DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-6130
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Making Conservation a California Way of Life.

March 5, 2018

Ms. Diane Boyer-Vine
Legislative Council
State Capitol, Room 3021
Sacramento, CA 95814

Mr. Daniel Alvarez
Secretary of the Senate
State Capitol, Room 3044
Sacramento, CA 95814

Mr. Dotson Wilson
Chief Clerk of the Assembly
State Capitol, Room 3196
Sacramento, CA 95814

Dear Ms. Boyer-Vine, and Messrs. Alvarez, and Wilson:

The California Department of Transportation's (Caltrans) announces the release of the "Clean Renewable Energy Bonds Program 2018 Annual Report". Caltrans has prepared the report in accordance with Section 157.8 of the California Streets and Highways Code.

The report presents, in detail, the status of the 70 facilities on which Caltrans has installed photovoltaic energy systems as part of the Clean Renewable Energy Bonds Program, an accounting of the costs for each photovoltaic energy system installed, a description of the energy savings Caltrans is projected to achieve by installing a photovoltaic energy system, and a review and analysis of the expected cost savings at the time of issuance of the bonds versus the actual annual savings.

Distribution to the Legislature has been made by Caltrans pursuant to California Government Code section 9795. This report can be found at www.dot.ca.gov/legislative/reports-legislature.html.

Sincerely,

LAURIE BERMAN
Director

Enclosure

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Making Conservation a California Way of Life.

March 5, 2018

The Honorable Holly Mitchell, Chair
Senate Budget and Fiscal Review Committee
State Capitol, Room 5019
Sacramento, CA 95814

The Honorable Phil Ting, Chair
Assembly Budget Committee
State Capitol, Room 6026
Sacramento, CA 95814

Dear Senator Mitchell and Assembly Member Ting:

The California Department of Transportation's (Caltrans) announces the release of the "Clean Renewable Energy Bonds Program 2018 Annual Report". Caltrans has prepared the report in accordance with Section 157.8 of the California Streets and Highways Code.

The report presents, in detail, the status of the 70 facilities on which Caltrans has installed photovoltaic energy systems as part of the Clean Renewable Energy Bonds Program, an accounting of the costs for each photovoltaic energy system installed, a description of the energy savings Caltrans is projected to achieve by installing a photovoltaic energy system, and a review and analysis of the expected cost savings at the time of issuance of the bonds versus the actual annual savings.

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Sincerely,

LAURIE BERMAN
Director

Enclosure

Clean Renewable Energy Bonds Program
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District 3 Willows Safety Roadside Rest Area

Report to the Legislature

2018

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Executive Summary

California Streets and Highways Code section 157.8 requires the California Department of Transportation (Caltrans) to annually report to the budget committees of each house of the Legislature with regard to the issuance of Clean Renewable Energy Bonds (CREBs) for financing the acquisition and installation of photovoltaic (solar) energy systems until maturity of the bonds (Fiscal Year 2023-2024).

The 2018 CREBs Annual Report includes the following information:

- The status of each facility on which Caltrans has installed photovoltaic energy systems as part of the CREBs Program. (Exhibit 1)
- An accounting of the costs for each photovoltaic energy system installed or acquired by Caltrans. (Exhibit 1)
- A description of the energy savings Caltrans has achieved by acquiring or installing photovoltaic energy systems. (Exhibit 3)
- A review and analysis of the expected cost savings at the time of issuance of the bonds (Exhibit 2) versus actual annual savings. (Exhibit 3)

Caltrans remains committed to supporting the Governor's goals of a sustainable clean technology economy, improving reliability of the electrical grid, and reducing air pollution, among other things.

Background

Statutory Reference & Purpose

California Streets and Highways Code section 157.8 requires the California Department of Transportation (Caltrans) to annually report to the budget committees of each house of the Legislature with regard to the issuance of Clean Renewable Energy Bonds (CREBs) for financing the acquisition and installation of photovoltaic (solar) energy systems until maturity of the bonds (Fiscal Year 2023-2024).

