Energy Expertise for Schools

GENERATION • STORAGE • EFFICIENCY
ZERO NET ENERGY • ELECTRIC VEHICLES
Sage Renewables is an independent energy consulting and project management firm based in San Rafael, California, that provides public schools with objective expertise to plan, implement and operate energy projects. Since 2005, Sage has evaluated and managed more than 300 MW of renewable generation, storage and efficiency projects.

Our work has saved California schools hundreds of millions of dollars, enabling districts to preserve and expand resources for students and teachers and provide enduring examples of environmental stewardship for their communities.

Through our work with over 65 California public school districts, we have refined processes to help schools mitigate project risk, facilitate decision-making, and manage procurement and implementation to optimize the value of energy projects. We believe in and offer a comprehensive, integrated project management approach, outlined on the next page, to ensure that projects meet schedule and goals at every phase.

We have a proven track record of successful project delivery that consistently exceeds our clients’ expectations. Sage is your district’s partner and advocate throughout planning, construction, and the operating life of your energy project.

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**About Sage**

SOLAR PV
BATTERY STORAGE
EFFICIENCY
PROP. 39
EV CHARGING & BUSES
ZERO NET ENERGY (ZNE)
COMMUNITY CHOICE
ENERGY MASTER PLANNING
ASSET MANAGEMENT
PPA VALUATION & BUYOUTS
PERFORMANCE OPTIMIZATION

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300+ MW ENERGY PROJECTS
300+ $ MILLION ENERGY SAVINGS

2009 FOUNDED
CALIFORNIA

100+ CLIENTS
PUBLIC + PRIVATE

CERTIFIED SMALL BUSINESS ENTERPRISE (SBE)
Our Approach

<table>
<thead>
<tr>
<th>FEASIBILITY &amp; FINANCING</th>
<th>Independent analysis of the alternatives for implementing a renewable energy project.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Technical and Financial Feasibility</td>
<td></td>
</tr>
<tr>
<td>• System Sizing, Siting, and Visualization</td>
<td></td>
</tr>
<tr>
<td>• Financing Alternatives</td>
<td></td>
</tr>
<tr>
<td>• Prop. 39 EEP</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PROCUREMENT</th>
<th>A transparent, efficient procurement process to ensure best value energy projects.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Technical Specifications</td>
<td></td>
</tr>
<tr>
<td>• RFQ/RFP Development &amp; Management</td>
<td></td>
</tr>
<tr>
<td>• Vendor Evaluation and Contracting</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMPLEMENTATION</th>
<th>Project management and technical expertise through design and construction.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Design Review, Permitting &amp; Interconnect</td>
<td></td>
</tr>
<tr>
<td>• Construction Support</td>
<td></td>
</tr>
<tr>
<td>• Commissioning (Cx) &amp; Verification</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PERFORMANCE MANAGEMENT</th>
<th>Asset management and optimization of generation, storage and efficiency systems.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• System Monitoring</td>
<td></td>
</tr>
<tr>
<td>• Performance Analysis</td>
<td></td>
</tr>
<tr>
<td>• Optimization</td>
<td></td>
</tr>
<tr>
<td>• PPA Valuation and Buyouts</td>
<td></td>
</tr>
</tbody>
</table>

Sage’s principals, veteran project managers and energy analysts work closely with your team to ensure a well-planned project tailored to your organization’s needs and budget. Our approach keeps a careful eye on schedule, permitting, utility tariffs, and production targets through procurement and construction. Sage’s expertise helps to streamline decision processes, clearly present alternatives, and provide a clear and accurate picture of economic and environmental outcomes.

Our firm utilizes both industry standard and proprietary tools to plan for a project that meets or exceeds financial and performance targets. Sage’s knowledge of the California solar market and controlled electronic bid management process ensure that your procurement process is efficient, transparent and fair. This guided, systematic approach to managing energy projects lowers costs, reduces risk, and maximizes savings.

Financial Acumen – Sage focuses heavily on project finance for clients. We have a deep understanding of the myriad finance mechanisms available to schools and public agencies, as well as the risks inherent to energy projects. Sage assists with evaluating and implementing cash-purchased projects and those financed by bonds, including CREBs and GO Bonds, securing Prop. 39 funding and other incentives, as well as third-party ownership models such as Power Purchase Agreements (PPAs) and leases. As a testament to our acumen, Sage’s financial expertise is sought by public agency financial advisors and legal teams to evaluate developer proposals, PPA agreements and early PPA buyouts, and other renewable energy contracts.

