	-	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 1,780.96
Apr	90.4	22,920	18,080	4,840	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 1,991.94
May	81.6	20,400	16,320	4,080	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 2,129.66
Jun	64	18,360	12,800	5,560	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 1,835.77
Jul	98.4	21,760	19,680	2,080	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 2,369.01
Aug	104	29,200	20,800	8,400	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 2,938.61
Sep	102.4	25,680	20,480	5,200	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 2,678.12
Oct	92.8	21,600	18,560	3,040	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 2,309.79
Nov	80.8	18,120	16,160	1,960	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 1,654.76
Dec	81.6	15,400	15,400	-	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 1,477.74

Total annual pre-solar energy and kWh-assessed charges: \$ 24,695.95

Addition

The Addition meter is currently and will remain on the E-32M tariff. The pre-solar energy baseline for that meter is shown in the table below.

Pre-Solar Energy Baseline - Addition (APS E-32M)								
	A	B	C	D	E	F	G	(B x G) + (C x E) + (D x F)
Month	Demand (kW)	Usage (kWh)	Usage below 200 kWh/kW (kWh)	Usage above 200 kWh/kW (kWh)	Rate below 200 kWh/kW (\$/kWh)	Rate above 200 kWh/kW (\$/kWh)	Non-energy kWh-Assessed Charges (\$/kWh)	Total
Jan	77	21,120	15,400	5,720	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 1,781.51
Feb	82	21,920	16,400	5,520	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 1,866.85
Mar	86	19,200	17,200	2,000	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 1,756.68
Apr	107	24,960	21,400	3,560	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 2,242.54
May	90	17,280	17,280	-	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 1,952.07
Jun	51	14,560	10,200	4,360	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 1,457.93
Jul	123	18,240	18,240	-	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 2,060.52
Aug	133	26,880	26,600	280	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 3,024.55
Sep	125	23,360	23,360	-	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 2,638.91
Oct	86	17,600	17,200	400	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 1,971.08
Nov	75	19,040	15,000	4,040	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 1,653.91
Dec	80	16,800	16,000	800	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 1,577.80

Total annual pre-solar energy and kWh-assessed charges: \$ 23,984.34

Auditorium

The Auditorium meter is currently and will remain on the E-32M tariff. The pre-solar energy baseline for that meter is shown in the table below.

Pre-Solar Energy Baseline - Auditorium (APS E-32M)								
	A	B	C	D	E	F	G	(B x G) + (C x E) + (D x F)
Month	Demand (kW)	Usage (kWh)	Usage below 200 kWh/kW (kWh)	Usage above 200 kWh/kW (kWh)	Rate below 200 kWh/kW (\$/kWh)	Rate above 200 kWh/kW (\$/kWh)	Non-energy kWh-Assessed Charges (\$/kWh)	Total
Jan	26	7,200	5,200	2,000	\$ 0.08619	\$ 0.04334	\$ 0.0098	\$ 605.19
Feb	34	7,560	6,800	760	\$ 0.08619	\$ 0.04334	\$ 0.0098	\$ 692.87
Mar	114	9,360	9,360	-	\$ 0.08619	\$ 0.04334	\$ 0.0098	\$ 898.16
Apr	103	15,120	15,120	-	\$ 0.08619	\$ 0.04334	\$ 0.0098	\$ 1,450.87
May	118	17,040	17,040	-	\$ 0.10320	\$ 0.06034	\$ 0.0098	\$ 1,924.96
Jun	107	15,720	15,720	-	\$ 0.10320	\$ 0.06034	\$ 0.0098	\$ 1,775.84
Jul	148	18,240	18,240	-	\$ 0.10320	\$ 0.06034	\$ 0.0098	\$ 2,060.52
Aug	136	16,680	16,680	-	\$ 0.10320	\$ 0.06034	\$ 0.0098	\$ 1,884.29
Sep	125	16,320	16,320	-	\$ 0.10320	\$ 0.06034	\$ 0.0098	\$ 1,843.62
Oct	64	8,760	8,760	-	\$ 0.10320	\$ 0.06034	\$ 0.0098	\$ 989.59
Nov	37	7,680	7,400	280	\$ 0.08619	\$ 0.04334	\$ 0.0098	\$ 724.95
Dec	34	7,200	6,800	400	\$ 0.08619	\$ 0.04334	\$ 0.0098	\$ 673.75

Total annual pre-solar energy and kWh-assessed charges: \$ **15,524.62**

Estimated Electricity Bills after Solar

To establish the post-solar energy baseline, the predicted energy production for the Project must be superimposed on the pre-solar energy baseline, subtracting the amounts generated in each month from the amount purchased by the utility. A 'new utility bill' is calculated using the tariff structure and revised consumption. The difference between the post-solar utility cost and the pre-solar utility cost, divided by the amount of solar energy production, is the Value of Solar (VOS), or baseline utility cost (the value per kWh which is compared to the PPA rate to determine project benefits).

A simplifying and conservative assumption is that the solar production will not reduce the monthly peak demand at each meter. In reality, there is likely to be some demand reduction due to the installation of the Project, which will yield a reduction in monthly demand charges. However, this benefit is difficult to quantify and is overlooked in this Feasibility Study.

Each meter will also qualify for the APS net metering tariff, which overlays the standard tariff and includes provisions for buy-back of excess generation. The mechanics of the net metering tariff are such that there may be a small amount of electricity which will be sold at a loss to the utility at the end of the calendar year. This is factored into the post-solar energy baseline calculation.