Program Background

Background

The CREBs Program was authorized as part of the Tax Incentives Act of 1995, which was passed by the United States Congress to encourage energy conservation, develop energy infrastructure, increase domestic energy production and the use of alternative energy sources.

The CREBs Program is administered by the United States Internal Revenue Service (IRS). CREBs are a type of tax credit bond in which interest on the bonds is paid in the form of tax credits by the United States government. The proceeds for the issuance of the CREBs are available to finance renewable energy and clean coal facilities projects.

On November 13, 2006, the IRS approved 93 CREBs applications submitted by Caltrans, with a total value of $45.6 million. Caltrans subsequently initiated efforts to re-evaluate and approve facilities for conceptual soundness and adjusted the scope as necessary at each facility. The re-evaluation criteria consisted of the age and condition of the roof and design; the long-term building retention; structural integrity; and a cost-benefit analysis. Through this process, the number of photovoltaic projects was reduced to 70, with construction and installation costs estimated at $19.9 million.

A Banc of America Securities Bond sale for capital outlay costs was obligated for a total of $20 million, plus interest of $2.2 million (1.45% rate) over a 15-year period.

Overview

The 70 projects funded under the CREBs Program have been constructed and have a generating capacity of approximately 2.4 megawatts (MW) solar power (Exhibit 1). The photovoltaic panels have a life expectancy of at least 25 years. The installation of the photovoltaic energy systems will help Caltrans meet the State green building goals outlined in Executive Order (EO) B-18-12 signed by Governor Edmund G. Brown Jr. on April 25, 2012. Among other things, this order sets a goal for State agencies to continue to take measures to reduce grid-based energy purchases at least 20 percent by 2018. It also sets a goal for State agencies to take actions to reduce greenhouse gas emissions 20 percent by 2020. The utilization of photovoltaic energy systems for Caltrans' operations reduces the department's greenhouse gas emissions, and supports California's ambitious statewide climate goal of reducing greenhouse gas emissions to 40 percent below 1990 levels by 2030 (Senate Bill 32 (Pavley) Chapter 249, Statues of 2016).

A listing of Caltrans' 70 photovoltaic installation projects at various transportation facilities, as well as the dates the photovoltaic systems began generating solar power, is presented in Exhibit 1. The following table displays the total number of photovoltaic energy system projects by facility type.

Facility Type	Number of Projects
Maintenance Facilities	46
Equipment Shops	9
Safety Roadside Rest Areas	3
Office Buildings	4
Materials Laboratories	2
Transportation Management Centers	2
Toll Bridge Facilities	2
Truck Inspection Facilities	2
TOTAL	70

Program Status/Program Accomplishments

Status of Projects

As of January 2013, all 70 projects were completed and generating electricity. Consequently, the need for managing and measuring energy and production has become increasingly critical. Caltrans was utilizing traditional track monitoring, manual meter readings, and created a database in which monthly data readings were manually recorded. However, it was ascertained traditional track monitoring led to inaccuracy of data collection, inability to detect breakdowns in a timely manner, and inability to optimize production. Therefore, Caltrans has contracted with eSight Enterprise, a third-party vendor, to remotely monitor and report the monthly solar power production from the 70 CREBs sites. As of December 2017, Caltrans has the ability to monitor 61 sites utilizing a "CREB PV Monitoring Database and Report Tool". The major reasons 9 of the CREBs sites do not have telemetry monitoring are as follows:

- Five (5) of the sites do not have existing internet capabilities.
- Four (4) of the sites have inverters in which the electronic information is not compatible with the Caltrans' telemetry monitoring system. Therefore, the two (2) systems are unable to communicate electronically.

