

Glendale Unified School District

\$10,916,000 Clean Renewable Energy Bonds* 2016 “Phase 5” Solar Project

**Board Meeting & Public Hearing
October 4, 2016**

Steve Nielsen
Principal



MuniBond Solar

Overview of CREB Financing

- Purpose: To Finance 100% of District’s “Phase 5 Solar Project”
- Estimated Size = \$10,916,000*
- Repayment Period = 17 Years
- Estimated Net Interest Cost = 0.616 %

Gross Rate Paid to Lender	3.430%		
Fed Subsidy (70% of TCR)	-2.814%	4.020%	TCR (Tax Credit Rate) on 9/27/16
Estimated Net Interest Rate	0.616%		

* Final proposed CREB amount to be presented at October 4th Public Hearing.

CREBs “Use of Proceeds”

SPWR EPC Contract	\$19,843,500
Project Development Cost	\$890,000
Total Solar Project	\$20,733,500
Cost of Issuance	\$182,500
TOTAL CREBS PAR AMOUNT	\$20,916,000

Solar Project Detail

Phase 5 Solar Project			
	System Size (kWp)	Yield (kWh/kWp)	Generation (kWh/Year)
Cerritos ES	5.70	,809.56	173,175
E. Toll MS	287.10	,826.28	524,325
Horace Mann ES	5.70	,810.93	173,306
John Muir ES	208.80	,794.00	374,587
RD White ES	82.70	,821.86	332,854
T Jefferson ES	17.45	,809.35	212,508
W. Wilson MS	365.40	,799.42	657,508
Glendale HS	61.15	,747.88	806,032
Hoover HS	25.60	,757.16	1,099,273
Total/Avg	2,439.59	,784.5	4,353,566

Estimated Solar Procurement Cost

\$9,943,465

(\$4.03 per Watt-dc)

Proposed Time Table

- OCT 4th - Board Meeting & Public Hearing
 - ✓ **Board Approves Authorizing Resolution**
- OCT 5th – Lock in Tax Credit Rate (Fix CREB Interest Rate)
- OCT 14th – Financial Closing of CREBs
- OCT 18th - Board Approves Solar Contracts
- District Issues “Notice to Proceed” to SunPower

Additional Information / Solar Project Detail

30-Year Solar Cash Flow

(97% Solar Production)

\$1,000,000

Fisc Yr

2017/18

2018/19

2019/20

2020/21

2021/22

2022/23

2023/24

2024/25

2025/26

2026/27

2027/28

2028/29

2029/30

2030/31

2031/32

2032/33

2033/34

2034/35

2035/36

2036/37

2037/38

2038/39

2039/40

2040/41

2041/42

2042/43

2043/44

2044/45

2045/46

2046/47

Total

GENERAL FUND SAVINGS (Bill Reduction)

System Size (kWp)	2,439.6
EPC Price (\$/Wp)	\$4.03
Solar Yield (kWh per kWp)	1,785
Annual Rate of PV Degradation	0.25%
Avg Avoided Cost (\$/kWh)	\$0.1580
Annual Electricity Cost Inflation	3.00%

Solar Generation (kWh) X Avoided Utility Cost (\$/kWh) = Utility Bill Savings

Solar Generation (kWh)	Avoided Utility Cost (\$/kWh)	Utility Bill Savings
2,520,788	\$0.1593	\$401,489
2,212,402	\$0.1676	\$370,609
2,201,870	\$0.1727	\$380,255
2,191,366	\$0.1778	\$389,453
2,180,887	\$0.1832	\$398,657
2,170,435	\$0.1887	\$407,866
2,160,009	\$0.1943	\$417,080
2,149,609	\$0.2001	\$426,300
2,139,235	\$0.2062	\$435,526
2,128,887	\$0.2123	\$444,767
2,118,565	\$0.2187	\$454,024
2,108,268	\$0.2253	\$463,297
2,097,998	\$0.2320	\$472,586
2,087,753	\$0.2390	\$481,891
2,077,533	\$0.2462	\$491,212
2,067,339	\$0.2535	\$500,559
2,057,171	\$0.2612	\$509,931
2,047,028	\$0.2690	\$519,328
2,036,911	\$0.2771	\$528,751
2,026,818	\$0.2854	\$538,199
2,016,751	\$0.2939	\$547,673
2,006,709	\$0.3027	\$557,173
1,996,693	\$0.3118	\$566,699
1,986,701	\$0.3212	\$576,251
1,976,734	\$0.3308	\$585,829
1,966,792	\$0.3407	\$595,443
1,956,875	\$0.3510	\$605,083
1,946,983	\$0.3615	\$614,749
1,937,116	\$0.3723	\$624,441
1,927,273	\$0.3835	\$634,159

