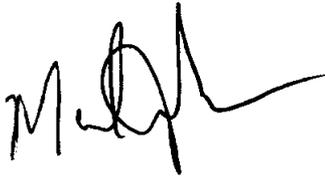


Golden Sierra Power
Mark Johnson, CEO
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(530) 621-2277
Mark@goldensierrapower.com



DOCKET 02-REN-1038
DATE _____
RECD. DEC 03 2004

BEFORE THE ENERGY COMMISSION OF THE STATE OF CALIFORNIA

**Implementation of Renewables Investment Plan
Legislation (Public Utilities Code Sections 381,
383.5, and 445; [SB 1038]**

Docket Number:
02-REN-1038

**Pilot Performance-Based Incentive Program for the Emerging Renewables Program
and other changes to the Emerging Renewables Program Guidebook**

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Comments on Pilot Performance-Based Incentive Program for the Emerging Renewables Program and other changes to the Emerging Renewables Program Guidebook

I. Rescind the Statement in CEC 1038 R1, Section 4

Golden Sierra Power Inc., request's the Energy Commission of the State of California to rescind the Statement in CEC 1038 R1, Section 4, that reads, *If the inverter rated out put is less than the system output (kW), the inverter rated output will be used to calculate the rebate.*

Golden Sierra Power Inc., recommends the following to be amended to CEC 1038 R1, Section 4, to read; *If the system output (kW) is greater than the inverter's rated output, yet meets manufacturer's recommended STC output so that the inverter may operate at manufacturers stated rate output during peak producing periods, then the higher of the two is used to calculate the incentive.*

Golden Sierra Power Inc. supports this recommended change with the following documentation and operating photovoltaic systems in Northern California.

Golden Sierra Power Inc. recommends Energy Commission follow the proposed System Design based on the following information. This system design is currently being used by Venezio's Winery, which is producing kWAC nameplate rating numbers unlike all other systems in the State of California. This system design was recently supported by

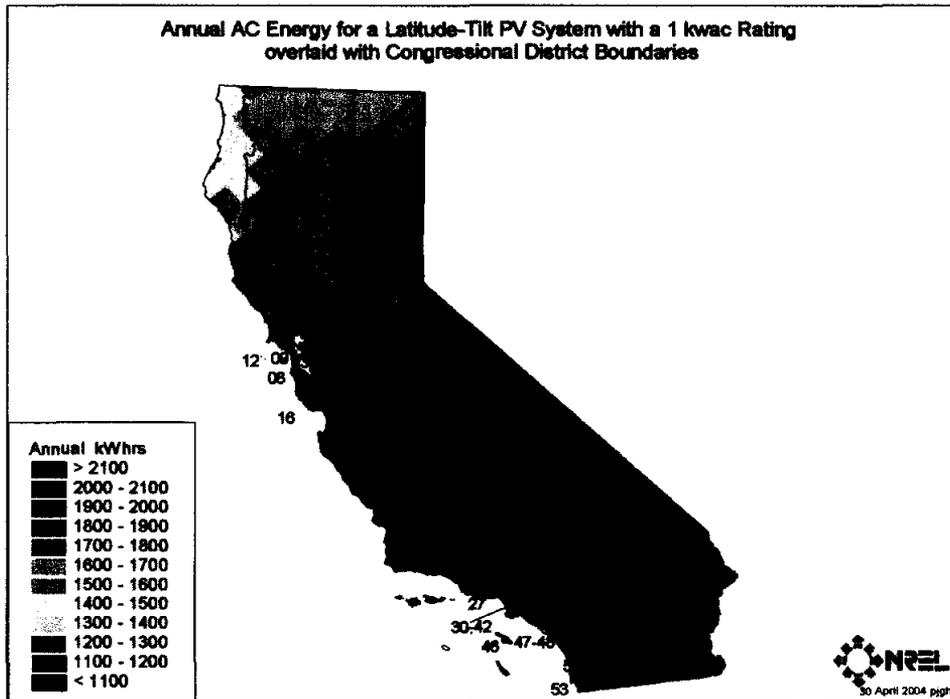
the California Energy Commission's Energy Efficiency Financing Program with a Pre-Approved Loan Amount based on the kWh production of this Design Model. (A copy of the pre approval email and amortization schedule).

