



CITY OF LONG BEACH

R-20

DEPARTMENT OF COMMUNITY DEVELOPMENT

333 WEST OCEAN BOULEVARD • LONG BEACH, CALIFORNIA 90802

May 24, 2005

HONORABLE MAYOR AND CITY COUNCIL
City of Long Beach
California

RECOMMENDATION:

Authorize the City Manager to execute 1) the Power Purchase Agreement by and between the City of Long Beach and DeLiddo and Associates, Inc., a California corporation, DBA DEERS, and all related documents, for the installation of a solar power array and subsequent purchase of energy produced from the array at the Long Beach Convention and Entertainment Center located at 300 East Ocean Boulevard; and 2) the Applicant Assignment and Assumption Agreement and Consent to Assignment by and between a) the City of Long Beach, b) DeLiddo and Associates, Inc., a California corporation, DBA DEERS, and c) Southern California Edison, a California non-profit organization, and all other related documents, pertaining to Southern California Edison's Self-Generation Incentive Program. (District 2)

DISCUSSION

The City is the owner in trust of the Long Beach Convention and Entertainment Center (Facility) and contracts with SMG to operate the Facility under Management Agreement No. 21667. Under its agreement with the City, SMG is required to provide heating and air conditioning to both the Facility and the Hyatt Regency Hotel through a common Heating, Ventilation and Air Conditioning (HVAC) System, which is energized by electricity from Southern California Edison (SCE). The City pays SMG in advance on the first day of the month, the estimated costs to manage, operate, repair and maintain the HVAC System.

The Facility currently operates on an interruptible power grid and incurs substantial costs during peak demand periods, as well as severe penalties in the event of a power curtailment. The Facility consumes approximately 17 million Kilowatt Hours (kWh) annually. SCE charges an average of \$0.118 per kWh, composed of semi-fixed costs of \$0.04154 per kWh and variable costs of \$0.07646 per kWh. This translates to an annual SCE cost of approximately \$2,000,000 to provide electricity to the Facility.

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Self-Generation Incentive Program

On October 19, 2004, City Council authorized the City Manager to execute and submit application forms to SCE, as administrator of the California Public Utilities Commission's Self-Generation Incentive Program (SGIP) (Exhibit "A"). Subsequently, the City received a conditionally approved rebate reservation in an amount not to exceed \$3,561,246 for the installation of a Solar Photovoltaic System (PV System) at the Facility, which will convert sunlight into conventional electricity.

Capital Improvements

The following capital improvements required at the Facility will be addressed in part through the proposed alternative energy systems.

Central Plant

The Facility's central plant, which provides heating and air conditioning to both the Facility and the Hyatt Hotel, is facing significant replacement costs in the near term for major components of the mechanical system. Specifically, two of the five chillers are inoperative and the remaining chillers are between 14 and 25 years old, resulting in reduced efficiency and higher maintenance costs. In the event of mechanical failure, the Facility does not have excess cooling capacity on any of the remaining functioning chillers.

Roof Repairs

The Exhibition Hall roof has a remaining life of 5-6 years if certain repairs are implemented immediately; however, if a new surface membrane is installed, the life of the roof would be extended to 20 years.

Requests for Proposals

To effectively manage the abovementioned capital improvement costs, the City circulated three separate Requests for Proposals (RFP) for alternative energy systems. These systems included a PV System, a thermal energy storage system (TES System), and/or a co-generation system (Co-gen System). A brief description of the alternative energy systems is provided below:

- PV Systems convert sunlight to conventional electricity, running parallel to power supplied by SCE.
- TES Systems freeze water at night during low demand periods and thaw the ice during the day, thereby providing chilled water for air-conditioning at a significantly reduced cost.

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- Co-gen Systems consume one source of fuel (typically natural gas) and generate two or more sources of energy. As it relates to the Facility, the Co-gen System would generate electricity using natural gas-fired engines. In addition, the Co-gen System would also generate hot water and steam, some of which could be converted to cold water using an absorption chiller to supply the air conditioning system.

A total of 12 proposals were received: five for PV Systems, two for TES Systems and five for Co-gen systems.

PV System

All five proposals were reviewed by City staff and independent consultants. Based on the consultants' complete and in-depth analysis of the financial and engineering components, staff recommends the installation of a PV System up to 705 Kilowatts on the roof of the Exhibition Hall at the Facility. Of the five proposals received, DeLiddo and Associates, Inc., DBA DEERS (DEERS), is the recommended vendor to install, maintain, own and operate the PV System.

DEERS proposes to enter into a Power Purchase Agreement (Agreement) with the City. DEERS will provide the up-front capital to install and maintain the PV System, and for the next 20 years, will sell all of the electricity generated by the PV System to the City at a variable cost of \$0.0765 per kWh (increasing annually at a fixed inflation rate of 3 percent) or 10 percent less than the City's variable cost to purchase electricity from SCE, whichever rate is higher. SCE's current variable rate is \$0.0765 per kWh, which DEERS is using as the base rate. Non-variable costs will still be payable to SCE, as electricity will still be purchased in part from SCE. The PV System carries very little risk, yet offers excellent benefits to the City, including having a Convention Center identified as a "Green" Facility, thereby attracting conventions that are sensitive to "Green Power." The proposed PV System will be one of the largest such systems on the West Coast.