Total 20,499,501 kWh generated, resulting in \$1,079,805 in utility bill savings.

GENERAL FUND COST (Repay Bonds)

Solar System Cost	\$843,500
Project Development Contingency Costs	\$90,000
Cost of Issuance	\$82,500
Total CREB Loan Amount	\$1,016,000
First Year O&M Cost	\$81,760
O&M Annual Escalation Rate	3.00%

Operation & Maint Costs | CREB Repayment (after Subsidy) | Total Cost of Solar

Operation & Maint Costs	CREB Repayment (after Subsidy)	Total Cost of Solar
\$(56,740)	\$1,189,779	\$1,246,519
\$(84,212)	\$1,169,677	\$1,253,889
\$(86,738)	\$1,155,676	\$1,242,415
\$(89,341)	\$1,142,521	\$1,231,861
\$(92,021)	\$1,128,116	\$1,220,137
\$(94,781)	\$1,112,463	\$1,207,244
\$(97,625)	\$1,097,530	\$1,195,154
\$(100,554)	\$1,081,223	\$1,181,776
\$(103,570)	\$1,063,542	\$1,167,112
\$(106,677)	\$1,044,488	\$1,151,165
\$(109,878)	\$1,026,029	\$1,135,906
\$(113,174)	\$1,006,071	\$1,119,245
\$(116,569)	\$986,583	\$1,103,152
\$(120,066)	\$965,472	\$1,085,538
\$(123,668)	\$942,738	\$1,066,406
\$(127,378)	\$918,380	\$1,045,758
\$(131,200)	\$890,274	\$1,031,473
\$(135,136)	\$868,511	\$1,003,375
\$(139,190)	\$843,121	\$974,181
\$(143,365)	\$814,106	\$940,841
\$(147,666)	\$780,275	\$897,941
\$(152,096)	\$741,629	\$849,633
\$(156,659)	\$698,278	\$791,977
\$(161,359)	\$651,123	\$729,764
\$(166,200)	\$600,264	\$664,064
\$(171,186)	\$545,601	\$594,415
\$(176,321)	\$487,136	\$470,815
\$(181,611)	\$424,771	\$333,160
\$(187,059)	\$358,506	\$181,447
\$(192,671)	\$288,341	\$95,670

Total Operation & Maint Costs: \$3,864,710 | Total CREB Repayment: \$17,930,560 | Total Cost of Solar: \$21,795,270

GENERAL FUND SAVINGS

25 Yr Gross Savings	\$10,054,130
30 Yr Gross Savings	\$12,284,535
25 Yr NPV Savings	\$2,270,000
30 Yr NPV Savings	\$3,388,000

General Fund Savings by Fiscal Year

\$(845,031)
\$(547,796)
\$(516,958)
\$(486,508)
\$(454,343)
\$(420,448)
\$(386,781)
\$(351,233)
\$(313,791)
\$(274,442)
\$(235,139)
\$(193,774)
\$(152,300)
\$(108,609)
\$(62,684)
\$(14,510)
\$28,057 (CREBs Paid-Off)
\$953,453
\$979,253
\$1,005,751
\$1,032,964
\$1,060,913
\$1,089,617
\$1,119,096
\$1,149,372
\$1,180,466
\$1,212,399
\$1,245,195
\$1,278,877
\$1,313,468

Total General Fund Savings: \$9,284,535

Partial first year assumes two high schools receive PTO 2/8/2017 and remaining 7 schools solar projects receive PTO 10/19/17

Muni Lease Financing- Overview

