Proposition 39: Investing in California's Future

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Introduction

On November 6, Californians cast a decisive vote in favor of Proposition 39, and in doing so directed significant new funds to energy efficiency and clean energy projects in the state. What one supportive San Diego blogger called "the most boring proposition on the 2012 ballot"[1] is actually a microcosm of many of the things our state values the most.

On the surface, it stands for good government. Proposition 39 used the ballot box to reverse a tax loophole given to out-of-state corporations, which was kept in place over several legislative sessions largely due to a California constitutional amendment requiring a two-thirds supermajority of the legislature to approve any tax increase. Proposition 39 took the issue to the voters, who were able to close the loophole with a simple majority vote.

But Proposition 39 does more than close a corporate tax loophole. It also provides the opportunity for our state to invest in two core values: improving our schools and transforming our energy system.

There is no question that Californians are concerned about the future of our schools—in a recent Public Policy Institute of California survey, 58 percent of likely voters identified K-12 public schools as the area of state spending they most wanted to protect from spending cuts. While half of Californians (52 percent) gave a grade of A (17 percent) or B (35 percent) to their local public schools,[2] they also indicated a strong desire to take action to make those schools more effective. This was borne out in November, when a strong majority of Californians voted to tax themselves to support public schools and other state programs through Proposition 30, and approved more than 100 parcel taxes and bond measures to fund public school facilities across the state.[3]

At the same time, California citizens are focused on making the state a clean energy leader. The evidence for this lies in the myriad programs we've passed to cap and price carbon emissions, set ambitious standards on renewable energy and efficiency, and conserve natural resources across the state. And this issue, too, was a factor in November: in polling done just after the election, the majority of "yes" voters on Proposition 39 revealed that they had supported the measure, which funnels dedicated revenues into energy efficiency and clean energy programs in the state, because it would expand the use of clean energy and "improve the energy efficiency of buildings across California."[4]

The legislature and the Governor's office are now in a position to focus the $550 million per year that the proposition directs toward energy efforts in a way that is most beneficial to the California voters who made those funds possible. As the dust settles and proposals begin to take shape, we strongly recommend that Proposition 39 funds be directed toward California's public schools.

California serves over 6.2 million students each year, one out of eight students in the nation. These students are housed in over 10,000 schools in which over 70 percent of school buildings are over 25 years old. One-third of classrooms in the state are held in portable or modular buildings, many of which are desperately in need of maintenance and energy retrofitting, and some of which are actually toxic because of the chemicals they contain.

As we discuss in this paper, investing in more efficient school infrastructure will allow our school districts to save millions on energy expenses and to redirect those savings to critical operations needs; create good jobs for Californians in the hard-hit construction and manufacturing sectors; and provide healthy learning environments for our students, school faculty, and staff.

California's School Buildings: The Challenge and the Opportunity

California's public school system offers a huge opportunity to move forward our state's triple goals of good education, good energy, and good government. Our school system is the largest in the country—in fact, one out of every eight K-12 students in the U.S. attends school in California. There are 10,569 public schools in the state (ranging from preschool through high school) and 1,068 charter schools, which are organized into 1,251 school districts. Combined, these schools house more than 6.2 million students.[5]

A growing population of students, and a constantly aging portfolio of school buildings, results in a continual need not

Figure 1: Public K-12 Schools in California

California Schools	Public School	Charter School	Total Schools
Elementary	5,775	483	6,258
Elementary-High Combination	375	220	595
High School	2,320	253	2,573
Intermediate/Middle/Junior High	1,347	112	1,459
Preschool	94		94
Ungraded	658		658
Grand Total	**10,569**	**1,068**	**11,637**

Source: Center for the Next Generation analysis of California Department of Education data files, 2012: http://www.cde.ca.gov/ds/si/ds/pubschls.asp

only for new schools and classrooms, but also to keep existing schools in good operation. In a 2012 report to the state Department of Education, the UC Berkeley Center for Cities and Schools estimated that California's K-12 schools need approximately $117 billion in all capital improvements over the next ten years. Though this figure includes addressing deferred maintenance, modernization, and new construction, the paper makes clear that at least half these funds are needed simply to repair or modernize existing schools.[6]