As a requirement of the PV System, DEERS will install a base membrane over the current 216,518-square foot Exhibition Hall roof in order to secure the entire area as watertight and ensure the PV System operates as efficiently as possible. Additionally, DEERS will perform preventative maintenance to keep the base membrane watertight and in good working order for the life of the PV System. DEERS will provide the up-front capital for the membrane at \$3.00 per square foot, or \$649,554. This cost will be reimbursed by the City and amortized over 20 years, for an annual payment of \$52,029. The preventative maintenance is \$.08 per square foot or \$17,251 annually, to be paid by the City.

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The following are the major terms and provisions of the Power Purchase Agreement:

- Term: 20 years, commencing on the date of commercial operation of the PV System. (Upon termination, the City shall have the option to purchase the PV System at Fair Market Value or to have DEERS remove the PV System at DEERS' cost.)
- System Cost: DEERS, at its sole cost and expense, shall design, install, own, and operate the PV System.
- Base Membrane: As a requirement of the PV System, DEERS shall install a base membrane over the existing Exhibition Hall roof, effectively providing a waterproof cover for the term of the Agreement. The total cost of the base membrane is \$649,554 the cost of which shall be reimbursed by the City and amortized over 20 years at an annual payment of \$52,029.
- Purchase of Energy: Upon commencement of commercial operation, DEERS shall sell all of the electricity generated by the PV System to the City at a variable cost of \$0.0765 per kWh (increasing annually at a fixed inflation rate of 3 percent) or 10 percent less than the City's variable cost to purchase electricity from SCE, whichever rate is higher.
- Option to Purchase: The City shall have the option to purchase the PV System at any time during the Term at Fair Market Value. In addition to Fair Market Value, the City shall also be required to pay a termination fee based upon a previously negotiated payment schedule, should termination be executed before the end of the Term.
- Maintenance and Warranties: DEERS shall perform all maintenance and maintain all warranties associated with the operation of the PV System and base membrane at a fixed annual cost of \$17,321. This cost will be paid by the City.

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- Option to Terminate: The City shall have the option to terminate with a 30-day notice and shall pay a termination fee to be made in accordance with the above-mentioned termination payment schedule. Should the City terminate for any reason other than default, end of Term or exercising the Option to Purchase, the City shall also pay a demobilization fee in the amount of \$500,000 (increasing yearly at a fixed inflation rate of 3 percent) for redeployment of the panels.

SGIP Rebate

Due to the constraints of choosing a solar vendor at the time of application for the SGIP rebate, the City was named both applicant and host customer. However, it is appropriate that the applicant should be the owner and operator of the PV System, namely DEERS, as they will bear the entire cost of the PV System estimated at approximately \$7 million. In order to amend the entities described in the rebate reservation, the City must execute a SGIP Applicant Assignment and Assumption Agreement and Consent to Assignment. The Assignment and Assumption Agreement will transfer all rights and responsibilities to DEERS as well as the final rebate amount. The rebate will assist with costs incurred for the purchase of materials and installation of the PV System without which the PV System is uneconomical. The current deadline to maintain the \$3.5M rebate reservation is May 30, 2005. In order to fulfill all Proof of Project Advancement requirements, the City and DEERS must execute a) the Power Purchase Agreement and b) the SGIP Applicant Assignment and Assumption Agreement and Consent to Assignment by May 30, 2005.

Thermal Energy Storage System

A 775-ton TES System is proposed for the Facility and will allow for the efficient management of cooling loads while shifting energy consumption periods from high cost peak periods to less expensive off-peak periods. The TES System will also address cooling capacity needs mentioned earlier in the Capital Improvements section of this letter. Staff anticipates providing City Council with a proposal for a TES System in the next few months.

This letter was reviewed by Deputy City Attorney J. Charles Parkin and Budget Management Officer David Wodynski on May 13, 2005.

TIMING CONSIDERATIONS

City Council action is requested on May 24, 2005, in order to expedite execution and submittal of all appropriate documents to SCE, as part of the SGIP Rebate Proof of Project Advancement, by the May 30, 2005 deadline.

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FISCAL IMPACT

Sufficient funds for the annual base membrane payment of \$52,029 and annual preventative maintenance payment of \$17,321 are appropriated in the Tidelands Fund (TF) and the Department of Community Development (CD).

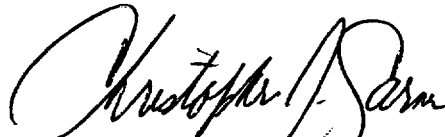
SUGGESTED ACTION

Approve recommendation.

Respectfully submitted,



CRAIG BECK
ACTING DIRECTOR OF
COMMUNITY DEVELOPMENT



CHRISTOPHER J. GARNER
DIRECTOR OF
LONG BEACH ENERGY

CB:CJG:MFT:lel
Attachment: Exhibit "A" Council Letter Dated October 19, 2004

APPROVED:



GERALD R. MILLER
CITY MANAGER