The PTC sizing system currently be used to determine incentive amounts is not reflecting the size of kW to kWh that accurately. Thus, photovoltaic systems are under sized to receive maximum benefit of the incentive, yet do not have the capability to produce the PTC stated power generated. An example of this is Nine Gables Winery's 10,017 PTC watt rated system in Plymouth, CA. This system is comprised of 84 Shell Solar SQ 150 PC with a PTC rating of 132.5. The inverters are 4 Xantrex STXR2500 v5.0 with a 75% Load Efficiency Rating of 90%. The design of this system allowed Golden Sierra Power to run 20 panels (3,000 STC watts) through 3 of the 4 inverters. The 4th inverter has 24 panels (3,600 STC watts) attached; the manufacturer's recommended panel count for the Xantrex STXR2500 v5.0 with a 75% Load Efficiency Rating of 90%. Thus, Nine Gables Winery was provided a system that was unable to generate the amount of power needed to run the inverters at the capacity needed to generate the 10,017 watts. To achieve the power needed to achieve 10kW PTC power, the system would have had to had all 4 Xantrex inverters running 24 panels to generate the 3,600 STC watts to run the inverter at its stated capacity.

To support this premise, Golden Sierra Power has designed a PV System that will generate 70 kWAC of output as stated by the Inverter's power rating for the Mountain Creek Middle School in the Pioneer School District. To maximize the inverters' capacity, Golden Sierra Power is installing 83.8 PTC kW or 96.6 STC kW in solar panels to generate the output as stated by the inverter manufacturer. To receive the financing needed that would be based on the kWh output, Golden Sierra Power had to provide a performance guarantee to receive an Energy Efficiency Financing Loan for this program because it is provided the manufacturer's recommended power requirements needed to run the inverters at capacity during peak production times. Yet, others who receive lower loan amounts and accepting smaller STC power amounts yet still state power production

being the same as a system with the recommended STC amount, is receiving an equal incentive.

Golden Sierra Power has completed installation of a 10 kW PV system at Venezio's Winery in Pilot Hill, CA that will have 14,280 STC watts or 12,402 PTC watts in Shell SQ 85 P to run the inverter at full capacity. Reservation #16739 only allows Golden Sierra Power to receive \$38,000.00 incentive due to the present rule. For the amount of PTC power needed, the end user or PV provider will have to pay an additional \$9,129.24 to achieve stated inverter capacity. The current rule allows the CEC to grant and pay on a reservation for a 10,000-watt renewable energy generating system. As in the case with the above mentioned Nine Gables who also received the same rebate of \$38,000.00 for a 10,000-watt system yet received 16% less in power production based on the lower STC power amount. Today Venezio's System is producing the NREL's KWAC per kWh recommended.



II. Eliminate Permit Process prior to Application Submission and Reservation being issued.

Golden Sierra Power understands the purpose for having County Building Permit Departments issue permits prior to issuance of reservations but until there is consistency in standards throughout the solar industry and has been passed along to local agencies, the Energy Commission is asking another government agency to take action which can lead up to delays in processing and review. Therefore, it is requested that this process be eliminated prior to application and reservation being issued.

III. Performance-Based Incentive Analysis.

The amount proposed is substantially lower than the upcoming \$2.80 per kW. See Attachment of Cost Analysis of 3 & 5 year payouts for Performance-Based Incentives.

IV. Financing Based on Performance.

If Conventional Banks are to lend on the performance of renewable generating systems, then they need to have NO RISK in the estimated amount of production being generated.