To ensure the photovoltaic systems operate effectively and efficiently, Caltrans has procured a contract to provide photovoltaic system service on an on-call, as needed basis. The scope of work in the contract includes the following:

- Address inverter issues, inverters that have gone bad or the communication link to the inverters has gone bad;
- Troubleshoot inverters and work with the inverter manufacturer to repair them;
- Test individual photovoltaic strings to determine if all the panels are working properly per manufacturer specifications and make recommendations and replace panels that are not operational;
- Troubleshoot and correct any communication issues the systems connected to the Caltrans' intranet; and
- Troubleshoot and fix wiring, blown fuses, etc.

BUDGET

Original Cost Benefit Analysis

Caltrans examined the cost effectiveness and viability of each project. Financial factors considered for each project included energy consumption and the average cost of the utility-provided electricity for the facility. This data was compared with industry averages for the cost to install roof-mounted photovoltaic energy systems for the required kilowatt hours of electricity used at each facility. As a result, Caltrans estimated a utility savings of approximately $24.7 million over 15 years with a bond debt service payment of $22.8 million (Exhibit 2).

Revised Cost Benefit Analysis

Due to the inconsistencies of traditional track monitoring and the telemetry monitoring internet and inverter issues, sufficient data for the actual energy generated to accurately calculate the annual avoided cost of energy is not available at this time. Therefore, the cost benefit analysis was prepared utilizing actual energy generated, when available, and a projection of the energy to be generated in order to estimate the annual avoided cost of energy. It has been found that the actual energy production and cost avoidance are consistent with predicted values for those sites which have been generating energy for over a year.

In the revised cost benefit analysis, the annual avoided cost of energy was changed to reflect the guidelines and assumptions presented by the California Energy Commission (Commission) in the photovoltaic installation guidelines titled, "A Guide to Photovoltaic System Design and Installation," dated June 2001. Furthermore, Caltrans elected to design, bid, and manage the CREBs projects. Lower than expected construction costs and rebates have enabled Caltrans to make a prepayment on outstanding CREBs bonds. The planned bond prepayment will reduce the bond debt service by approximately $10.3 million to $12.4 million. The CREBs' principal prepayment took place from unused bond proceeds on June 10, 2014, which was a schedule prescribed in the CREBs Bond Indenture and the Equipment Sublease, Section E. The Caltrans personnel cost to support the CREBs Program was approximately $4.4 million. As a result, Caltrans estimates a utility savings of approximately $9.4 million over the 15 years with a bond debt service of $12.4 million (Exhibit 3).

Comparison of the Original Cost Benefit Analysis and the Revised Cost Benefit Analysis

Due to Caltrans' limited experience with photovoltaic energy systems, the original cost benefit analysis did not account for all factors that affect the output of a photovoltaic energy system and economic benefits under variable weather conditions over time. Because the intensity of light on a surface varies throughout a day, as well as day to day, the actual output of a photovoltaic energy system can vary substantially. Therefore, to obtain a more realistic expectation of the overall system output and economic benefits, calculations were adjusted in the revised cost benefit analysis utilizing the guidelines provided by the Commission, which consider factors such as standard test conditions, dirt and dust, temperature, sun angle, and building orientation.

The original Cost Benefit Analysis Annual Avoided Cost calculation was based on an average of eight hours of sunlight each day. Following the guidelines of the Commission report, the average time of sunlight each day was revised to approximately five hours each day.

Taking into account the various factors that the Commission has identified as affecting the output of a photovoltaic energy system and the delays to the original CREBs project delivery schedule, the following assumptions identified in the original cost benefit analysis have changed:

- The total avoided cost changed from $24.7 million to $9.4 million over a 15-year period.
- The total bond debt service of $22.8 million was reduced to $12.4 million.
- It will take an additional 10 years to recoup the funds invested in photovoltaic systems (15 years revised to 25 years).

Conclusion

The CREBs Program was established to increase Caltrans' efforts towards grid-based energy conservation as outlined in EO B-18-12. This was to be accomplished by installing photovoltaic energy systems on Caltrans-owned facilities at a cost of $20 million and financed through a 1.45 percent interest CREBs. It was Caltrans' anticipation that the CREBs Program would begin generating electricity one year after the sale of the bonds and that the bond debt service be fully paid through avoided energy cost before the maturity of the bond.

