

Energy Conservation-Efficiency- Generation (CEG) Plan

28 April 2015

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Presentation Agenda

- Concept and background
- Strategies for analyzing energy use and expenditures
- Conservation – Efficiency – Generation (CEG) Plan
- Financing options
- Alameda Municipal Power coordination
- Next steps

Concept and Background

- History
 - Partnership with Alameda Municipal Power (AMP), Community Action for a Sustainable Alameda (CASA), Go Green Program
- Solar Master Plan and analysis in September 2014
- Solar Master Plan appended to Facilities Master Plan in October 2014
- Meetings with CASA and AMP
- CASA/AMP joint meeting
- March board meeting – Board directed staff return with presentation and solar analysis

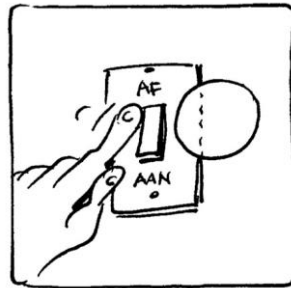
Strategies for Analysis

- Consider conservation first, efficiency second, and generation third in priorities.
- Calculate the return on investment of each proposed improvement.
- Accurately estimate construction cost for school project conditions including all soft costs.
- Consider non-cost issues in analysis as maintenance and operations and improvements to learning environment.



Conservation – Efficiency – Generation (CEG) Plan

- California Energy Commission advocates conservation and efficiency over generation.
- The goal of Proposition 39 is to improve energy efficiency and expand clean energy generation in schools.
- There are no cost changes to save energy consumption and reduce costs, such as turning off the lights in an empty room and shutting down the computer at the end of the day.



Conservation

- We can reduce unnecessary energy use through changes in user behavior.
- We can conduct thorough shutdowns of school facilities during breaks.
- We can structure opportunities for students to contribute to change in energy use behavior and understand energy through efforts at their own schools.

Efficiency

- We can conduct energy audits of existing buildings to identify potential savings.
- Typical improvements include:
 - Lighting fixture replacement
 - Mechanical system replacement, with regulation controls
 - Daylighting improvements
- We can evaluate potential energy savings vs. cost of improvements.
 - Required as part of Proposition 39 funding
- Some improvements are already planned as part of Measure I.

Generation

- Various sources of renewable energy
 - Solar, wind, geothermal, tidal, landfill gas, etc.
- Solar Feasibility Study needed
 - Size of the solar energy system needed
 - Factors include operational cost and cost effective efficiency improvements
 - Evaluate potential locations for solar installations, be they ground-mounted, elevated, or rooftop
 - Rooftop locations require structural and roofing analysis
 - Develop preliminary design and evaluation of estimated savings vs. project cost
 - Determine if a solar installation represents the best economic solution

Financing Options

- Cash
- Proposition 39 Funds
- Bond and other funding sources
- Performance contracts
- Power Purchase Agreements (PPA)
- Pros/Cons to each structure
- Need for financial advisor to recommend best option to meet the needs of AUSD and the final project selected



Cash

The District uses cash on hand to purchase equipment and the cost of the project using available reserves.

Pros

- District owns equipment
- Any savings in energy costs are recouped by District directly to the General Fund

Cons

- Depletes available reserves for unexpected one-time expenditures



Proposition 39 Funds

Proposition 39 was passed in 2012 and provides resources to school districts to fund “eligible projects to improve energy efficiency and expand clean energy generation in schools.”

Pros

- State funds with zero impact on District bond or general fund dollars
- Can combine with other funding to make projects meet requirements

Cons

- Limited State funding that has decreased over the past two years
- Strict rules for the financial payback of projects that restricts which projects qualify

Bond and Other Funding Sources

The District would use local Measure I bond funds or other financing structures, such as a California Energy Commission (CEC) loan, Certificate of Participation (COP), Clean Renewable Energy Bond (CREB), or Qualified Zone Academy Bond (QZAB).

Pros

- Utilize energy savings to repay loan or bond debt
- No program requirements for funding like Prop 39
- Can be combined with Prop 39 funds if project meets Prop 39 requirements

Cons

- Many competing needs for Measure I bond funds
- CEC loans, COP's, CREB's, QZAB's – all require repayment of initial debt
- Increases District's debt burden

Bond Funding – Clean Renewable Energy Bond (CREB)

A CREB is a Federal government bond program that provides 70% of the project cost. The District funds the remaining 30%. The June 3rd deadline is for Public Power applicants, not school districts.

Pros

- 70% of the project: No impact to general fund or current Measure I bond program
- Energy savings pay the bond debt; could pay the other 30% depending on size of project/savings

Cons

- Application process, with no end date for public schools
- 30% of the project funded by some other source
- Increases District's debt burden
- Bond financial advisor stated CREB's would not be first or second choice of funding for AUSD

Performance Contracts

The District contracts with a single entity to identify potential energy saving improvements, construct improvements, and finance construction costs.

Pros

- No bond funding required
- Single contract for design, build, and monitoring
- Guaranteed savings

Cons

- Energy savings used to finance construction; limited effect to General Fund
- Limited competition in bidding of construction contracts

Power Purchase Agreement (PPA)

The District contracts to lease roof space or land to a company to construct a solar system. The company sells the District electricity as a guaranteed rate below the projected market rate for 20-25 years.

Pros

- No impact on bond funding
- No capital investment required
- Electricity cost certainty

Cons

- Energy costs savings limited to a relatively small percentage of electricity costs
- Long-term contract
- Current AMP rate of 14 cents per kWh

Solar Project Examples

- American Canyon High School
- Mendocino K-8 School



American Canyon High School

- New HS Campus with 1 Megawatt solar system, ground and building mounted
- Electricity bill for the campus is <\$100 per year
- Without solar the electricity bill would be +/- \$280,000 per year



Mendocino K-8 School

- Installed new 120 kW solar project as part of a major modernization project in 2010
- Electricity cost was \$48,000 per year before solar and is <\$4,000 in FY2013-14



Coordination with Alameda Municipal Power (AMP)

- AMP energy sources
 - 66% of AMP's energy comes from renewable sources, with 98% carbon neutral.
 - AUSD rate is 14 cents per kWh.
- Net Energy Metering (NEM) current availability and future NEM Successor Plan.
- AMP confirmed if AUSD installs a solar system, AUSD will still be required to connect to AMP for distribution when production does not match demand.
- Any installation of solar in AUSD will reduce the AMP energy consumption and reduce energy use cost.
(Savings may not equal cost of project.)

CASA/AMP Joint Meeting

- Energy Audit and Solar Feasibility Study are required before best financing source determined.
- AUSD resolution to encourage AMP for Net Energy Metering (NEM) Successor Plan contains provisions for public entities and future solar projects.
- AUSD will include in the scope for the Solar Feasibility Study suggestions for ideas for the NEM Successor Plan.
- The next AMP Public Utilities Board meeting is May 18th.
- AMP will conduct a Town Hall meeting on June 16th to discuss the NEM Successor Plan.
- The goal is to return in August with a completed energy audit and a Solar Feasibility Study for Board direction on potential solar project approvals.

Next Steps

- Engage a consultant to conduct energy audit, resulting in a CEG Plan for AUSD.
- Hire an independent consultant to complete a Solar Feasibility Study.
- Seek out a financial advisor for selection of best financing structure for AUSD.
- Bring AUSD resolution to May 12th board meeting for Board approval regarding a NEM Successor Plan.



Questions/Comments/Queries
