



**SOLAR LESSONS
FOR
DISTRICT EDUCATIONAL
SUPPORT CENTER
(DESC)**



HISTORY





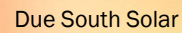
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Google earth



1994

32°24'26.67" N 80°42'54.35" W elev 98 ft eye alt 3892 ft



8 SITE PLAN OVERLAY
1.0 SCALE: 3/256" = 1'-0"



GROUND MOUNT SYSTEM SPECS

PV MODULE	:	CANADIAN SOLAR MAX POWER CS6X-300
TOTAL PV MODULES	:	4332 MODULES
TOTAL WATTS	:	1299.5 KW DC
ARRAY TYPE	:	FIXED TILT
ARRAY TILT	:	20 DEGREES
TOTAL POST	:	X
ARRAY ROW SPACING	:	18.64
CLEAR SPACE	:	6.59
STRING SIZE	:	
ARRAY AZIMUTH	:	180 DEGREES
(NOT ADJUSTED FOR MAGNETIC DECLINATION)		

NOTES

1. LOCATION OF UNDERGROUND UTILITIES SHALL BE VERIFIED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. DIMENSION SHOWN ON PLAN SHALL BE VERIFIED IN FIELD.
3. LAYOUT IS SUBJECT TO CHANGE PER REQUEST AND/OR EXISTING CONDITIONS IN THE FIELD.
4. ALL SHADING ANALYSIS AND/OR PRODUCTION ANALYSIS SHALL BE PERFORMED AND VERIFIED BY OTHERS. RBT IS NOT RESPONSIBLE FOR SYSTEM DESIGN AS IT PERTAINS TO ELECTRICAL OR SYSTEM PRODUCTION.



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5. DIVISION RECORDS

[illegible]

CUSTOMER

DUE SOUTH SOLAR

PROJECT ADDRESS:

Source:

BILAUPT, SC

[illegible]

ADDRESS

2900 Mark Post Blvd.

2.9.2, MD.1

RMI®

SHEET TITLE:

SITE PLAN

CHRONIC DYS	CHRONIC
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Abt. Wölitz	C7EC
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DOCUMENT DATE:

02/24/2015

SUBJECT:

1.0



PHILOSOPHY

- Savings:
 - Create an Energy Savings Contract that will save DESC at least 25% off their total electric bill for next 20 years.
 - More than \$1,000,000...
- Education:
 - Provide in class monitoring of solar performance.
 - Provide on-site class visitation, and tours.
- Training:
 - Involve Career & Technical Education - CATE (tbd)
 - Technical College of the Low Country – O&M (tbd)



ENERGY SAVINGS CONTRACT

- DS will design, install and maintain a solar system that qualifies for the SCE&G DER rate.
- DS will sell that renewable energy to SCE&G to generate Energy Credits that can be used by DESC to lower their total electric charges by, at least 25%*, for the next 20 years.
- DESC will pay DS an Energy Savings Fee equal to the balance of the unused Energy Credits.
- *Potentially greater %, based on final cost/financing (i.e. REAP Grant / ITC)



MATH

- DESC Annual kWh usage: 1,291,200 kWh *
- DESC cost/ kWh: \$.130265 *
- DESC Annual Expense: \$168,198 *
- Energy Savings (25% Contract) \$42,050*

- Net DESC Energy Expense = \$126,148*
- *2014 Data



LOGISTICS - VERBAL

➤ DS:

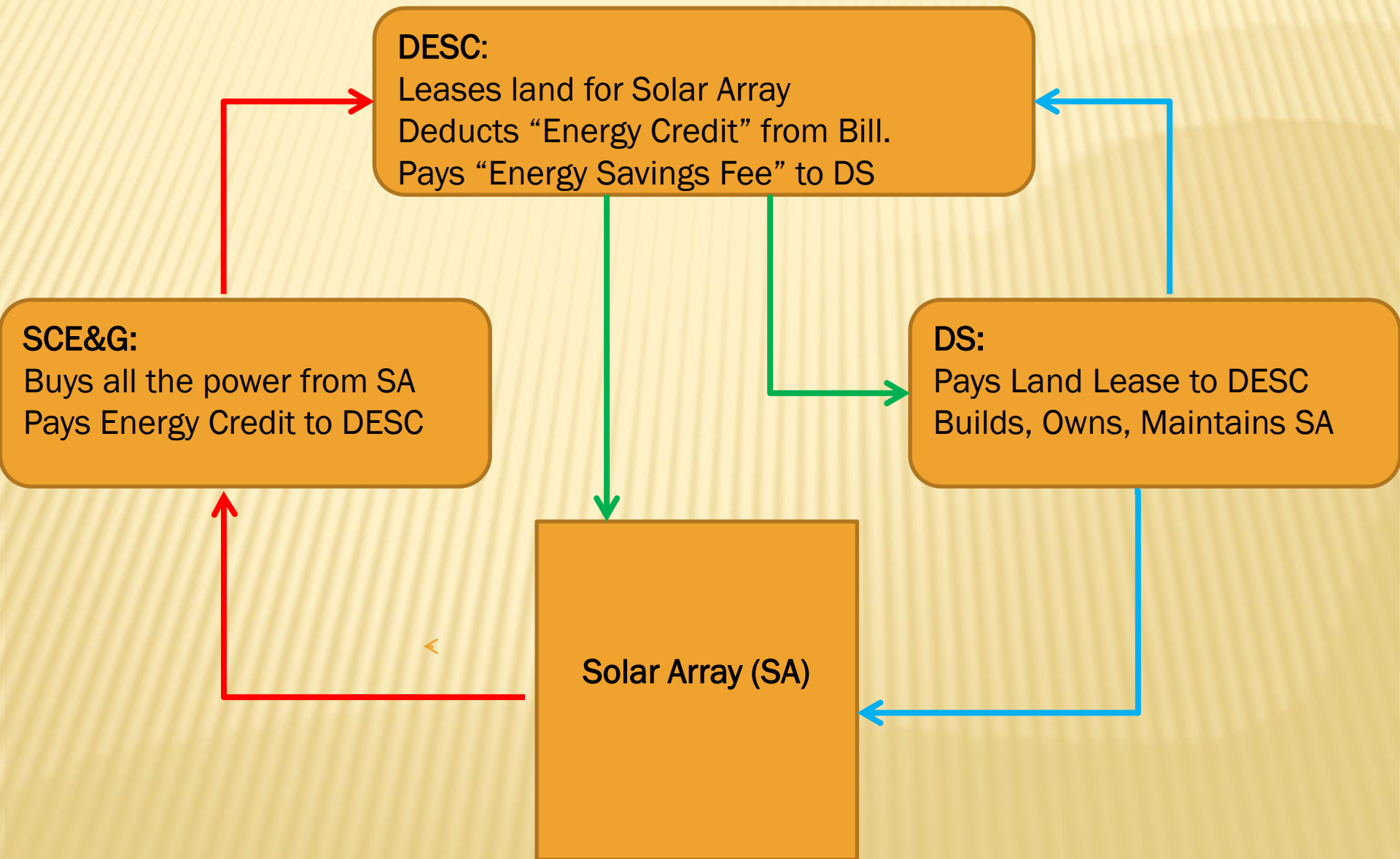
- Leases land from DESC for 20 years. Commensurate with Energy Savings Contract.
- Builds, Owns, & Maintains* solar system (SS). *(SCE&G Approval)
- Sells all renewable power to SCE&G to generate Energy Credits for DESC.