V. Pilot Program

By using the EEF Program as a financing mechanism and its analysis process of system's generation capabilities, the Commission could run the Performance Based Pilot Program. Only entities whom qualify for the EEF Financing Program would qualify for participation. Additionally, dollars could be allocated to certain production regions allowing for monitoring based on location and design. Design standards for maximum production could be developed and set. Once a viable program is established, these programs could be bridged to the Commercial and Residential Markets while providing production data and design standards to achieve minimum or no risk to Conventional Lenders wanting to participate in financing renewable generating systems.

markgsp@sbcglobal.net

From: "Daryl Mills" <Dmills@energy.state.ca.us>
To: <mark@goldensierriapower.com>
Cc: "Daryl Mills" <Dmills@energy.state.ca.us>; "Joseph Wang" <Jwang@energy.state.ca.us>;
"Virginia Lew" <Vlew@energy.state.ca.us>
Sent: Wednesday, October 20, 2004 5:01 PM
Attach: Pioneer ECAA AMORTIZATION.xls
Subject: Estimated savings of project and Energy Commission Loan limitsfor Pioneer School District

Mark,

Based on the new information provided to us on this project we have calculated the maximum loan that the Commission can provide to the Pioneer USD. As we indicated to you, the Commission is temporarily out of loan funds but is expected to obtain more funding from a Revenue Bond sale early next year. This loan application must be submitted by the Pioneer USD. The maximum loan amount will allow the School District to repay the Energy Commission Loan using the energy savings (production) from the proposed project. Our maximum loan is \$223,146 for the project provided the project is submitted as described:

1. 552 175 Watt dc panels (96.6 kW stc) or 83.88 kW ac.
2. Approximately 50 kW will be pole mounted and tilted at a 25-30 degree angle facing south with the remained mounted on the roof of the school assuming a 22.5 degree pitch facing south.
3. Pioneer USD will obtain a net metering agreement from PG&E and will convert to a time-of-use rate schedule. (This schedule will provide maximum cost benefits to the school district from the completed project)
4. Loan is assumed to be at 4.5% interest rate with payments not to exceed 30 semi annual payments. (The Commission will be selling a revenue bond and this is the estimate of anticipated rate for future loans.)
5. Drawdown of the funds is assumed in the attached sample amortization schedule. (We have assumed a longer project completion schedule than proposed and meeting the proposed schedule will marginally improve the payback by reducing the interest accruing during construction).
6. Loan will be made on receipt and acceptance of a complete loan application at a regularly scheduled Commission Business meeting. However the loans' effective date is contingent upon the success of a future bond sale. No costs can be billed until Bond Sale date. Costs eligible for reimbursement must occur after the Energy Commission Loan approval date.
7. As a school project, it is assumed that all appropriate approvals will be obtained from the Division of the State Architect prior to construction.

12/3/04

Analysis of 3 & 5 year payouts for Performance-Based Incentives based on \$.30 to \$1.00 kWh.

