Distributed Energy Resource (DER) Program Details

Program Elements

1 Parking Lot Canopy, Ground Mount and Rooftop PV
2 Energy Efficiency
3 Electric Vehicle Charging Equipment
4 Energy Storage
5 Automated Demand Response

PV Systems	Energy Efficiency	EV Charging Infrastructure	Energy Storage	Automated Demand Response
Objective : With approval from the Board, the Department of Public Works anticipates that approximately 5 MW of solar capacity will be installed in FY18/19 generating 6,000,000 to 7,000,000 kWh of clean renewable energy per year with an associated annual GHG reduction of well over 1,440 metric tons CO_2.	**Objective:** With approval from the Board, the Department of Public Works anticipates that a zero interest loan of approximately $4,000,000 from PG&E, repayed through "on bill" guaranteed savings, will fund the installation of energy efficiency improvements operational in FY18/19. The improvements will be primarily lighting and HVAC systems and controls.	**Objective:** With approval from the Board, the Department of Public Works anticipates that the County will install 50 to 75 Level 2 EV chargers in FY18/19. Many of these chargers will be public facing and therefore usable by both the public and County employees.	**Objective:** With approval from the Board, the Department of Public Works anticipates that one or more of the facilities with PV interconnection applications will be a candidate site for a cost-effective energy storage system that can be financed under a power purchase or lease agreement in conjunction with PV. In addition, Public Works has initiated a study to determine technical and economic feasibility of developing the County's first microgrid at the Douglas Complex.	**Objective:** With approval from the Board, utilize PG&E's ADR incentive program to the extent possible. It is projected that the County could receive $270,000 in rebates for hardware that will allow sixty-four (64) County facilities to participate in PG&E ADR programs.
Background: The Board of Supervisors authorized Public Works to enter into Interconnection Applications with PG&E for eleven County-owned facilities. Upon BOS approval of the DER Plan, Public Works will use the RFQ process to select a solar developer(s).	**Background:** PG&E offers a zero interest loan program where the loan payment is equal to or lessor than the savings resulting from the energy efficiency improvements. Called on-bill financing (OBF), this program has evolved over the years to assure that the savings estimates are accurate and that savings persist througout the payment period. Upon approval of the DER plan by the BOS, Public Works will use the RFQ process to select an Energy Service Company (ESCo).	**Background:** A recent survey (February, 2018) of County employees with 1221 respondents provided the following information: 1) 126 of the participating County employees currently own electric vehicles 2) 473 indicated that they are interested in purchasing a plug-in electric or hybrid vehicle 3) 880 (75 % of respondents) support the installation of EV chargers at the facility where they work 4) 763 (66 % of respondents) stated that they would be more likely to purchase an electric vehicle if there were EV chargers at the workplace	**Background:** Energy Storage is fast becoming an economic alternative for "firming" intermittent renewable resources, increasing the resiliency of critical buildings, and offering a means of reducing onerous demand charges embedded in electric utility rates.	**Background:** In an effort to shed load during periods of capacity constraint PG&E has developed an ADR program. Rebates pay for controls hardware and system integration that allows load to be reduced in a County facility on demand.
Funding: The selected solar developer(s) will prepare proposals for the development of all or a subset of the 11 projects at no cost to the County. The proposals will be detailed and outline the cashflows and pros and cons of the financing options covered below.	**Funding:** The selected ESCOs will prepare investment grade energy audits of selected County facilities. These proposals are full engineering specifications with precise costs and guaranteed savings specified. The PG&E zero interest OBF loan funds the complete process.	**Funding:** PG&E's EV Charge Network Program whereby PG&E designs and installs EV Charging infrastructure (minimum of ten chargers) at no cost to the building owner. PG&E also provides a 25% rebate for the EV charger units. The PG&E program requires the County to enter into both a ten year easement and a contractual agreement. MCE will provide an additional $1,134/charge head reducing the County's cost to 1/4 of the hardware plus the installation of the unit.	**Funding:** See PV Systems funding.	**Funding:** PG&E covers up to 100% of the cost of equipment and installation.
Board of Supervisor input and action required: The Board will initially be asked for guidance and approval of the DER Plan. After the pro-forma engineering and cost proposals are submitted by the solar developer and reviewed by Public Works, Finance, Real Estate and the CAOs office, the preferred proposal will be forwarded to the Board for approval and subsequently for approval for the design/build project. Throughout the process, Public Works will work with the appropriate subcommitees to seek guidance and keep the Board appraised at progress and issues of importance.	**Board of Supervisor input and action required:** The Board will initially be asked for guidance and approval of the DER Plan. Then the Board will be asked for permission to contract with the selected ESCO, this will include several steps beginning with signing a Memorandum of Understanding pertaining to development of the investment grade audit (engineering design, specifications and cost and savings estimates). Then with Board approval, the County will enter into a design/build contract with the ESCO and the loan agreement with PG&E for the on-bill financing.	**Board of Supervisor input and action required:** The Board will initially be asked for guidance and approval of the DER Plan. The Board's consent will be requested to allow Public Works to sign an easement and a contractual agreement (Terms and Conditions Contract) for each of the participating County locations. The Board will also be asked to authorize funding for hardware (minus the utility rebates), installation and the ongoing annual cost of EV charger network and billing services.	**Board of Supervisor input and action required:** It is highly likely that the County's first storage project will be financed in conjunction with a solar PV project.	**Board of Supervisor input and action required:** Public Work is still analyzing the value of ADR, focussing on the benefits versus the potential inconvenience and discomfort of County staff and visitors. Upon completion of the study, if the ADR program has merit, Public Works will present to the appropriate sub-committee(s).
Funding Options: Municipalities typically use one of three options and/or a combination of options to fund the solar PV projects as follows: A **Power Purchase Agreement** (PPA) requires no cash up-front, 20-25 year commitment and lease agreement, results in net reduction of costs cost of PG&E electricity plus solar electricity is significantly less than PG&E electricity alone A **Tax Exempt Lease:** Also called a TEML (tax exempt municipal lease), TELP (tax exempt lease purchase) and Muni Lease: a capital lease using the equipment or real property as collateral. The leases typically have a 3.5-4.0% all-in effective interest rate, and come with up to 20-year terms. Tax exempt leases are relatively easy to arrange, compared to bonds and COPs. **Cash** funding is allocated from the County's general fund, typically from reserves. Since cash reserves are built up from taxpayer funding or sale of assets, cash purchasing financial performance is identical to cash grants or GO bond funding. * A more detailed report on PV project financing is attached.	**Funding Options:** Zero interest OBF is currently the best approach for energy efficiency projects. The California Energy Commission has a 1% loan for municipalities but the funds are limited and the queu is long. The selected ESCO will also be exploring the availability of other grant opportunities.	**Funding Options:** PG&E pays the lion's share of the costs by providing all of the "make ready" design and construction services. PG&E also pays for approximately 25% of the cost of the charge equipment. MCE pays for approximately 50% of the remaining cost of the charge equipment and the County will pay for the installation of the charge equipment and the ongoing EV charger network and billing services.		