Although Caltrans has not met the original projected cost saving of the CREBs Program, after 25 years the bond debt and costs associated with the photovoltaic projects will be paid off. For the life of the system, it is projected that Caltrans will save approximately $2.8 million (Exhibit 3). The photovoltaic projects increased the departmental efforts towards energy conservation and reduction of greenhouse gas emissions as outlined in EO B-18-12 and EO B-30-15 and support the State's renewable power statutes, "green power," electric grid demand, energy conservation, Leadership in Energy and Environmental Design (LEED), and climate change mandates.

Governor Brown continues to support California's efforts to grow its robust, sustainable clean tech economy, improve reliability of the electric grid, and reduce air pollution. The Caltrans CREBs Program works towards reaching the Governor's goal of stimulating investments in green technology, creating new jobs for small and disadvantaged business enterprises, and promoting energy independence. While the average number of homes powered per MW of solar power varies from state to state due to the average sunshine, average household

electricity consumption, and the temperature and wind, the generating capacity of approximately 2.4 MW solar power from that the Caltrans' 70 sites is estimated to power approximately 500 homes per year in California.

Exhibits

1 California Department of Transportation Clean Renewable Energy Bonds Projects

2 CREBs 15-Year Bond Term (Original Cost Benefit Analysis)

3 CREBs 15-Year Bond Term (Revised Cost Benefit Analysis)

California Department of Transportation **Exhibit 1**

Clean Renewable Energy Bonds Projects

Num	District	Project	City	Project Cost	kW AC Actual	Date Began Gen Power
1	3	Elk Grove Maintenance Station	Elk Grove	$115,368	15.0	7/20/2010
2	3	Willows SRRA	Glenn County	$29,143	3.0	8/26/2010
3	3	Sunrise Maintenance Station	Rancho Cordova	$231,000	30.0	7/19/2010
4	3	District 3 - Maint. Facility 2	Chico	$155,000	23.0	9/14/2010
5	4	District 4 - Maint. Facility 3	Cupertino	$169,675	20.0	9/21/2010
6	10	John C. Erreca SRRA	Merced County	$56,800	9.0	8/3/2010
7	6	Porterville Maintenance Station	Porterville	$120,362	15.8	7/19/2010
8	5	District 5 - Maint. Facility 5	Santa Maria	$107,300	15.0	8/20/2010
9	5	District 5 - Maint. Facility 2	Monterey	$55,600	13.0	8/19/2010
10	4	District 4 - Maint. Facility 19	Walnut Creek	$142,700	20.0	9/7/2010
11	4	Equipment Building #7	San Leandro	$239,400	45.0	9/22/2010
12	6	District 6 - Maint. Facility 2	Delano	$164,025	20.0	10/11/2010
13	6	Lebec Maintenance Station	Lebec	$133,808	15.8	10/4/2010
14	6	District 6 Office Building	Fresno	$432,669	89.3	9/22/2010
14		District 6 Office Building - Supplemental Work		$71,205		
15	6	District 6 - Maint. Facility 3	Fresno	$163,027	22.0	11/10/2010
16	6	Equipment Building #11	Fresno	$180,723	35.0	11/17/2010
17	2	Burney Maintenance Station	Burney	$198,900	30.0	10/26/2010
18	3	Equipment Building #5	Marysville	$457,631	92.2	11/18/2010
19	6	Equipment Building #12	Bakersfield	$211,632	42.0	12/8/2010
20	11	District 11 - Maint. Facility 4	San Diego	$178,835	35.7	12/9/2010
21	10	Westley SRRA	Stanislaus County	$123,869	14.0	11/30/2010
22	4	District 4 - Maint. Facility 8	Hercules	$109,563	12.0	12/15/2010
23	4	District 4 - Maint. Facility 6	Gilroy	$49,479	7.0	12/16/2010
