

*"Placerville, a unique historical past forging into a golden future."*

**City Manager's Report**  
**March 22, 2016 City Council Meeting**  
**Prepared by: Cleve Morris, City Manager**  
**Item #: 12.4**



**Subject:** Review and make recommendations for Solar Power locations City-Wide.

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**Discussion:** Johnson Controls, Inc. (JCI) will present options for solar power in various locations throughout the city. Council will be asked to make decisions on how to proceed at the following Council Meeting. No action will be taken at the workshop.

**Analysis:** Following is an analysis of the work JCI has done to date. A more detailed presentation will be made at the meeting.

A feasibility study was conducted in April 2015 to assess the potential for a solar array at the City's facilities. It has been determined a number of sites are suitable for a solar array and recommended to be included in the Johnson Controls Project Development Agreement which was approved in November 2015. Johnson Controls has evaluated a number of potential sites, benefits and possible constraints.

Two methods are generally recognized by the PUC and local Utility for feeding power into the grid through either Net Energy Metering (NEM) or Renewable Energy Self Generation Bill Credit Transfer (RES-BCT).

Net Energy Metering (NEM) is where the power that is produced on-site is theoretically used on site. Typically, a NEM installation will be sized to offset 80%-90% of the existing electrical usage. Array sizes can be up to 1.2 Megawatts (MW) of power production. Depending on the electrical tariff in place, the Utility Company then provide the PV power producer credit for both the "generation" and "distribution" costs on the electrical bill.

It is proposed that the City of Placerville install an NEM array at the Wastewater Treatment Plant (WWTP), Corporate Yard and the Downtown Area - City Hall, Parking Structure, Old City Hall and Town Hall.

At the WWTP, it is proposed to install an 825 kW DC NEM PV array on the north hill side, west of the service road. This array would produce 1,334,000 kWh of energy per year or about half of the current total amount. The PV panels would be mounted on the ground in a fixed position.

In addition to the PV array, it is also proposed to install battery storage at the site. The purpose of the battery storage would be to offset electrical demand charges by using the batteries to

provide power during “On-Peak” times when the PV array is producing less power than the plant is using. This would typically occur late in the afternoon before 6PM.

The installation of a 15 kW DC NEM PV array on “carport” style structures that will cover the materials area are suggested at the Corporate Yard. This array would produce 22,000 kWh of energy per year or about 80% of the current total amount.

In the Downtown Area; the City Hall, Parking Structure, Old City Hall and Town Hall, would be combined together in a “virtual” NEM array called a Net Meter Aggregation. It is proposed to install a 140 kW DC NEM PV array in one of two options:

- 70 kW would be installed on carports at the Fox Parking Lot and 70 kW of array would be installed on carports on the roof of the Parking Structure.
- 140 kW of array would be installed on carports on the roof of the Parking Structure.

This array would produce 244,000 kWh of energy per year or about 90% of the current total amount.

Renewable Energy Self Generation Bill Credit Transfer (RES-BCT) is the second method recognized by the PUC and local Utilities to allow self-generation of power. This approach uses a remote PV power generation location to produce power for sites that are too small or otherwise unable to support an “on-site” PV array. Depending on the electrical tariff in place, the Utility will give the PV power producer credit for only the “generation” costs but not the “distribution” costs on the electrical bill. This is because the Utility must transfer the generated power over their transmission lines.

The City could benefit from an RES-BCT at the Police Department and Benham Pool. The locations considered for the installation of the remote array are at the old Water Treatment Plant and the roof of the Parking Structure.

**Options:** There are several options available at this time regarding the solar analysis. Direction should be given to Staff and JCI on how to proceed. However, the final determination will not be made until all of the detailed analysis is complete.

**Budget:** None at this time. All costs for this study have already been budgeted. Costs for implementation will be approved at a later date.

**Recommendation:** Review and make recommendations for Solar Power locations City-Wide.



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**M. Cleve Morris, City Manager**