**RATE SCHEDULE EPR-6 (NET METERING)
CLASSIFIED SERVICE
RATES FOR RENEWABLE RESOURCE FACILITIES
FOR PARTIAL REQUIREMENTS**

BILLING (cont)

D. For the last billing period of each calendar year or for the last billing period at the time the customer discontinues taking service under this rate schedule;

The Company shall issue a billing credit to the customer for any remaining Excess Generation balance. In the event the customer's electric service is terminated, after applying a billing credit for any Excess Generation up to the amount the customers owes the Company, the Company shall issue a check for the remaining value of the Excess Generation balance. The payment or credit will be determined at the Company's annual avoided costs (Annual Purchase Rate), which are updated annually and as specified below:

Annual Purchase Rates (¢/kWh)	Non-Firm		Firm			Total
	On-peak	Off-peak	Total	On-peak	Off-peak	
	6.590	5.963	6.187	7.714	6.172	6.722

The post-solar energy baseline for each of the three meters to which the Project will be interconnected are established as shown in the three sections below.

Office/Café

The post-solar energy baseline for the Office/Café meter is shown in the table below.

Post-Solar Energy Baseline - Office/Café (APS E-32M)										
	A	B	C	D	E	F	G	H	I	(E x G) + (F x H) + ((E + F) x I)
Month	Demand (kW)	Usage (kWh)	Solar Production (kWh)	Net Meter Carry-Over from Prior Month (kWh)	Utility usage below 200 kWh/kW (kWh)	Utility usage above 200 kWh/kW (kWh)	Utility Rate below 200 kWh/kW (\$/kWh)	Utility Rate above 200 kWh/kW (\$/kWh)	Non-energy kWh Assessed Charges (\$/kWh)	Total
Jan	83.2	18,840	16,559	-	2,281	-	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 218.91
Feb	84	20,640	15,761	-	4,879	-	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 468.17
Mar	93.6	18,560	20,315	-	-	-	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ -
Apr	90.4	22,920	20,627	1,755	538	-	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 51.58
May	81.6	20,400	20,156	-	244	-	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 27.54
Jun	64	18,360	18,962	-	-	-	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ -
Jul	98.4	21,760	17,540	602	3,618	-	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 408.72
Aug	104	29,200	18,703	-	10,497	-	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 1,185.78
Sep	102.4	25,680	18,844	-	6,836	-	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 772.19
Oct	92.8	21,600	18,813	-	2,787	-	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 314.84
Nov	80.8	18,120	16,663	-	1,457	-	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 139.78
Dec	81.6	15,400	15,485	-	-	-	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ -

Year end net meter balance (kWh): 85

Total annual post-solar energy and kWh-assessed charges: \$ 3,587.50

Year end net meter credit: \$ (5.27)

Total Post-solar utility bill: \$ 3,582.23

Addition

The post-solar energy baseline for the Addition meter is shown in the table below.

Post-Solar Energy Baseline - Office/Café (APS E-32M)											
	A	B	C	D	E	F	G	H	I	(E x G) + (F x H) + ((E + F) x I)	
Month	Demand (kW)	Usage (kWh)	Solar Production (kWh)	Net Meter Carry-Over from Prior Month (kWh)	Utility usage below 200 kWh/kW (kWh)	Utility usage above 200 kWh/kW (kWh)	Utility Rate below 200 kWh/kW (\$/kWh)	Utility Rate above 200 kWh/kW (\$/kWh)	Non-energy kWh-Assessed Charges (\$/kWh)	Total	
Jan	77	21,120	10,782	-	10,338	-	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 991.96	
Feb	82	21,920	10,263	-	11,657	-	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 1,118.57	
Mar	86	19,200	13,228	-	5,972	-	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 573.02	
Apr	107	24,960	13,432	-	11,528	-	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 1,106.21	
May	90	17,280	13,125	-	4,155	-	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 469.38	
Jun	51	14,560	12,347	-	2,213	-	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 249.98	
Jul	123	18,240	11,422	-	6,818	-	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 770.26	
Aug	133	26,880	12,179	-	14,701	-	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 1,660.74	
Sep	125	23,360	12,271	-	11,089	-	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 1,252.71	
Oct	86	17,600	12,250	-	5,350	-	\$ 0.10320	\$ 0.06034	\$ 0.010	\$ 604.34	
Nov	75	19,040	10,851	-	8,189	-	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 785.84	
Dec	80	16,800	10,083	-	6,717	-	\$ 0.08619	\$ 0.04334	\$ 0.010	\$ 644.51	
Year end net meter balance (kWh):				-	Total annual post-solar energy and kWh-assessed charges:				\$	10,227.51	
					Year end net meter credit:				\$	-	
					Total Post-solar utility bill:				\$	10,227.51	

Auditorium

The post-solar energy baseline for the Auditorium meter is shown in the table below.