The UC Berkeley report emphasizes the critical importance of focusing state programs on existing school buildings, at least 70 percent of which are over 25 years old, rather than leaning heavily toward new construction. This is a key point. While California has passed $35 billion in statewide bond measures for school construction projects since 1998, these funds have primarily gone toward new school construction and "overcrowding relief" (replacing portables with new classrooms, or adding new permanent classrooms at other sites) rather than to modernization of existing school buildings (see Figure 2). But over the coming years, new student enrollment is expected to decline: California Department of Finance expects statewide net enrollment between 2012 and 2022 to increase by only 1.4 percent (87,000 students), which is down from an average of 100,000 new students per year in previous decades.[7]

Figure 2: California Statewide Bond Measures Broken Down by Major Spending Categories

	1998 School Bond Proposition	2002 School Bond Proposition	2004 School Bond Proposition	2006 School Bond Proposition	Total
Approved Bond Funding for K-12 Facilities (Million Dollars)	$6,700	$11,400	$10,000	$7,329	**$35,429**
New Construction	$2,900	$3,350	$4,960	$1,900	$13,110
Modernization	$2,100	$1,400	$2,250	$3,300	$9,050
Charter Schools	$0	$100	$300	$500	$900
Career Schools	$0	$0	$0	$500	$500
Overcrowding Relief	$0	$0	$0	$1,000	$1,000
High Performance Schools	$0	$0	$0	$100	$100
Joint Use	$0	$50	$50	$29	$129
Hardship	$1,000	$0	$0	$0	$1,000

Source: Center for the Next Generation analysis of school bond data from the California Department of General Services, Office of Public School Construction Bond Summary Table: http://www.bondaccountability.ca.gov/Bonds/

While there have been only four statewide bond measures passed in California in the last fifteen years, there have been countless local bond measures during that time. But relying on local bond financing to anchor a statewide school improvement project has serious drawbacks. These bonds, which are usually repaid through property tax assessments, raise real concerns about school finance equity across the state, as it is usually the wealthiest districts that are the most willing to incur additional costs to upgrade their schools.[8] Moreover, as the UC Berkeley study's author, Jeff Vincent, noted in one interview, those schools hardest hit by shrinking operational budgets have often been forced to raid their school maintenance funds just to keep teachers on staff and class sizes as a manageable level.[9]

Proposition 39 offers a chance to break energy efficiency projects out of the bond financing model, and to look seriously at investing in modernizing our existing school buildings across every district in California. We have an opportunity to be a leader in providing quality educational facilities and to do so in a way that is consistent with the state's goal of becoming a model for the country, if not the world, on saving energy.

The term "modernization" can mean anything from dealing with deferred maintenance, to performing capital improvements, to bringing schools in line with modern energy efficiency and building codes, to providing new clean energy sources such as rooftop solar power. These concepts can and should be integrated. To take just one example: as mentioned earlier, over 70 percent of all California school buildings are more than 25 years old. The equipment used in these buildings for heating, lighting, cooling and ventilation is outdated, inefficient, and often malfunctioning. That's a deferred maintenance problem, but it's also an energy efficiency problem, since inefficient HVAC is one of the primary causes of energy waste in large buildings. These schools are prime candidates for energy upgrades that will also deal with basic maintenance challenges.

Ultimately, because of the enormous need for modernization across all districts, California should ensure that every school construction project prioritizes reducing energy costs and making schools healthier for staff, teachers, and students. But the state is failing to do even the most basic modernization projects today. This is more of a budget issue than anything else: many districts must choose between building new classrooms to deal with overcrowding, addressing deferred maintenance, meeting Americans with Disability Act (ADA) requirements, or energy efficiency retrofits. For schools facing these choices, working with limited bond funds, energy has not often risen to the top of the agenda. The result, though, is that school facilities across the state continue to be run with aging heating, cooling, and electrical systems and out-of-date energy monitoring technology, which in some cases is actually harming the health of the people working and learning inside.