Independence and Integrity – Sage is scrupulously independent. We’re not associated with equipment manufacturers, vendors or contractors. We do not condition payment of our services on whether a project is implemented or not. Our independence guarantees our objectivity, and we align our incentives to put your organization’s interests first.
The Kern High School District (KHSD) began looking at solar option for their District in 2012. In 2014, KHSD hired Sage to implement a district-wide solar project. Beginning in early 2015, Sage ran a competitive RFP process, assisted in vendor selection and contracting, and is providing construction support, commissioning oversight and operational assistance for the multi-phase, multi-year project. Through Sage’s efforts, the District entered into a Power Purchase Agreement with SunPower Corporation to design and build 22 megawatts of solar power systems at 27 KHSD sites. According to data provided by The Solar Foundation, the agreement is the largest contracted commitment to solar power by any school district in the United States. After new Net Energy Metering criteria was announced to allow greater than 1 MW systems, Sage recommended increasing the project size by 2.5 MW for an additional $2.1 million in lifetime savings for the District. The District is expected to achieve more than $80 million in electricity cost savings over the next 25 years.
Working on an abbreviated schedule, Sage performed a feasibility analysis, secured CSI incentives for the District, and developed an RFP to solicit solar design-build-finance proposals in late 2014. After detailed review of proposals and contract negotiations in early 2015, the District awarded SolarCity the PPA contract to construct elevated shade structure and ground mount solar installations at 20 District sites. The project includes 1.3 MW of demand management at 5 of the sites, which received SGIP incentives. Sage continued to provide design review and technical assistance through construction. Follow-on services include enhanced commissioning and first year performance review. The project will generate an estimated $36 million in electricity cost savings over the life of the project, with carbon offsets in excess of 70,000 tons.
San Ramon Valley USD

In 2012, Sage was selected by the District to assess the operational and financial performance of existing solar PV systems installed at three high schools and one middle school. In 2015, the District engaged Sage for the second phase of its energy project - 3.5 MW of solar PV at 16 middle and elementary schools, financed by Clean Renewable Energy Bonds (CREBs). Sage developed conceptual designs for each site to meet District preferences and performance goals. Working closely with financial advisors to the District, Sage performed detailed modeling in support of the CREBs Bond applications and issuance. Sage subsequently managed the competitive procurement process for the PV systems, assisted with contract negotiations and provided design review, construction support, verification, and performance management.

SERVICES PROVIDED
- Operational / Performance Guarantee Analysis
- Feasibility Study
- Financial & Performance Modeling
- RFP / Vendor Selection
- Contract Negotiation
- Design Review
- Construction Support
- Commissioning Oversight
- Performance Management

REFERENCES
Daniel Hillman
Director, Facilities

Pittsburg Unified School District

The District originally signed a power purchase agreement (PPA) to install 2.3 MW of solar PV systems on 13 campuses. Sage was brought in by the District’s Financial Advisor to review the contract and proposed systems. With Sage’s input, the District decided to self-finance with COP funding. The new funding strategy, contract changes and system sizing recommended by Sage resulted in an estimated savings of more than $11M over the life of the project and allowed the District to increase the project size from 2.7 to 3.6 MW. Sage was subsequently retained by PUSD to act as the District’s independent commissioning agent. In addition, Sage provided production and financial modeling and contract review and negotiations for a proposed 60 kW fuel cell project and is assisting with Renewable Energy Certificates (RECs) management for the PV project.

SERVICES PROVIDED
- Financial & Performance Modeling
- RFP / Vendor Selection
- Contract Assistance & Negotiations
- Enhanced Commissioning
- Fuel Cell Analysis

REFERENCES
Enrique Palacios
Associate Superintendent
Dave Olson
Director, PFM (formerly of KNN Public Finance)
In June 2008, Milpitas Unified School District entered into a 3.4 MWp solar PV Power Purchase Agreement (PPA) with Bank of America (BoA) and Chevron Energy Solutions (CES). Through this agreement, BoA financed and owned PV generation facilities located on 14 District-owned sites, engineered, procured and constructed by CES. In July 2014, MUSD contracted with Sage to perform an evaluation of the agreement and the solar PV facilities, and to provide analysis and recommendations to help MUSD decide whether utilize the PPA’s Early Buyout Option with certificate of participation (COP) financing. Sage carefully evaluated the financial risks to the District of assuming ownership and operation, identified degraded PV panels and recommended maintenance measures Sage then assisted in negotiating the O&M contract. Based on Sage’s review and recommendations, the District voted to proceed with the $15.5 million buyout and took ownership of the PV facilities in January 2015. The District estimates it will save an additional $2 million over the life of the project.