Post-Solar Energy Baseline - Office/Café (APS E-32M)											
	A	B	C	D	E	F	G	H	I	(E x G) + (F x H) + ((E + F) x I)	
Month	Demand (kW)	Usage (kWh)	Solar Production (kWh)	Net Meter Carry-Over from Prior Month (kWh)	Utility usage below 200 kWh/kW (kWh)	Utility usage above 200 kWh/kW (kWh)	Utility Rate below 200 kWh/kW (\$/kWh)	Utility Rate above 200 kWh/kW (\$/kWh)	Non-energy kWh-Assessed Charges (\$/kWh)	Total	
Jan	26	7,200	10,012	-	-	-	\$ 0.08619	\$ 0.04334	\$ 0.0098	\$ -	
Feb	34	7,560	9,530	2,812	-	-	\$ 0.08619	\$ 0.04334	\$ 0.0098	\$ -	
Mar	114	9,360	12,283	4,782	-	-	\$ 0.08619	\$ 0.04334	\$ 0.0098	\$ -	
Apr	103	15,120	12,472	7,706	-	-	\$ 0.08619	\$ 0.04334	\$ 0.0098	\$ -	
May	118	17,040	12,187	5,058	-	-	\$ 0.10320	\$ 0.06034	\$ 0.0098	\$ -	
Jun	107	15,720	11,465	206	4,049	-	\$ 0.10320	\$ 0.06034	\$ 0.0098	\$ 457.43	
Jul	148	18,240	10,606	-	7,634	-	\$ 0.10320	\$ 0.06034	\$ 0.0098	\$ 862.42	
Aug	136	16,680	11,309	-	5,371	-	\$ 0.10320	\$ 0.06034	\$ 0.0098	\$ 606.75	
Sep	125	16,320	11,394	-	4,926	-	\$ 0.10320	\$ 0.06034	\$ 0.0098	\$ 556.44	
Oct	64	8,760	11,375	-	-	-	\$ 0.10320	\$ 0.06034	\$ 0.0098	\$ -	
Nov	37	7,680	10,075	2,615	-	-	\$ 0.08619	\$ 0.04334	\$ 0.0098	\$ -	
Dec	34	7,200	9,363	5,011	-	-	\$ 0.08619	\$ 0.04334	\$ 0.0098	\$ -	
Year end net meter balance (kWh):				7,174	Total annual post-solar energy and kWh-assessed charges:				\$	2,483.03	
					Year end net meter credit:				\$	(443.85)	
					Total Post-solar utility bill:				\$	2,039.18	

Value of Solar (Baseline Utility Cost) Summary

The table below summarizes the Value of Solar calculation results for each meter.

	A	B	C	D = (A - B)/C
	Pre-Solar utility bill, \$	Post-Solar utility bill, \$	Solar kWh delivered, kWh	Value of Solar (Baseline Utility Cost), \$/kWh
Office/Café	\$ 24,695.95	\$ 3,582.23	218,430	\$ 0.097
Addition	\$ 23,984.34	\$ 10,227.51	142,233	\$ 0.097
Auditorium	\$ 15,524.62	\$ 2,039.18	132,074	\$ 0.102
Total/Ave	\$ 64,204.91	\$ 15,848.92	492,737	\$ 0.098