24	9	District 9 - Maint. Facility 1	Bishop	$184,190	35.0	12/16/2010
25	6	District 6 - Maint. Facility 4	Visalia	$224,754	30.0	1/17/2011
26	9	District 9 Office Building	Bishop	$441,058	89.3	1/19/2011
27	7	District 7 - Maint. Facility 10	Tarzana	$64,398	10.0	1/25/2011
28	3	District 3 - Maint. Facility 1	Auburn	$111,300	20.0	1/26/2011
29	7	District 7 - Maint. Facility 1	Altadena	$138,668	20.0	1/25/2011
30	3	Main Lab Bldg (Translab) (New Warehouse) Phase I	Sacramento	$887,000	165.0	4/11/2011
31	1	Bracut Maintenance Station	Eureka	$255,721	50.0	3/11/2011
32	1	Equipment Building #1 (2101)	Eureka	$174,892	30.0	2/16/2011
33	1	District 1 - Maint. Facility 1 (Annex)	Eureka	$139,989	25.0	2/16/2011
34	7	Newhall Maintenance Station	Valencia	$164,297	33.0	2/9/2011
35	9	Shoshone Maintenance Station	Shoshone	$99,733	15.8	2/22/2011
36	8	Equipment Building #15	Barstow	$192,500	30.0	2/11/2011
37	11	Equipment Building #18	San Diego	$379,898	65.0	4/14/2011
38	7	District 7 - Maint. Facility 5	Monrovia	$142,408	20.0	3/17/2011
39	12	District 12 - Maint. Facility 1	Orange	$207,899	42.8	4/13/2011
40	4	District 4 - Maint. Facility 9	Napa	$84,024	8.0	6/8/2011
41	7	District 7 - Maint. Facility 2	Camarillo	$210,465	30.0	3/14/2011
42	1	District 1 Office Building	Eureka	$372,539	75.0	4/25/2011
43	12	Costa Mesa Maintenance Station	Costa Mesa	$212,061	42.8	7/14/2011
44	4	District 4 - Maint. Facility 15	San Leandro	$176,913	30.0	3/27/2012
45	11	San Diego - Coronado Bridge	San Diego	$202,000	47.6	5/27/2011
46	11	San Onofre SB I-5 Truck Inspection Facility	San Onofre	$99,000	23.8	5/25/2011
47	7	District 7 - Maint. Facility 3	Commerce	$206,420	36.5	1/14/2013
48	5	Equipment Building #10	San Luis Obispo	$272,843	48.0	4/23/2011
49	4	District 4 - Maint. Facility 7	Hayward	$158,750	30.0	4/27/2011
50	4	District 4 - Maint. Facility 2	Crockett	$184,800	25.0	5/10/2011
51	4	South San Jose Maintenance Station	San Jose	$170,738	30.0	5/23/2011
52	4	District 4 Maintenance Facility	Petaluma	$135,497	20.0	6/24/2011
53	5	District 5 - Maint. Facility 4	Santa Barbara	$99,285	15.0	2/8/2012
54	1	District 1 - Maint. Facility 3	Ukiah	$177,489	25.0	9/7/2011
55	4	District 4 - Maint. Facility 1	Benicia	$185,800	30.0	7/6/2011
56	10	Stockton Maintenance Station	Stockton	$214,050	30.0	10/18/2011
57	5	District 5 - Maint. Facility 1	Buellton	$89,600	15.0	10/20/2011
58	5	Santa Cruz - Maint. Facility 17	Santa Cruz	$102,373	15.0	10/12/2011
59	5	District 5 Office Building	San Luis Obispo	$365,228	73.5	10/19/2011
60	7	Chilao Maintenance Station	La Canada	$121,569	12.0	8/4/2011
61	2	Quincy Maintenance Station	Quincy	$172,351	30.0	10/6/2011
62	11	Calexico NB Truck Inspection Facility	Herber	$108,675	15.0	7/27/2012
63	8	District 8 - Maint. Facility 1	Riverside	$171,792	30.0	1/18/2012
64	4	Antioch Bridge Toll Plaza	Antioch	$78,931	10.0	7/5/2012
		Main Lab Bldg (Translab) (Exist Geotech & Structure Materials)				
65	3	Phase II	Sacramento	$284,076	44.0	8/11/2011
66	12	TMC #6	Irvine	$254,395	50.8	3/7/2012
67	12	District 12 Maint. Facility	Orange	$244,627	43.9	2/15/2012
68	7	District 7 Maint. Facility	Long Beach	$238,900	45.2	7/1/2012
69	11	TMC #5	San Diego	$235,292	40.0	3/2/2012
70	3	Division of Equipment Building	Sacramento	$414,000	100.0	8/2/2012
			Total:	**$13,750,902**	**2,375.8**	
			Telemetry Monitoring Costs:	$354,892		
			Project Costs:	**$14,105,794**		
			Rebates:	($3,701,194)		
			TOTAL PROJECT COSTS:	**$10,404,600**		