➤ DESC:

- Receives Land Lease payments from DS.
- Receives renewable Energy Credits from SCE&G.
- Uses Energy Credits to reduce total Electrical Expense according to Energy Savings Contract.
- Pays (or assigns) DS an Energy Savings Fee (ESF) according to Energy Savings Contract.

➤ SCE&G

- Buys all generation from solar system.
- Pays DESC credit for all renewable generation purchased, according to DER Rate.





ECONOMICS: YEARS 1-10

- SCE&G DER Rate is \$.22/kWh for 10 years.
- Assuming a 2% escalation in rates per year, DESC Energy Savings (ES) would be as follows:

DER Energy Savings		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
DESC Energy kWh		1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000
Cost / kWh	2%	0.13027	0.13287	0.13553	0.13824	0.14100	0.14382	0.14670	0.14963	0.15263	0.15568
Energy Costs Total		\$169,345	\$172,731	\$176,186	\$179,710	\$183,304	\$186,970	\$190,709	\$194,524	\$198,414	\$202,382
DESC Energy Savings Total	25%	\$42,336	\$43,183	\$44,047	\$44,927	\$45,826	\$46,743	\$47,677	\$48,631	\$49,604	\$50,596
Net DESC Energy Costs		\$127,008	\$129,549	\$132,140	\$134,782	\$137,478	\$140,228	\$143,032	\$145,893	\$148,811	\$151,787
Energy Savings Total		\$ 463,569									

**Energy Savings generated by Energy Savings Contract.
The 1-10 year (ES) total would be: \$463,569**



ECONOMICS OF YEAR 11 – 20

- Continue with DER Rate if still available.
- If DER Rate ends, change interconnect to Net Metered. (DS Cost)
- Net Metered Credits will effectively zero out bill from SCE&G.
- DESC Energy Savings (ES) would be as follows:

		Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
DER Energy Savings											
DESC Energy kWh		1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000
Cost / kWh	2%	0.15879	0.16197	0.16521	0.16851	0.17188	0.17532	0.17883	0.18240	0.18605	0.18977
Energy Costs Total		\$206,430	\$210,559	\$214,770	\$219,065	\$223,446	\$227,915	\$232,474	\$237,123	\$241,866	\$246,703
<u>DESC Energy Savings Total</u>	<u>25%</u>	<u>\$61,929</u>	<u>\$63,168</u>	<u>\$64,431</u>	<u>\$65,720</u>	<u>\$67,034</u>	<u>\$68,375</u>	<u>\$69,742</u>	<u>\$71,137</u>	<u>\$72,560</u>	<u>\$74,011</u>
Net DESC Energy Costs		\$144,501	\$147,391	\$150,339	\$153,346	\$156,413	\$159,541	\$162,732	\$165,986	\$169,306	\$172,692
Energy Savings Total		\$678,105									

The 11-20 year (ES) total would be: \$678,105



TOTAL 20 YEAR ENERGY SAVINGS CONTRACT

- At Energy Savings Contract Savings level of 25%...
- Energy Savings for Years 1-10 = **\$463,569**
- Energy Savings for Years 11-20 = **\$678,105**
- Total Energy Savings for 20 Years = **\$1,114,672**



CRITICAL PATH ANALYSIS

- Land Lease with DESC*.
- Rate 22 qualification from SCE&G.
(Already granted).
- REAP Grant & Loan deadline of April 30th *.
- Interconnection Permit (IP) from SCE&G
- Construction within 120 days of IP.



CHEMISTRY

- DS will be the developer and owner of the SS.
- Southern Current (SC) will be the designer and installer of the SS.
- <http://southerncurrentllc.com/>
- Paul Fleury, principal of SC, is also president of SC SBA.
- Financing will be thru USDA – RD, REAP Grants & Loans. (April 30th deadline)



QUESTIONS