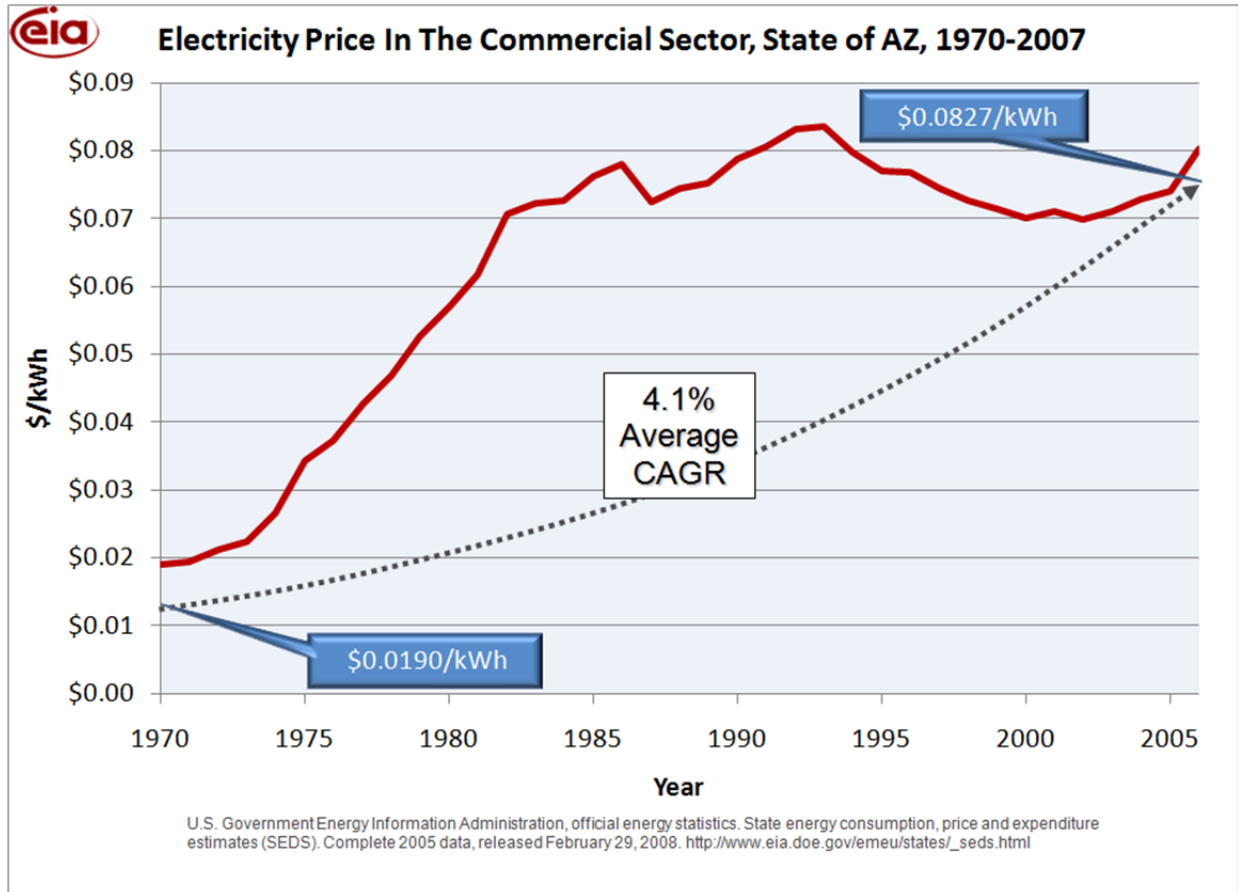


Due to the mechanics of net metering in Arizona, 100% of the solar kWh delivered does not go to offset the load, even though the net production is less than the net consumption on an annual basis. The solar fraction, or percentage of load served by solar, is shown in the table below.

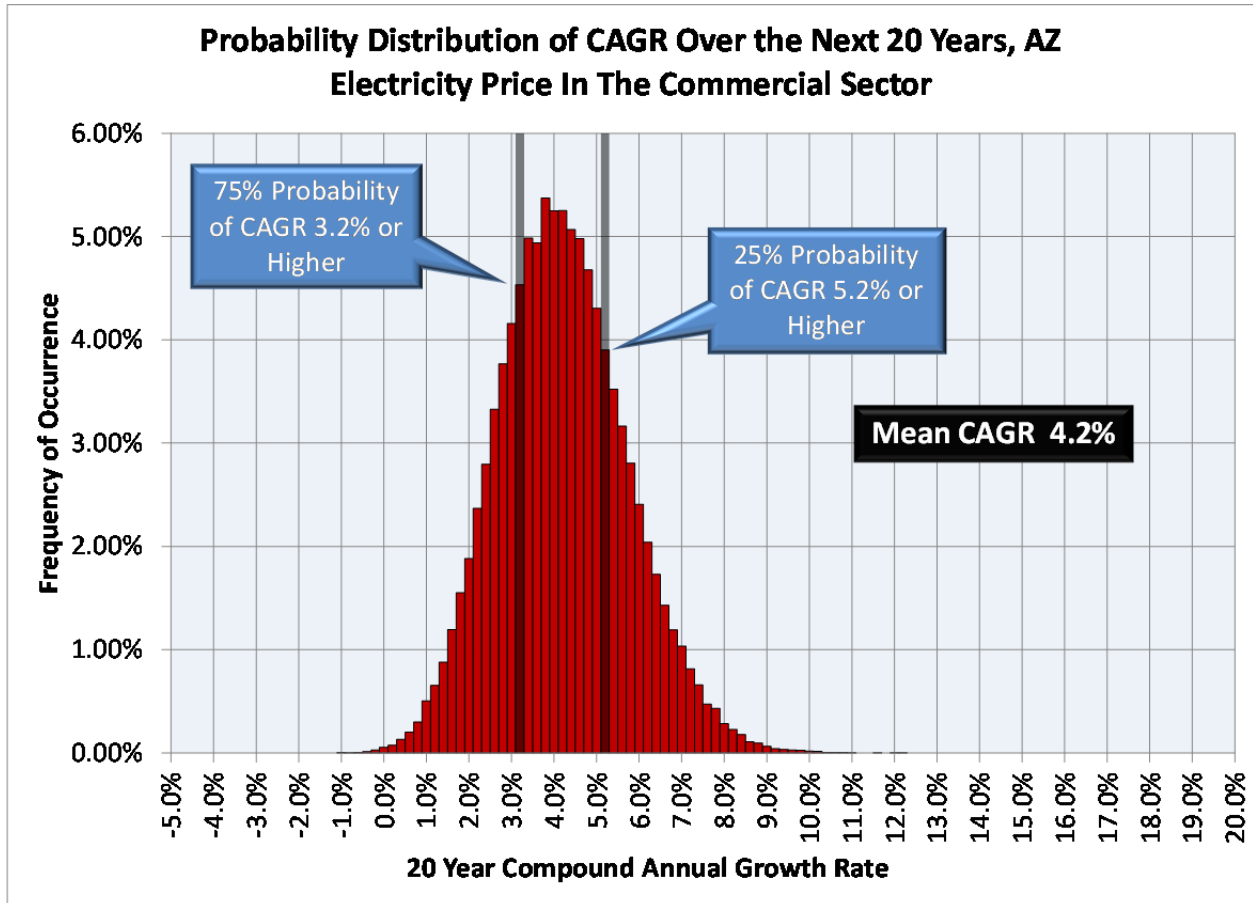
	Pre-Solar utility consumption, kWh	Post-Solar utility consumption, kWh	Percentage of load served by solar (solar fraction), %
Office/Café	251,480	33,135	87%
Addition	240,960	98,727	59%
Auditorium	146,880	21,980	85%
Total/Ave	639,320	153,842	76%

Utility Rate Escalation

Future utility rate escalation must be assessed in order to estimate the energy and operation costs savings over the life of the energy cost savings measure (the Term of the Agreement). The baseline escalation rate is determined through the use of advanced statistical risk assessment methods commonly used in the financial world to determine the probability of future average annual rate increases, based on historical rate data from 1970 through 2007. The graph below shows the historical electric rates for this time period.



