

CITY OF
HAYWARD
HEART OF THE BAY

**1000 kW Solar Photovoltaic
Renewable Energy Project at WPCF**

November 3, 2009

Public Works Department



Project Background

- The WPCF is the largest energy using entity owned by the City.
- Annual PG&E use is 6.3M kWh.
- Annual cost is approximately \$700,000.



Why Solar?

- Consistent with the adopted Climate Action Plan, the 1000 kW system will offset 956,000 lbs of CO₂ emissions each year.
- A 1000 kW solar-photovoltaic energy system at the WPCF can produce 22% of all of the plant's energy needs.
- A solar-photovoltaic energy system will produce no emissions and emit no greenhouse gases.



Options Considered for System Development and Funding

Private “Power Purchase Agreement” (PPA)

- Third party will own and fund the facility; City would buy all solar energy at agreed upon cost.

Public Ownership (turn-key)

- City would own the facility and contract for Operations & Maintenance (O&M)

Initially, staff considered PPAs more cost effective and issued an RFP for a PPA.



Initial Proposals

- Received five (5) proposals.
- Top three (3) were invited to interview.
- Meantime, staff became aware of a new CEC low interest loan.
- Staff determined that with the loan, and competitive pricing, Public ownership is a better option than a PPA.



Annual WPCF Energy Use (kWh)

Source	Presently	Solar & Co-generation
Solar	-0-	2,000,000
Co-generation	2,600,000	6,900,000
PG&E	6,300,000	-0-
TOTAL	8,900,000	8,900,000



Financial Incentives

- CEC, through Cal Solar Initiative (CSI), rebates \$0.26/kWh for first five years. (only \$0.15/kWh for PPAs)
- Significant tax write-off but only for PPAs.
- Low-interest loan of up to \$3,000,000 from CEC with a 1% interest rate.
- Environmental attributes also known as Renewable Energy Credits (RECs) will have a value in the future and remain with City under Public Ownership option



Recommended Firm

- Recommended Firm is REC Solar:
 - Construct a 1000 kW system.
 - Provide O&M for 20 years.
 - Provide engineering and construct system per applicable code standards.
 - Make interconnection with the WPCF high voltage power.



Solar Development Site Plan



SINGLE AXIS TRACKERS
 (2) TRACKER BLOCKS OF (1,680) MODULES EACH
 (2) TRACKER BLOCKS OF (896) MODULES EACH
 STRINGS OF (14) PER SUB-ARRAY
 (5,152) REC GROUP AE-225-US SOLAR MODULES TOTAL



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ELECTRICAL ENGINEER

STRUCTURAL ENGINEER

BID SUBMITTAL

PROJECT

CITY OF HAYWARD WPCF
 HAYWARD, CA

ISSUE DATE DESCRIPTION

SITE PLAN
 OVERALL SITE

PREPARED BY DATE CHECKED BY DATE

PV-1,1 SHEET 1 OF 2

(2) AE SOLARON 500KW INVERTERS
 (1) 2000A SWITCHBOARD

AC CONDUIT RUN, MV CABLE
 WITH PRECAST 36"x60"x36" CONCRETE HANDHOLES
 ROUTING PER PLAN PROVIDED IN RFP

INTERCONNECT TO 12KV SYSTEM

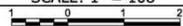
12KV/480V TRANSFORMER WITH INTEGRAL DISCONNECT
 SET ON PRE-CAST CONCRETE PAD



OVERALL SITE PLAN



SCALE: 1" = 108'



NOTE:
 PRELIMINARY DESIGN. ABOVE LAYOUT REPRESENTS LOCATIONS FOR 79 OF 96 TRACKERS PROPOSED. LOCATION OF REMAINING TRACKERS WILL BE SUBJECT TO MUTUALLY SUITABLE LOCATION WITHIN 12.63 AVAILABLE ACRES GIVEN IN RFP.

About REC Solar

- Large Company (US & Abroad).
- Currently appears sound and solvent.
- Will provide performance bond.
- If REC Solar were to go out of business after construction, City will have to find another firm to provide 20 year O&M contract.



CEQA Review

- Environmental Review pursuant to CEQA (California Environmental Quality Act):
 - 1) Initial Study, and Draft Mitigated Negative Declaration prepared
 - 2) Potential Significant Impacts during construction to Air Quality, Cultural Resources and Water Quality reduced to less than significant with standard construction and water quality mitigation measures
 - 3) Available for public review, no comments received

Recommended for Council's approval.



Fiscal & Economic Impact

- Total project cost \$5,533,260
(\$5,433,260 contract with REC Solar).
- CSI Estimated Rebate \$2,670,000.
- CEC low-interest loan \$3,000,000.
- Debt service for loan \$216,371 per year for 15 years.
- FY2010 CIP includes \$8,000,000 in Sewer Capital Improvement Fund.



Schedule

- Execute Agreement with REC Solar
 - November 2009
- Complete Design and begin Construction
 - April 2010
- Complete construction and begin operation
 - July 2010



Summary & Conclusion

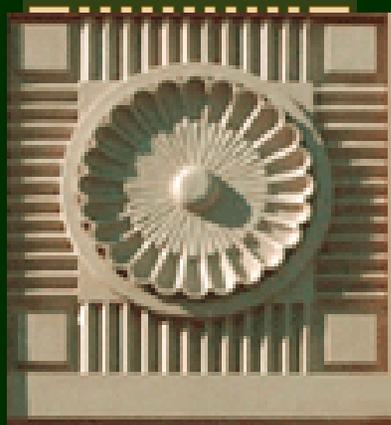
- This is a relatively large, green project that will help achieve Council's Climate Action Plan goals.
- Project is cost effective.
- Will complement the WPCF's other very green energy source (co-generation).



Recommendations

- Authorize City Manager to Negotiate and Execute contracts with REC Solar for a 1000kW Solar System
- Authorize City Manager to submit application to CEC for low-interest loan
- Approve Initial Study and Draft Mitigated Negative Declaration for the Project





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