

**Office of the President**

**TO MEMBERS OF THE COMMITTEE ON GROUNDS AND BUILDINGS:**

**ACTION ITEM – CONSENT**

*For Meeting of November 12, 2013*

**APPROVAL OF EXTERNAL FINANCING, SOLAR ENERGY RESEARCH CENTER,  
BERKELEY CAMPUS/LAWRENCE BERKELEY NATIONAL LABORATORY**

**EXECUTIVE SUMMARY**

The Solar Energy Research Center project (SERC) is for construction of a 39,000 gross square foot building that will house research devoted to nanoscale photovoltaic and electrochemical solar-to-fuel energy systems. The project will provide approximately 22,500 assignable square feet of laboratory, office, and support space. The building will have three levels, including one below grade, a combination moment-resisting and brace-frame structural system, and aluminum panel exterior cladding. The facility will be located at the Lawrence Berkeley National Laboratory.

This action is seeking to change the fund source for the \$30 million from interim financing (as approved by the Regents at their January 2012 meeting) to external financing, to be financed with University general revenue bonds. The retirement of State Public Works Board bonds in October 2013 has necessitated the request for a change in the financing for this project. The source of repayment of the \$30 million debt would be State appropriations.

The Regents are being asked to approve additional external financing of \$30 million.

**RECOMMENDATION**

The President recommends that the Committee on Grounds and Buildings recommend to the Regents that:

1. The President be authorized to obtain additional external financing not to exceed \$30 million (plus related interest expense and financing costs) for the Project. This authority, together with the previously authorized \$14.4 million, equals \$44.4 million of total authorized external financing. The President shall require that:
  - A. Interest only, based on the amount drawn down, shall be paid on the outstanding balance during the construction period.

- B. The primary source of repayment of the requested additional external financing of \$30 million plus related interest expense and financing costs shall be from State appropriations.
  - C. The general credit of the Regents shall not be pledged.
2. The President be authorized to execute all documents necessary in connection with the above.

### BACKGROUND

The Helios Energy Research Center was originally proposed in February 2007 as a single 88,000 assignable square foot (asf) building, to be located in the hills east of the Berkeley campus, at the southern edge of LBNL. The 2007 Budget Act included a \$70 million appropriation of State lease revenue bonds for this joint project between LBNL and the Berkeley campus. In 2009, the Regents and the State of California approved splitting this project into separate facilities: Helios West, currently being constructed at the Northwest quadrant of the campus; and Helios East (Solar Energy Research Center), to be constructed within the perimeter of Lawrence Berkeley National Laboratory (LBNL). The proposal included a split of the \$70 million in State lease revenue bonds: \$40 million for Helios West and \$30 million for the Solar Energy Research Center. The State sold bonds for Helios West and that project is now complete.

The Solar Energy Research Center project (SERC) will involve construction of a 39,000 gross square foot (gsf) laboratory and office building to support solar energy research. The facility will house research devoted to nanoscale photovoltaic and solar-to-fuel energy systems. SERC is located in the center of LBNL and the project is currently under construction.

The Regents approved the budget and design for this project in January 2011. In January 2012, the project was ready to go out to bid, but the State did not include this project in a lease revenue bond sale. Therefore, in order for the project to go to bid and proceed to the construction phase, the Regents approved interim financing not to exceed \$30 million plus related interest expense and financing costs, in advance of expected State lease revenue bond funding.

#### *Change in Financing*

The item seeks approval to change the source of funding for the \$30 million of interim financing to external financing, to be funded with the University's general revenue bonds. The interim financing was approved in January 2012 in place of State lease revenue bonds, until a subsequent bond sale, in order for the project to move forward into construction. This project was never included in a lease revenue bond sale.

At the July 2013 meeting, the Regents authorized the University to restructure existing State Public Works Board (SPWB) debt issued on behalf of the University under the UC's general revenue bond credit. The retirement of SPWB bonds in October 2013 has necessitated the

request for change in the financing source for this project. The source of repayment of the \$30 million debt will be State appropriations.

***Project Schedule***

The project is currently in construction. The planned August 2014 scheduled completion has been revised to October 2014.