3 Years		\$0.30	\$0.35	\$0.40	\$0.45	\$0.50	\$0.55	\$0.60	\$0.65	\$0.70	\$0.75	\$0.80	\$0.85	\$0.95	\$1.00
1 kWAC per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh
800	\$720.00	\$840.00	\$960.00	\$1,080.00	\$1,200.00	\$1,320.00	\$1,440.00	\$1,560.00	\$1,680.00	\$1,800.00	\$1,920.00	\$2,040.00	\$2,280.00	\$2,400.00	\$2,400.00
900	\$810.00	\$945.00	\$1,080.00	\$1,215.00	\$1,350.00	\$1,485.00	\$1,620.00	\$1,755.00	\$1,890.00	\$2,025.00	\$2,160.00	\$2,295.00	\$2,565.00	\$2,700.00	\$2,700.00
1,000	\$900.00	\$1,050.00	\$1,200.00	\$1,350.00	\$1,500.00	\$1,650.00	\$1,800.00	\$1,950.00	\$2,100.00	\$2,250.00	\$2,400.00	\$2,550.00	\$2,850.00	\$3,000.00	\$3,000.00
1,100	\$990.00	\$1,155.00	\$1,320.00	\$1,485.00	\$1,650.00	\$1,815.00	\$1,980.00	\$2,145.00	\$2,310.00	\$2,475.00	\$2,640.00	\$2,805.00	\$3,135.00	\$3,300.00	\$3,300.00
1,200	\$1,080.00	\$1,260.00	\$1,440.00	\$1,620.00	\$1,800.00	\$1,980.00	\$2,160.00	\$2,340.00	\$2,520.00	\$2,700.00	\$2,880.00	\$3,060.00	\$3,420.00	\$3,600.00	\$3,600.00
1,300	\$1,170.00	\$1,365.00	\$1,560.00	\$1,755.00	\$1,950.00	\$2,145.00	\$2,340.00	\$2,535.00	\$2,730.00	\$2,925.00	\$3,120.00	\$3,315.00	\$3,705.00	\$3,900.00	\$3,900.00
1,400	\$1,260.00	\$1,470.00	\$1,680.00	\$1,890.00	\$2,100.00	\$2,310.00	\$2,520.00	\$2,730.00	\$2,940.00	\$3,150.00	\$3,360.00	\$3,570.00	\$3,990.00	\$4,200.00	\$4,200.00
1,500	\$1,350.00	\$1,575.00	\$1,800.00	\$2,025.00	\$2,250.00	\$2,475.00	\$2,700.00	\$2,925.00	\$3,150.00	\$3,375.00	\$3,600.00	\$3,825.00	\$4,275.00	\$4,500.00	\$4,500.00
1,600	\$1,440.00	\$1,680.00	\$1,920.00	\$2,160.00	\$2,400.00	\$2,640.00	\$2,880.00	\$3,120.00	\$3,360.00	\$3,600.00	\$3,840.00	\$4,080.00	\$4,560.00	\$4,800.00	\$4,800.00
1,700	\$1,530.00	\$1,785.00	\$2,040.00	\$2,295.00	\$2,550.00	\$2,805.00	\$3,060.00	\$3,315.00	\$3,570.00	\$3,825.00	\$4,080.00	\$4,335.00	\$4,845.00	\$5,100.00	\$5,100.00
1,800	\$1,620.00	\$1,890.00	\$2,160.00	\$2,430.00	\$2,700.00	\$2,970.00	\$3,240.00	\$3,510.00	\$3,780.00	\$4,050.00	\$4,320.00	\$4,590.00	\$5,130.00	\$5,400.00	\$5,400.00
1,900	\$1,710.00	\$1,995.00	\$2,280.00	\$2,565.00	\$2,850.00	\$3,135.00	\$3,420.00	\$3,705.00	\$3,990.00	\$4,275.00	\$4,560.00	\$4,845.00	\$5,415.00	\$5,700.00	\$5,700.00
2,000	\$1,800.00	\$2,100.00	\$2,400.00	\$2,700.00	\$3,000.00	\$3,300.00	\$3,600.00	\$3,900.00	\$4,200.00	\$4,500.00	\$4,800.00	\$5,100.00	\$5,700.00	\$6,000.00	\$6,000.00
2,100	\$1,890.00	\$2,205.00	\$2,520.00	\$2,835.00	\$3,150.00	\$3,465.00	\$3,780.00	\$4,095.00	\$4,410.00	\$4,725.00	\$5,040.00	\$5,355.00	\$5,985.00	\$6,300.00	\$6,300.00