CREBs 15-Year Bond Term (Original Cost Benefit Analysis)

Fiscal Year	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*	Total (Yr 1-8)
Annual Avoided Cost	$403,457	$1,237,411	$1,389,299	$1,444,871	$1,502,666	$1,562,772	$1,625,283	$1,690,295	**$10,856,054**
DOT Cost (Maint.)	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
State Highway Acct	($925,000)	$0	$0	$0	$0	$0	$0	$0	**($925,000)**
Bond Debt Payment	($1,781,111)	($1,624,000)	($1,604,667)	($1,585,333)	($1,566,000)	($1,546,667)	($1,527,333)	($1,508,000)	**($12,743,111)**
Net Avoided Cost	($2,302,654)	($386,589)	($215,368)	($140,462)	($63,334)	$16,106	$97,950	$182,295	**($2,812,057)**

Fiscal Year	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Total (Yr 1-15)
Annual Avoided Cost	$1,757,906	$1,828,223	$1,901,352	$1,977,406	$2,056,502	$2,138,762	$2,224,312	**$24,740,517**
DOT Cost (Maint.)	$0	($300,000)	$0	$0	$0	$0	$0	**($300,000)**
State Highway Acct	$0	$0	$0	$0	$0	$0	$0	**($925,000)**
Bond Debt Payment	($1,488,667)	($1,469,333)	($1,450,000)	($1,430,668)	($1,411,333)	($1,392,000)	($1,372,667)	**($22,757,779)**
Net Avoided Cost	$269,240	$58,889	$451,352	$546,738	$645,169	$746,762	$851,646	**$757,738**

Assumptions:

1. CREBs anticipated to be sold by December 2008.
2. CREBs debt service payments begin in Fiscal Year 2009-2010 (Calendar Year 2009).
3. Year 1 is Fiscal Year 2009-10.
4. Photovoltaic maintenance cost estimated at $300K every 10 years.
5. Bond costs will be funded either through rebates, bond proceeds or the California Department of Transportation.

CREBs 15-Year Bond Term (Revised Cost Benefit Analysis)

Exhibit 3

Fiscal Year	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*	Total (Yr 1-8)
Annual Avoided Cost	$0	$190,783	$498,819	$641,881	$693,377	$765,237	$757,599	$693,445	**$4,241,141**
DOT Cost (Support)	($1,980,000)	($1,720,000)	($660,000)	($40,000)	$0	$0	$0	$0	**($4,400,000)**
DOT Cost (Maint.)	$0	$0	$0	$0	$0	($148,373)	($46,855)	$0	**($195,228)**
State Highway Acct	($925,000)	$0	$0	$0	$0	$0	$0	$0	**($925,000)**
Bond Debt Payment	($1,482,361)	($1,604,000)	($1,584,667)	($1,565,333)	($1,546,000)	($551,868)	($481,744)	($475,565)	**($9,291,538)**
Net Avoided Cost	($4,387,361)	($3,133,217)	($1,745,848)	($963,452)	($852,623)	$64,996	$229,000	$217,880	**($10,570,625)**