SERVICES PROVIDED

• Financial & Performance Modeling
• Incentives Management
• RFP / Vendor Selection
• Contract Assistance & Negotiations
• Design Review & Construction Support
• Enhanced Commissioning

REFERENCES

Aaron Jobson
Principal, Quattrochi Kwok Architects

Milpitas USD

• 3.4 MW Solar PV PPA on 14 District Sites
• Early PPA Buyout in 2014, COP Funded
• Additional $2 Million Energy Savings Over 16 Years

Sage served as the energy consultant for the 1.4 MW solar PV project installed at eight District sites. Sage interfaced with the District and energy programs manager to scope a PV project taking into account planned 10% energy reduction through efficiency programs. Sage provided an investment grade feasibility study, CSI incentive management, financial and performance modeling for the preferred project, RFP management, bid evaluation, and design assistance. Additional scope included construction oversight and enhanced commissioning. The project was completed in early 2014.

SERVICES PROVIDED

• PPA Contract Review
• O&M Evaluation
• Early PPA Buyout Analysis

REFERENCES

Wendy Zhang
Asst. Superintendent, Business Services

Martinez USD

• 1.4 MW Solar PV - Ground Mount and Shade Structures on 8 District Sites
• $6M Capital Cost, GO/Reserve Bond Funded
• 25 Year O&M Agreement
• $22M Savings Over 25 Years
Our School Partners

SINCE 2009

SOLAR PV
BATTERY STORAGE
EFFICIENCY
PROP. 39
EV CHARGING
ZERO NET ENERGY (ZNE)
COMMUNITY CHOICE
ENERGY MASTER PLANNING
ASSET MANAGEMENT
EARLY PPA BUYOUT
PERFORMANCE OPTIMIZATION

Alameda USD
Albany USD
Anderson Valley USD
Arcata ESD
Banning USD
Bellevue USD
Benicia USD
Bonny Doon UESD
Brentwood USD
Cabrillo USD
Cloverdale USD
Contra Costa CCD
Fontana USD
Fort Bragg USD
Fremont USD
Gonzales USD
Kentfield SD
Keppel USD
Kern HSD
Lafayette SD
Larkspur-Corte Madera SD
Livermore Valley JUSD
Mark West USD
Martinez USD
Menlo Park CSD
Milpitas USD
Moreland SD
Morgan Hill USD
Mt. View Whisman SD
Novato USD
Oak Park USD

Palo Verde College
Panama-Buena Vista USD
Pittsburg USD
Placentia-Yorba Linda USD
Redwood City SD
Reeds Creek ESD
Rincon Valley USD
Riverside USD
Ross SD
San Bruno Park SD
San Carlos SD
San Diego USD
San Mateo CCCD
San Mateo UHSD
San Rafael CSD
San Ramon Valley USD
Santa Maria JUHSD
Saugus USD
Sequoia UHSD
St. Helena USD
Taft UHSD
Temecula Valley USD
Twin Hills USD
Union SD
Ventura CCCD
Ventura USD
Vista USD
West Sonoma County UHSD
Willits USD
William S. Hart UHSD
Maximize the value of your investment in solar.

Solar PV systems are a 25-year financial investment and most solar customers rarely have the time or resources to assess and interpret performance data to ensure their systems are meeting the expected financial returns. Sage's Solar Performance Management services arm you with the information you need to maximize the value of your investment by evaluating:

- Savings versus what would have been paid to the utility
- System performance versus performance targets
- Utility tariff review and optimization for increased savings
- Best practices to optimize the system to produce the most value
- Responsibilities of the solar developer or O&M contractor if the system is not performing as planned

**QUARTERLY PERFORMANCE REVIEWS**

Quarterly production performance review and system report, including production and financial optimization recommendations

**3RD PARTY O&M REPORT & PERFORMANCE AUDIT**

Annual audit and summary of Operations & Maintenance activities, including recommendations to maximize savings, and Performance Guarantee verification

**ANNUAL FINANCIAL & ENERGY PERFORMANCE REPORTING**

Annual performance evaluation, including both financial and energy production performance relative to benchmark estimates

**TARIFF OPTIMIZATION**

Annual review of available utility tariffs and recommendations for the optimal tariff selection
Testimonials

“I would recommend Sage to anyone looking for a cost effective and competent consultant to lead the process and keep things moving in the right direction. Their knowledge of the industry and relationships with the various vendors has added great value to our project.”