2,200	\$1,980.00	\$2,310.00	\$2,640.00	\$2,970.00	\$3,300.00	\$3,630.00	\$3,960.00	\$4,290.00	\$4,620.00	\$4,950.00	\$5,280.00	\$5,610.00	\$6,270.00	\$6,600.00	\$6,600.00
2,300	\$2,070.00	\$2,415.00	\$2,760.00	\$3,105.00	\$3,450.00	\$3,795.00	\$4,140.00	\$4,485.00	\$4,830.00	\$5,175.00	\$5,520.00	\$5,865.00	\$6,555.00	\$6,900.00	\$6,900.00
2,400	\$2,160.00	\$2,520.00	\$2,880.00	\$3,240.00	\$3,600.00	\$3,960.00	\$4,320.00	\$4,680.00	\$5,040.00	\$5,400.00	\$5,760.00	\$6,120.00	\$6,840.00	\$7,200.00	\$7,200.00
2,500	\$2,250.00	\$2,625.00	\$3,000.00	\$3,375.00	\$3,750.00	\$4,125.00	\$4,500.00	\$4,875.00	\$5,250.00	\$5,625.00	\$6,000.00	\$6,375.00	\$7,125.00	\$7,500.00	\$7,500.00
2,600	\$2,340.00	\$2,730.00	\$3,120.00	\$3,510.00	\$3,900.00	\$4,290.00	\$4,680.00	\$5,070.00	\$5,460.00	\$5,850.00	\$6,240.00	\$6,630.00	\$7,410.00	\$7,800.00	\$7,800.00
2,700	\$2,430.00	\$2,835.00	\$3,240.00	\$3,645.00	\$4,050.00	\$4,455.00	\$4,860.00	\$5,265.00	\$5,670.00	\$6,075.00	\$6,480.00	\$6,885.00	\$7,695.00	\$8,100.00	\$8,100.00
5 Years															
1 kWAC per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh	per kWh
800	\$1,200.00	\$1,400.00	\$1,600.00	\$1,800.00	\$2,000.00	\$2,200.00	\$2,400.00	\$2,600.00	\$2,800.00	\$3,000.00	\$3,200.00	\$3,400.00	\$3,800.00	\$4,000.00	\$4,000.00
900	\$1,350.00	\$1,575.00	\$1,800.00	\$2,025.00	\$2,250.00	\$2,475.00	\$2,700.00	\$2,925.00	\$3,150.00	\$3,375.00	\$3,600.00	\$3,825.00	\$4,275.00	\$4,500.00	\$4,500.00
1,000	\$1,500.00	\$1,750.00	\$2,000.00	\$2,250.00	\$2,500.00	\$2,750.00	\$3,000.00	\$3,250.00	\$3,500.00	\$3,750.00	\$4,000.00	\$4,250.00	\$4,750.00	\$5,000.00	\$5,000.00
1,100	\$1,650.00	\$1,925.00	\$2,200.00	\$2,475.00	\$2,750.00	\$3,025.00	\$3,300.00	\$3,575.00	\$3,850.00	\$4,125.00	\$4,400.00	\$4,675.00	\$5,225.00	\$5,500.00	\$5,500.00
1,200	\$1,800.00	\$2,100.00	\$2,400.00	\$2,700.00	\$3,000.00	\$3,300.00	\$3,600.00	\$3,900.00	\$4,200.00	\$4,500.00	\$4,800.00	\$5,100.00	\$5,700.00	\$6,000.00	\$6,000.00
1,300	\$1,950.00	\$2,275.00	\$2,600.00	\$2,925.00	\$3,250.00	\$3,575.00	\$3,900.00	\$4,225.00	\$4,550.00	\$4,875.00	\$5,200.00	\$5,525.00	\$6,175.00	\$6,500.00	\$6,500.00
1,400	\$2,100.00	\$2,450.00	\$2,800.00	\$3,150.00	\$3,500.00	\$3,850.00	\$4,200.00	\$4,550.00	\$4,900.00	\$5,250.00	\$5,600.00	\$5,950.00	\$6,650.00	\$7,000.00	\$7,000.00
1,500	\$2,250.00	\$2,625.00	\$3,000.00	\$3,375.00	\$3,750.00	\$4,125.00	\$4,500.00	\$4,875.00	\$5,250.00	\$5,625.00	\$6,000.00	\$6,375.00	\$7,125.00	\$7,500.00	\$7,500.00