A statistical Monte Carlo analysis performed on this historical data set concludes that it is most probable that electric rates will increase over the next 20 years at a Compound Annual Growth Rate (CAGR) of 4.2%, with a distribution of other possible 20-year CAGRs around this most probable value approximating a normal bell curve, as shown below. The same graph shows a 75% probability that utility rates will escalate by at least 3.2% over the same period. *For the purpose of the Energy Cost Savings Report, this more conservative value (3.2%) will be applied each year as the mutually agreed upon annual utility rate escalator, regardless of actual escalation in utility rates.*



20 Year Energy Cost Baseline

The table below, based upon the preceding analysis, indicates the kWh energy cost baseline which will be used annually to evaluate the energy and operational cost savings of the energy cost savings measure.

Contract Year	Office/Café, VOS (Baseline Utility Cost), \$/kWh	Addition, VOS (Baseline Utility Cost), \$/kWh	Auditorium, VOS (Baseline Utility Cost), \$/kWh
1	\$ 0.097	\$ 0.097	\$ 0.102
2	\$ 0.100	\$ 0.100	\$ 0.105
3	\$ 0.103	\$ 0.103	\$ 0.109
4	\$ 0.106	\$ 0.106	\$ 0.112
5	\$ 0.110	\$ 0.110	\$ 0.116
6	\$ 0.113	\$ 0.113	\$ 0.120
7	\$ 0.117	\$ 0.117	\$ 0.123
8	\$ 0.121	\$ 0.121	\$ 0.127
9	\$ 0.124	\$ 0.124	\$ 0.131

10	\$	0.128	\$	0.128	\$	0.136
11	\$	0.132	\$	0.133	\$	0.140
12	\$	0.137	\$	0.137	\$	0.144
13	\$	0.141	\$	0.141	\$	0.149
14	\$	0.146	\$	0.146	\$	0.154
15	\$	0.150	\$	0.150	\$	0.159
16	\$	0.155	\$	0.155	\$	0.164
17	\$	0.160	\$	0.160	\$	0.169
18	\$	0.165	\$	0.165	\$	0.174
19	\$	0.170	\$	0.171	\$	0.180
20	\$	0.176	\$	0.176	\$	0.186

Project Benefits

Project benefits (energy and operational cost savings) are estimated by subtracting the PPA rate from the baseline utility cost for each meter and multiplying the result by the expected solar production for each meter. The only benefits calculated are those associated with energy usage (i.e., demand reduction, though likely, is not modeled in the Baseline Utility Cost calculation). The tables below shows the resulting savings estimates by meter, and in aggregate. Note that the energy and operational cost savings shown do not represent guaranteed savings amounts, but expected savings for a typical year.

Office/Café					
Contract Year	VOS (Baseline Utility Cost), \$/kWh	PPA Rate, \$/kWh	Energy and Operational Cost Savings, \$/kWh	Solar kWh per Year	Energy and Operational Cost Savings, \$ per Year
1	\$ 0.097	\$ 0.076	\$ 0.021	218,430	\$ 4,513
2	\$ 0.100	\$ 0.078	\$ 0.021	217,338	\$ 4,667
3	\$ 0.103	\$ 0.081	\$ 0.022	216,251	\$ 4,826
4	\$ 0.106	\$ 0.083	\$ 0.023	215,170	\$ 4,991
5	\$ 0.110	\$ 0.086	\$ 0.024	214,094	\$ 5,160
6	\$ 0.113	\$ 0.088	\$ 0.025	213,023	\$ 5,335
7	\$ 0.117	\$ 0.091	\$ 0.026	211,958	\$ 5,516
8	\$ 0.121	\$ 0.093	\$ 0.027	210,898	\$ 5,702
9	\$ 0.124	\$ 0.096	\$ 0.028	209,844	\$ 5,894
10	\$ 0.128	\$ 0.099	\$ 0.029	208,795	\$ 6,093
11	\$ 0.132	\$ 0.102	\$ 0.030	207,751	\$ 6,297
12	\$ 0.137	\$ 0.105	\$ 0.031	206,712	\$ 6,509
13	\$ 0.141	\$ 0.108	\$ 0.033	205,678	\$ 6,727
14	\$ 0.146	\$ 0.112	\$ 0.034	204,650	\$ 6,951
15	\$ 0.150	\$ 0.115	\$ 0.035	203,627	\$ 7,183



16	\$	0.155	\$	0.118	\$	0.037	202,609	\$	7,423
17	\$	0.160	\$	0.122	\$	0.038	201,596	\$	7,670
18	\$	0.165	\$	0.126	\$	0.040	200,588	\$	7,925
19	\$	0.170	\$	0.129	\$	0.041	199,585	\$	8,187
20	\$	0.176	\$	0.133	\$	0.043	198,587	\$	8,459