**ATTACHMENTS Below:**

Attachment 1: Budget

Attachment 2: Funding Plan

Attachment 3: Previous Actions

Attachment 4: LBNL Debt Service Funding Plan

Attachment 5: LBNL SERC and CRT Debt Service Plan

## ATTACHMENT 1

<b>Category</b>	<b>Budget October 2013</b>	<b>% of Total</b>
Site Clearance	\$ 1,331,000	2.3%
Construction	37,276,000	66.2%
Exterior Utilities	1,860,000	3.3%
Site Development	1,138,000	2.0%
Fees	3,920,000	6.9%
A&E / PP&C	2,340,000	4.1%
Surveys, Tests, Plans,	595,000	1.0 %
Special Items Excluding IDC	5,594,000	10.0%
IDC	600,000	0.9%
SUBTOTAL	54,654,000	
Contingency	1,746,000	3.1%
TOTAL P-W-C	56,400,000	100.0%
Group 2 & 3 Equipment	0	
<b>TOTAL PROJECT COST</b>	<b>\$56,400,000</b>	

### Project Statistics

October 2013

GSF	39,221
ASF	22,427
Efficiency Ratio ASF/GSF	0.57
Building Cost /GSF	\$950
Project Cost/GSF	\$1,438

**FUNDING PLAN  
SOLAR ENERGY RESEARCH CENTER**

	<b><u>Approved Jan 2012</u></b>	<b><u>Proposed Oct 2013</u></b>	<b><u>Change from Last Approved</u></b>
<b>Funding Sources</b>			
Interim Financing	\$30,000,000	-	(\$30,000,000)
External Financing <sup>1</sup>	\$14,400,000	\$14,400,000	-
External Financing <sup>2</sup>	-	\$30,000,000	\$30,000,000
Grants	\$10,000,000	\$10,000,000	-
Net Earned Performance Fees	-	\$ 2,000,000	\$2,000,000
<b>TOTAL</b>	<b>\$54,400,000</b>	<b>\$56,400,000</b>	<b>\$2,000,000</b>
<b>Funding Schedule</b>			
Preliminary Plans	\$ 7,400,000	\$ 7,400,000	-
Working Drawings	\$ 2,400,000	\$ 2,400,000	-
Construction	\$44,600,000	\$46,600,000	\$2,000,000
<b>TOTAL</b>	<b>\$54,400,000</b>	<b>\$56,400,000</b>	<b>\$2,000,000</b>

<sup>1</sup>Source of repayment for this external financing is gift endowment.

<sup>2</sup>Source of repayment for the external financing and related interest expense and financing costs is State appropriations.

**PREVIOUS ACTIONS**

- November 2006:** Approval of 2007-08 State Budget for Capital Improvements including Helios Energy Research Facility.
- March 2007:** Approval of project budget (\$159.4 million) for Helios Energy Research Facility including the Energy Biosciences Institute (EBI), with state lease revenue bonds (\$70 million) external financing (\$74.4 million) and interim financing (\$15 million), a larger project than approved in November 2006 to house additional programs, including the EBI.
- May 2008:** Approval of project budget (\$198,246,000) with State lease revenue bonds (\$70 million), external financing (\$113,246,000), interim financing (\$5 million) and standby financing (\$10 million); certification of Environmental Impact Report (EIR) and approval of design.
- November 2008:** Action under interim authority – EIR decertified and design approval rescinded.
- September 2009:** Amend previously approved Helios Energy Research Facility project to construct two separate facilities (west site and east site); reduction of external financing from \$113,246,000 to \$98,846,000; conversion of \$14.4 million from external financing to interim financing for gifts. Only further actions related to the Helios Energy Research Center East Site (Solar Energy Research Center) are listed below.
- January 2011:** Certification of the Solar Energy Research Center (SERC) EIR; approval of design of the SERC; approval to replace \$14.4 million of gifts with external financing.
- January 2012:** Interim financing of \$30 million plus related interest expense and financing costs.
- October 2013:** Budget augmentation of \$2 million to be paid from Lawrence Berkeley National Laboratory (LBNL) Net Earned Performance Fees to fund the completion of construction.