1,600	\$2,400.00	\$2,800.00	\$3,200.00	\$3,600.00	\$4,000.00	\$4,400.00	\$4,800.00	\$5,200.00	\$5,600.00	\$6,000.00	\$6,400.00	\$6,800.00	\$7,600.00	\$8,000.00	\$8,000.00
1,700	\$2,550.00	\$2,975.00	\$3,400.00	\$3,825.00	\$4,250.00	\$4,675.00	\$5,100.00	\$5,525.00	\$5,950.00	\$6,375.00	\$6,800.00	\$7,225.00	\$8,075.00	\$8,500.00	\$8,500.00
1,800	\$2,700.00	\$3,150.00	\$3,600.00	\$4,050.00	\$4,500.00	\$4,950.00	\$5,400.00	\$5,850.00	\$6,300.00	\$6,750.00	\$7,200.00	\$7,650.00	\$8,550.00	\$9,000.00	\$9,000.00
1,900	\$2,850.00	\$3,325.00	\$3,800.00	\$4,275.00	\$4,750.00	\$5,225.00	\$5,700.00	\$6,175.00	\$6,650.00	\$7,125.00	\$7,600.00	\$8,075.00	\$9,025.00	\$9,500.00	\$9,500.00
2,000	\$3,000.00	\$3,500.00	\$4,000.00	\$4,500.00	\$5,000.00	\$5,500.00	\$6,000.00	\$6,500.00	\$7,000.00	\$7,500.00	\$8,000.00	\$8,500.00	\$9,500.00	\$10,000.00	\$10,000.00
2,100	\$3,150.00	\$3,675.00	\$4,200.00	\$4,725.00	\$5,250.00	\$5,775.00	\$6,300.00	\$6,825.00	\$7,350.00	\$7,875.00	\$8,400.00	\$8,925.00	\$9,975.00	\$10,500.00	\$10,500.00
2,200	\$3,300.00	\$3,850.00	\$4,400.00	\$4,950.00	\$5,500.00	\$6,050.00	\$6,600.00	\$7,150.00	\$7,700.00	\$8,250.00	\$8,800.00	\$9,350.00	\$10,450.00	\$11,000.00	\$11,000.00
2,300	\$3,450.00	\$4,025.00	\$4,600.00	\$5,175.00	\$5,750.00	\$6,325.00	\$6,900.00	\$7,475.00	\$8,050.00	\$8,625.00	\$9,200.00	\$9,775.00	\$10,925.00	\$11,500.00	\$11,500.00
2,400	\$3,600.00	\$4,200.00	\$4,800.00	\$5,400.00	\$6,000.00	\$6,600.00	\$7,200.00	\$7,800.00	\$8,400.00	\$9,000.00	\$9,600.00	\$10,200.00	\$11,400.00	\$12,000.00	\$12,000.00
2,500	\$3,750.00	\$4,375.00	\$5,000.00	\$5,625.00	\$6,250.00	\$6,875.00	\$7,500.00	\$8,125.00	\$8,750.00	\$9,375.00	\$10,000.00	\$10,625.00	\$11,875.00	\$12,500.00	\$12,500.00
2,600	\$3,900.00	\$4,550.00	\$5,200.00	\$5,850.00	\$6,500.00	\$7,150.00	\$7,800.00	\$8,450.00	\$9,100.00	\$9,750.00	\$10,400.00	\$11,050.00	\$12,350.00	\$13,000.00	\$13,000.00
2,700	\$4,050.00	\$4,725.00	\$5,400.00	\$6,075.00	\$6,750.00	\$7,425.00	\$8,100.00	\$8,775.00	\$9,450.00	\$10,125.00	\$10,800.00	\$11,475.00	\$12,825.00	\$13,500.00	\$13,500.00

From: <markgsp@sbcglobal.net>
To: <docket@energy.state.ca.us>
Date: Fri, Dec 3, 2004 11:01 AM
Subject: Docket No 02-REN-1038

Attach are comments for No 02-REN-1038

Sincerely,

Mark Johnson
CEO
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2872 B Mosquito Rd.
Placerville, CA 95667
530-621-2277

Document Management Form (Revised 4/29/04)

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02-REN-1038	
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