Addition					
Contract Year	VOS (Baseline Utility Cost), \$/kWh	PPA Rate, \$/kWh	Energy and Operational Cost Savings, \$/Solar kWh	Solar kWh per Year	Energy and Operational Cost Savings, \$ per Year
1	\$ 0.097	\$ 0.076	\$ 0.021	142,233	\$ 2,947
2	\$ 0.100	\$ 0.078	\$ 0.022	141,522	\$ 3,048
3	\$ 0.103	\$ 0.081	\$ 0.022	140,815	\$ 3,152
4	\$ 0.106	\$ 0.083	\$ 0.023	140,110	\$ 3,259
5	\$ 0.110	\$ 0.086	\$ 0.024	139,410	\$ 3,369
6	\$ 0.113	\$ 0.088	\$ 0.025	138,713	\$ 3,484
7	\$ 0.117	\$ 0.091	\$ 0.026	138,019	\$ 3,601
8	\$ 0.121	\$ 0.093	\$ 0.027	137,329	\$ 3,723
9	\$ 0.124	\$ 0.096	\$ 0.028	136,643	\$ 3,848
10	\$ 0.128	\$ 0.099	\$ 0.029	135,959	\$ 3,978
11	\$ 0.133	\$ 0.102	\$ 0.030	135,280	\$ 4,111
12	\$ 0.137	\$ 0.105	\$ 0.032	134,603	\$ 4,249
13	\$ 0.141	\$ 0.108	\$ 0.033	133,930	\$ 4,392
14	\$ 0.146	\$ 0.112	\$ 0.034	133,260	\$ 4,538
15	\$ 0.150	\$ 0.115	\$ 0.035	132,594	\$ 4,690
16	\$ 0.155	\$ 0.118	\$ 0.037	131,931	\$ 4,846
17	\$ 0.160	\$ 0.122	\$ 0.038	131,272	\$ 5,007
18	\$ 0.165	\$ 0.126	\$ 0.040	130,615	\$ 5,173
19	\$ 0.171	\$ 0.129	\$ 0.041	129,962	\$ 5,345
20	\$ 0.176	\$ 0.133	\$ 0.043	129,312	\$ 5,522

Auditorium					
Contract Year	VOS (Baseline Utility Cost), \$/kWh	PPA Rate, \$/kWh	Energy and Operational Cost Savings, \$/Solar kWh	Solar kWh per Year	Energy and Operational Cost Savings, \$ per Year
1	\$ 0.102	\$ 0.076	\$ 0.026	132,074	\$ 3,448
2	\$ 0.105	\$ 0.078	\$ 0.027	131,413	\$ 3,560



3	\$	0.109	\$	0.081	\$	0.028	130,756	\$	3,676
4	\$	0.112	\$	0.083	\$	0.029	130,103	\$	3,796
5	\$	0.116	\$	0.086	\$	0.030	129,452	\$	3,919
6	\$	0.120	\$	0.088	\$	0.031	128,805	\$	4,047
7	\$	0.123	\$	0.091	\$	0.033	128,161	\$	4,178
8	\$	0.127	\$	0.093	\$	0.034	127,520	\$	4,313
9	\$	0.131	\$	0.096	\$	0.035	126,882	\$	4,453
10	\$	0.136	\$	0.099	\$	0.036	126,248	\$	4,596
11	\$	0.140	\$	0.102	\$	0.038	125,617	\$	4,745
12	\$	0.144	\$	0.105	\$	0.039	124,989	\$	4,898
13	\$	0.149	\$	0.108	\$	0.041	124,364	\$	5,055
14	\$	0.154	\$	0.112	\$	0.042	123,742	\$	5,218
15	\$	0.159	\$	0.115	\$	0.044	123,123	\$	5,385
16	\$	0.164	\$	0.118	\$	0.045	122,508	\$	5,558
17	\$	0.169	\$	0.122	\$	0.047	121,895	\$	5,736
18	\$	0.174	\$	0.126	\$	0.049	121,286	\$	5,920
19	\$	0.180	\$	0.129	\$	0.051	120,679	\$	6,109
20	\$	0.186	\$	0.133	\$	0.052	120,076	\$	6,304

Facility in Aggregate									
Contract Year	Weighted Average VOS (Baseline Utility Cost), \$/kWh	PPA Rate, \$/kWh	Energy and Operational Cost Savings, \$/Solar kWh	Solar kWh per Year	Energy and Operational Cost Savings, \$ per Year				
1	\$	0.098	\$	0.076	\$	0.022	492,737	\$	10,908
2	\$	0.101	\$	0.078	\$	0.023	490,273	\$	11,275
3	\$	0.105	\$	0.081	\$	0.024	487,822	\$	11,654
4	\$	0.108	\$	0.083	\$	0.025	485,383	\$	12,045
5	\$	0.111	\$	0.086	\$	0.026	482,956	\$	12,449
6	\$	0.115	\$	0.088	\$	0.027	480,541	\$	12,865
7	\$	0.119	\$	0.091	\$	0.028	478,138	\$	13,295
8	\$	0.122	\$	0.093	\$	0.029	475,747	\$	13,738
9	\$	0.126	\$	0.096	\$	0.030	473,369	\$	14,195
10	\$	0.130	\$	0.099	\$	0.031	471,002	\$	14,667
11	\$	0.134	\$	0.102	\$	0.032	468,647	\$	15,153
12	\$	0.139	\$	0.105	\$	0.034	466,304	\$	15,655
13	\$	0.143	\$	0.108	\$	0.035	463,972	\$	16,173
14	\$	0.148	\$	0.112	\$	0.036	461,652	\$	16,707
15	\$	0.153	\$	0.115	\$	0.038	459,344	\$	17,258