ATTACHMENT4

**LAWRENCE BERKELEY NATIONAL LABORATORY  
DEBT SERVICE FUNDING PLAN**

<b>LAWRENCE BERKELEY NATIONAL LABORATORY</b>	
Project Name	<b>Solar Energy Research Center</b>
Project ID	<b>12501</b>
Total Estimated Project Costs	<b>\$56,400,000</b>

<b>PROPOSED SOURCES OF FUNDING</b>	
External Financing	<b>\$44,400,000</b>
Standby Financing (PUC Grant in Hand \$10M)	<b>\$10,000,000</b>
Net Earned Performance Fees	<b>\$2,000,000</b>
<b>Total</b>	<b>\$56,400,000</b>

**DEBT SERVICE FUNDING PLAN**

	<b>Debt Service</b>	<b>Funding Plan</b>
<b>Annual Debt Service (\$44,000,000)</b>		
<b>1. \$14.4 million previously authorized taxable external financing at 7.25% for 30 years (from Gift Endowment)</b>	<b>\$1,189,000</b>	
<b>2. \$30.0 million proposed taxable external financing at 7.25% for 30 years (from State appropriations)</b>	<b>\$2,479,000</b>	<b>\$2,479,000</b>
<b>Gift Endowment Annual Avg. Payout Amount @ 4.75%</b>		<b>\$ 592,000</b>
<b>LBNL Facility Occupancy Charge (Avg. FCCM &amp; Depreciation)</b>		<b>\$ 597,000</b>
<b>Total</b>	<b>\$3,668,000</b>	<b>\$3,668,000</b>

*State Appropriations*

At the July 2013 meeting, the Regents authorized the University to restructure existing State Public Works Board (SPWB) debt issued on behalf of the University under the UC's general revenue bond credit. The retirement of SPWB bonds in October 2013 has necessitated the request for change in the financing for this project. The source of repayment of \$30 million debt would be future State appropriations.

*Gift Endowment*

A private gift of \$14.4 million has been pledged as a fund functioning as an endowment (FFE).

***LBNL Facility Occupancy Charge (Avg. FCCM & Depreciation)***

Facility Occupancy Charge to the extent DOE or other LBNL-funded programs occupy the facility. The Facility Occupancy Charge will be based on Facilities Capital Cost of Money (FCCM) calculation and depreciation in accordance with Contract 31 Clause H.4a and Federal Acquisition Regulation (FAR) 31.205-36 and 31.205-11.

***LBNL Net Earned Performance Fees***

The October 2013 \$2 million increase in project costs is funded entirely by from net earned performance fees. The primary purpose of this account is to fund costs for non-DOE funded buildings at the LBNL site.



**ATTACHMENT 5**

**LBNL SERC & CRT DEBT SERVICE PLAN**

*(Updated to reflect \$30 million change in external financing to be financed with University general revenue bonds)*

Year	CRT and SERC Occupancy fee (1)	Endowment Annual Total Return Payout Amount @ 4.75% (2)	Total Revenue	Total LBNL Debt Service (3)	Delta Revenue - Debt	Annual Unrestricted Funds (4)	Annual Unrestricted Funds towards CRT and SERC Debt Service	Remaining Unrestricted Fund Balance with STIP Interest Earnings
1	\$8,839,133	\$741,932	\$9,581,065	(\$11,099,450)	(\$1,518,385)	\$3,000,000	\$1,941,421	\$431,497
5	\$9,183,993	\$695,385	\$9,879,378	(\$11,099,450)	(\$1,220,072)	\$3,000,000	\$1,941,421	\$2,644,335
10	\$10,523,394	\$641,286	\$11,164,680	(\$11,099,450)	\$65,230	\$3,000,000	\$1,941,421	\$10,835,131
15	\$9,393,448	\$591,396	\$9,984,844	(\$11,099,450)	(\$1,114,606)	\$3,000,000	\$1,941,421	\$18,904,643
20	\$8,263,501	\$545,387	\$8,808,889	(\$11,099,450)	(\$2,290,561)	\$3,000,000	\$1,941,421	\$21,563,655
25	\$7,133,555	\$502,958	\$7,636,513	(\$11,099,450)	(\$3,462,937)	\$3,000,000	\$1,941,421	\$18,268,680
30	\$4,130,004	\$463,829	\$4,593,833	(\$11,099,450)	(\$6,505,617)	\$3,000,000	\$1,941,421	(\$0)
33	\$3,705,429	\$0	\$3,705,429	\$0	\$3,705,429	\$0	\$0	\$11,540,862
	\$261,228,010	\$17,772,243	\$279,000,253	(\$332,983,503)	(\$53,983,250)	\$90,000,000	\$58,242,622	

1. Occupancy fee is set by depreciation and cost of capital calculation known as FCCM. FCCM rate is set by the Treasury Secretary and historically tracks 5-year notes. Reimbursement assumes a slightly increasing FCCM rate over the life of the debt.
2. \$14.4M gift from Simons' Foundations.
3. LBNL Debt service for external financing for CRT (\$119.9M) and SERC (\$14.4M).
4. Net of operating expenses