Fiscal Year	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Total (Yr 1-15)
Annual Avoided Cost	$658,159	$684,485	$711,865	$740,339	$769,953	$800,751	$832,781	**$9,439,475**
DOT Cost (Support)	$0	$0	$0	$0	$0	$0	$0	**($4,400,000)**
DOT Cost (Maint.)	($95,572)	$0	$0	($150,000)	($150,000)	$0	$0	**($590,800)**
State Highway Acct	$0	$0	$0	$0	$0	$0	$0	**($925,000)**
Bond Debt Payment	($469,386)	($463,207)	($457,028)	($450,849)	($444,670)	($438,491)	($432,312)	**($12,447,481)**
Net Avoided Cost	$93,201	$221,278	$254,837	$139,490	$175,283	$362,260	$400,469	**($8,923,806)**

Fiscal Year	*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*	Total (Yr 1-20)
Annual Avoided Cost	$866,092	$900,736	$936,765	$974,236	$1,013,206	**$14,130,510**
DOT Cost (Support)	$0	$0	$0	$0	$0	**($4,400,000)**
DOT Cost (Maint.)	$0	$0	$0	$0	$0	**($590,800)**
State Highway Acct	$0	$0	$0	$0	$0	**($925,000)**
Bond Debt Payment	$0	$0	$0	$0	$0	**($12,447,481)**
Net Avoided Cost	$866,092	$900,736	$936,765	$974,236	$1,013,206	**($4,232,770)**

Fiscal Year	*2029-30*	*2030-31*	*2031-32*	*2032-33*	*2033-34*	Total (Yr 1-25)
Annual Avoided Cost	$1,053,734	$1,095,883	$1,139,718	$1,185,307	$1,232,719	**$19,837,872**
DOT Cost (Support)	$0	$0	$0	$0	$0	**($4,400,000)**
DOT Cost (Maint.)	$0	($150,000)	($150,000)	$0	$0	**($890,800)**
State Highway Acct	$0	$0	$0	$0	$0	**($925,000)**
Bond Debt Payment	$0	$0	$0	$0	$0	**($12,447,481)**
Net Avoided Cost	$1,053,734	$945,883	$989,718	$1,185,307	$1,232,719	**$1,174,592**

Assumptions:

1. CREBs sold June 10, 2009.
2. CREBs debt service payments began in Fiscal Year 2009-2010 (December 15, 2009).
3. Photovoltaic preventative maintenance cost estimated at $150K every 10 years.
4. Repair maintenance cost is based on Contract 22A0757 Maintenance Contract encumbrances.
5. Bond costs will be funded either through rebates, bond proceeds or the California Department of Transportation.
6. Photovoltaic Construction Estimated Cost = $10.6 million

Appendix A. Statutory Reporting Reference

STREETS AND HIGHWAYS CODE - SHC
DIVISION 1. STATE HIGHWAYS [50 - 897]
(Division 1 enacted by Stats. 1935, Ch. 29.)

CHAPTER 1. Administration [50 - 227.1]
(Chapter 1 enacted by Stats. 1935, Ch. 29.)

ARTICLE 3.7. Clean Renewable Energy Bonds for the Department of Transportation [157 - 157.8]
(Article 3.7 added by Stats. 2008, Ch. 756, Sec. 15.)

157.8.
On or before March 1 of each fiscal year, and until maturity of the bonds issued pursuant to this article, the department shall report to the budget committees of each house of the Legislature with regard to the issuance of bonds and the acquisition and installation of solar energy systems under this article. The report shall include, but not be limited to, the status of each facility on which the department has installed solar energy systems; an accounting of the costs for each solar energy system installed or acquired by the department; a description of the energy savings the department has achieved by acquiring or installing a solar energy system or systems; and a review and analysis of the expected cost savings at the time of issuance of the bonds versus actual savings annually.

(Added by Stats. 2008, Ch. 756, Sec. 15. Effective September 30, 2008.)