16	\$	0.157	\$	0.118	\$	0.039	457,047	\$	17,827
17	\$	0.162	\$	0.122	\$	0.040	454,762	\$	18,413
18	\$	0.168	\$	0.126	\$	0.042	452,488	\$	19,017
19	\$	0.173	\$	0.129	\$	0.044	450,226	\$	19,641
20	\$	0.179	\$	0.133	\$	0.045	447,975	\$	20,284

The final table showing the Project in Aggregate benefits above indicates an estimated savings of about \$11,000 in year 1, growing to \$20,000 in year 20 of the Agreement. The cumulative nominal estimated savings is approximately \$300,000.



Measurement and Verification Report

Actual kWh production of the Project will be recorded utilizing utility revenue grade metering as described more fully in the Agreement. In addition, Provider will maintain a data acquisition system to monitor real time performance of the Project as well as weather parameters. Actual metered Project output will be utilized to perform Energy Cost Savings Reports, and Measurement and Verification Reports, as described in this section and the section below.

In addition, Host will provide to Provider utility bills for each Project interconnected meter pursuant to the Agreement in the first three Operations Years. Electric utility bills will be analyzed to compare actual utility consumption and demand with those established in the energy baseline calculations.

The Measurement and Verification Report will be provided according to the schedule described in the Agreement in the format shown below. One report will be provided for each meter to which the Project is interconnected.

Measurement and Verification Report

Report Date: _____
 Contract Year: _____
 Facility Meter: _____

	A	B	C = B - A	D	E = B + D	F = E - A	G	H	I = H - J
	Pre-Solar Utility Use, kWh	Report Year Utility Use, kWh	Report Year Change in Utility Use, kWh	Report Year Solar Energy Delivered, kWh	Report Year Total Energy Use, kWh	Report Year Change in Total Use, kWh	Pre-Solar Utility Demand, kW	Report Year Utility Demand, kW	Report Year Change in Utility Demand, kW
January									
February									
March									
April									
May									
June									
July									
August									
September									
October									
November									
December									
Total									



Energy Cost Savings Report

The Energy Cost Savings Report will be provided according to the schedule described in the Agreement in the format shown below.

Energy Cost Savings Report

Report Date: _____

Contract Year: _____

	A	B	C = A - B	D	E = C x D
	Utility Cost (Value of Solar, VOS), \$/kWh	PPA Rate, \$/kWh	Energy and Operational Cost Savings, \$/Solar kWh	Actual Solar Delivered, kWh	Energy and Operational Cost Savings, \$
Office/Café					
Addition					
Auditorium					
Total:					
Prior Year Cumulative Energy and Operational Cost Savings Carry Over:					
Current Year Cumulative Energy and Operational Cost Savings:					



Reference State Statute

15-213.01. Procurement practices; guaranteed energy cost savings contracts; definitions

(L09, Ch. 101, sec. 1. Eff. until 7/1/13)

- A. Notwithstanding section 15-213, subsection A, a school district may contract for the procurement of a guaranteed energy cost savings contract with a qualified provider through a competitive sealed proposal process as provided by the procurement practices adopted by the state board of education.
- B. A school district may enter into a guaranteed energy cost savings contract with a qualified provider if it determines that the amount it would spend on the energy cost savings measures recommended in the proposal would not exceed the amount to be saved in energy and operational costs over the expected life of the energy cost savings measures implemented or within twenty-five years, whichever is shorter, after the date installation or implementation is complete, if the recommendations in the proposal are followed. The school district shall retain the cost savings achieved by a guaranteed energy cost saving contract, and these cost savings may be used to pay for the contract and project implementation. A school district shall not use excess utilities monies for the contract or for project implementation.
- C. The school district shall use objective criteria in selecting the qualified provider, including the cost of the contract, the energy and operational cost savings, the net projected energy savings, the quality of the technical approach, the quality of the project management plan, the financial solvency of the qualified provider and the experience of the qualified provider with projects of similar size and scope. The school district shall set forth each criterion with its respective numerical weighting in the request for proposal.
- D. In selecting a contractor to perform any construction work related to performing the guaranteed energy cost savings contract, the qualified provider may develop and use a prequalification process for contractors. These prequalifications may require the contractor to demonstrate that the contractor is adequately bonded to perform the work and that the contractor has not failed to perform on a prior job.
- E. A study shall be performed by the selected qualified provider in order to establish the exact scope of the guaranteed energy cost savings contract, the fixed cost savings guarantee amount and the methodology for determining actual savings. This report shall be reviewed and approved by the school district before the actual installation of any equipment. The qualified provider shall transmit a copy of the approved study to the school facilities board and the department of commerce energy office.
- F. The guaranteed energy cost savings contract shall require that in determining whether the projected energy savings calculations have been met, the energy or operational cost savings shall be computed by comparing the energy baseline before installation or implementation of the energy cost savings measures with the energy consumed and operational costs avoided after installation or implementation of the energy cost savings measures. The qualified provider

and the school district may agree to make modifications to the energy baseline only for any of the following:

1. Changes in utility rates.
 2. Changes in the number of days in the utility billing cycle.
 3. Changes in the square footage of the Project.
 4. Changes in the operational schedule of the Project.
 5. Changes in facility temperature.
 6. Significant changes in the weather.
 7. Significant changes in the amount of equipment or lighting utilized in the Project.
 8. Significant changes in the nature or intensity of energy use such as the change of classroom space to laboratory space.
- G. The information to develop the energy baseline shall be derived from actual energy measurements or shall be calculated from energy measurements at the Project where energy cost savings measures are to be installed or implemented. The measurements shall be taken in the year preceding the installation or implementation of energy cost savings measures.
- H. When submitting a proposal for the installation of equipment, the qualified provider shall include information on the projected energy savings associated with each proposed energy cost savings measure.
- I. A school district, or two or more school districts, may enter into an installment payment contract or lease-purchase agreement with a qualified provider for the purchase and installation or implementation of energy cost savings measures. The guaranteed energy cost savings contract may provide for payments over a period of not more than the expected life of the energy cost savings measures implemented or twenty-five years, whichever is shorter. The contract shall provide that all payments, except obligations on termination of the contract before its expiration, shall be made over time.
- J. The guaranteed energy cost savings contract shall include a written guarantee of the qualified provider that either the energy or operational costs savings, or both, will meet or exceed the costs of the energy cost savings measures over the expected life of the energy cost savings measures implemented or within twenty-five years, whichever is shorter. The qualified provider shall:
1. For the first three years of savings, prepare a measurement and verification report on an annual basis in addition to an annual reconciliation of savings.
 2. Reimburse the school district for any shortfall of guaranteed energy cost savings on an annual basis.
- K. The school district may obtain any required financing as part of the original competitive sealed proposal process from the qualified provider or a third-party financing institution.
- L. A qualified provider that is awarded the contract shall give a sufficient bond to the school district for its faithful performance of the equipment installment.
- M. The qualified provider is required to make public information in the subcontractor's bids only if the qualified provider is awarded the guaranteed energy cost savings contract by the school district.

- N. For all projects carried out under this section, the district shall report to the department of commerce energy office and the school facilities board:
1. The name of the project.
 2. The qualified provider.
 3. The total cost of the project.
 4. The expected energy and cost savings.
- O. For all projects carried out under this section, the district shall report to the school facilities board, by October 15 each year, the actual energy and cost savings.
- P. This section does not apply to the construction of new buildings.
- Q. A school district may utilize a simplified energy performance contract for projects less than five hundred thousand dollars. Simplified energy performance contracts are not required to include an energy savings guarantee and shall comply with all requirements in this section except for the requirements that are specifically related to the energy savings guarantee and the measurement and verification of the guaranteed savings.
- R. For the purposes of this section:
1. "Construction" means the process of building, altering, repairing, improving or demolishing any school district structure or building, or other public improvements of any kind to any school district real property. Construction does not include the routine operation, routine repair or routine maintenance of existing structures, buildings or real property.
 2. "Energy baseline" means a calculation of the amount of energy used in an existing facility before the installation or implementation of the energy cost savings measures.
 3. "Energy cost savings measure" means a training program or facility alteration designed to reduce energy consumption or operating costs and may include one or more of the following, and any related meters or other measuring devices:
 - (a) Insulating the building structure or systems in the building.
 - (b) Storm windows or doors, caulking or weather stripping, multiglazed windows or door systems, additional glazing, reductions in glass area, or other window and door system modifications that reduce energy consumption.
 - (c) Automated or computerized energy control systems.
 - (d) Heating, ventilating or air conditioning system modifications or replacements.
 - (e) Replacing or modifying lighting fixtures to increase the energy efficiency of the lighting system without increasing the overall illumination of a facility unless an increase in illumination is necessary to conform to the applicable state or local building code for the lighting system after the proposed modifications are made.
 - (f) Indoor air quality improvements to increase air quality that conform to the applicable state or local building code requirements.
 - (g) Energy recovery systems.
 - (h) Installing a new or retrofitting an existing day lighting system.

- (i) Any life safety measures that provide long-term operating cost reductions and that comply with state and local codes.
 - (j) Implementing operation programs through education, training and software that reduce the operating costs.
 - (k) Procurement of low-cost utility supplies of all types, including electricity, natural gas, propane and water.
 - (l) Devices that reduce water consumption and water costs or that reduce sewer charges.
 - (m) Rainwater harvesting systems.
 - (n) Combined heat and power systems.
 - (o) Renewable and alternative energy projects and renewable energy power service agreements.
 - (p) Self-generation systems.
 - (q) Any additional building systems and infrastructure that produce energy, or that provide utility or operational cost savings not specifically mentioned in this paragraph, if the improvements meet the life cycle cost requirement and enhance building system performance or occupant comfort and safety.
4. "Guaranteed energy cost savings contract" means a contract for implementing one or more energy cost savings measures.
 5. "Life cycle cost" means the sum of present values of investment costs, capital costs, installation costs, energy costs, operating costs, maintenance costs and disposal costs over the life of the project, product or measure as provided by federal life cycle cost rules, regulations and criteria contained in the United States department of energy federal energy management program "guidance on life-cycle cost analysis" required by executive order 13423, January 2007.
 6. "Operational savings" means reductions in actual budget line items currently being expended or savings realized from the implementation or installation of energy cost savings measures.
 7. "Qualified provider" means a person or a business experienced in designing, implementing or installing energy cost savings measures.