Steve Nebozuk, Senior Civil Engineer, Sacramento Regional County Sanitation District Policy and Planning Department

“Sage Renewables provided invaluable financial analysis for several of my school district clients which were embarking on major solar energy projects - one where the district was purchasing and installing a large, complex system on multiple sites and several where the districts were entering into Power Purchase Agreements. Sage provided the expert, neutral financial analysis so important to school districts when evaluating proposals from different energy companies. I was especially impressed with the breadth and depth of their financial expertise and also with Tom Williard’s understanding of the pressures (both internal and external) faced by school districts and their governing boards.”

Kathleen J. McKee, Partner, Fagen Friedman & Fulfrost, LLP
OUR TEAM

Tom Williard Principal
Tom has more than 15 years of experience as a professional energy consultant, with a focus on the development of technical and financial models that are now widely used to assess renewable energy systems and to predict potential energy generation and financial performance, serving as CEO since Sage’s inception. In 2013, Tom cofounded SoEd Benefit Corporation and wrote the project financial models used to structure PPA and lease financings that reduced the cost of renewable energy projects for public schools. In 2005, he cofounded Solmetric, a company that developed the SunEye, a high precision instrument now widely used in the solar industry to measure shade characteristics. In 2001 he cofounded System Design, a renewable energy system design and due diligence company. Prior to 2001, Tom worked in electronics engineering in senior hardware and software engineering positions and in engineering management. Tom served for seven years as an elected public school trustee in Marin County. As a Sage Principal, he provides financial, policy, and technical oversight for all company projects, and provides expert testimony for clients and industry groups.

David Williard, LEED AP Principal
David is a founder and Principal at Sage Renewables. He has over 22 years of experience working as a professional environmental consultant, with a focus on energy efficiency and renewable energy generation for the past fourteen years. David has managed all aspects of renewable energy projects, from planning and feasibility through implementation and operations for over 70 public and private clients. He has helped develop over 130 MW of renewable energy projects, including managing the largest solar PV project implemented by a school district in North America, at 27 sites in Kern County, CA. Prior to starting Sage, he founded Sustainergy Systems Consulting and Design, and was owner and Principal from 2005 to 2009. At Sustainergy, he and his brother, Tom, provided “cradle to cradle” energy consulting services to private companies and government agencies. David was a contributing author of the ICLEE Sonoma County Greenhouse Gas Emissions Inventory, in 2004, and produced the Climate Action Plans for all nine cities in the County in 2005-2006. His prior experience included work as a wilderness skills and environmental education instructor, and a wetland and biological field technician for the National Park Service. David has also taught courses on the fundamentals of renewable energy generation and system design at Sonoma State University and the Solar Living Institute.

Brent Johnson, P.E., LEED AP Principal
Brent has 15 years of experience as a Civil-Environmental Engineer, with 7 years in the renewable energy sector. During his time at Sage, Brent has developed custom financial and energy modeling tools and managed all aspects of renewable generation projects including feasibility studies, system design, project bids and construction, commissioning, and environmental credits management. Brent has worked on over 100MW of renewable projects encompassing technologies such as solar PV, storage, solar thermal, wind, and hydropower. His previous experience in the US and overseas has included design of large municipal facilities, construction management, operational support, and CEQA permitting. He has overseen all aspects of project development from concept to commissioned facilities, including serving as a construction manager on a complex, $170M multi-year linear project. Brent holds an M.S. in Civil-Environmental Engineering from UC Berkeley and currently serves as a director for his local water and fire district.

Ilan Fuss
Associate Principal
Cheryl Sicker
P.E., LEED AP
Sr. Project Manager
Asresh Guttikonda
Senior Associate
Dana Coe
Associate Principal
Scott Moore
Construction and Operations Manager
James Dobbs
Associate
Sameer Advani
Strategy Manager
INDEPENDENT ENERGY CONSULTING & PROJECT MANAGEMENT

FOR

SCHOOLS