It's time to focus the state's attention on our huge portfolio of existing schools, and to make sure these buildings meet the basic goals of providing safe and healthy learning environments for our kids, saving dollars through smarter energy practices, and using our public buildings as a model for

lowering carbon emissions across the state. Retrofitting our schools would achieve these goals, and more—it would also provide good jobs for thousands of Californians.

California's Portable Classrooms

To cope with increasing fiscal stress and fluctuating school enrollment, California has constructed tens of thousands of portable classrooms. Nearly 30 percent of California's classrooms are now in portable buildings, which number nearly 85,000 units. Each year more than 4,000 new portable classrooms are constructed at an estimated price of between $25,000 and $47,000 each.

These "portables," as most Californians call them, have presented a good solution to dealing with overcrowding on limited facilities budgets. But they have hidden costs.

In a 2004 study conducted by the California Air Resource Board and the Department of Health Services, nearly all portable classrooms examined included toxic materials known to cause asthma and other long-term illnesses, including cancer, emphysema and neurological damage. In particular, these classrooms often contained formaldehyde beyond safe levels; lead, arsenic, and other known carcinogens were found in classroom floor dust; and ventilation was insufficient in these classrooms during 40 percent of school hours. Nearly 70 percent of teachers surveyed reported smelling mold or other musty odors in their classroom, and indicators of mold were visible in about one-third of classrooms. In 17 percent of all classrooms, there was visible evidence of water leakage, also an indicator of the presence of mold. The same study also found inadequate lighting in one-third of all portable classrooms.

While these classrooms present a unique set of environmental quality challenges, they also allow school administrators and local governments to accommodate ever-growing enrollment at a cost substantially lower than that of building new classrooms. They are also critical in cases where schools have to shut down classrooms because of earthquake damage or other unexpected events. Due to their undeniable cost-effectiveness and logistical advantages, portable classrooms are an integral part of California public school infrastructure.

So portables are here to stay, and they offer a huge opportunity for modernization and improvement. Despite the state of most existing portables, these classrooms can be clean and vibrant learning environments. Investments in new HVAC technologies and safe building materials that don't emit formaldehyde or other toxins could offer significant environmental quality improvements for up to two million students each year. If given the funding and opportunity, the state could also invest in healthy, livable, "green" portables, which can include rooftop solar or other low-carbon energy options at a cost between 15 and 30 percent more than traditional portables.

Retrofitting California Schools: A Win-Win-Win for the State

California's schools are in critical need of maintenance and capital improvements, and this need can and should be coupled with a focus on energy savings. But just how much energy would our schools save given the chance, and what would that mean for their budgets, for quality of life within the schools, and for jobs and economic development in their communities?

To answer this question, we first need to know how much energy our schools actually use. According to the California Energy Commission, California's K-12 schools spend an estimated $132 per student each year on energy expenses.[10] When totaled across California's school system—again, the largest in the country—that means our schools spend about $700 million on energy each year, roughly the equivalent of what they spend on books and supplies.[11] This represents a significant drain on school finances.

Making those same schools more energy efficient would significantly improve school budgets. According to the U.S. Environmental Protection agency's analysis of schools across the country, the average school retrofit reduces energy costs by approximately 30 percent.[12] This means that if every California school received a comprehensive energy efficiency retrofit, our school districts could open up at least 240 million per year for teachers, textbooks, and educational programs. At the individual school level, the EPA estimates that a comprehensive energy efficiency retrofit of an average 100,000 square foot school building could save that school between $10,000 and $16,000 per year.[13]

The precise amount each school can save through energy retrofits depends, of course, on the age of the school, what retrofits its administration decides to do, and how inefficient its current systems are. We have included some case studies of specific school retrofits in California on page 12, to show the range of projects and savings possible in this state.

But there are some general rules. The Collaborative for High Performance Schools (CHPS) has come up with a green building rating program specifically designed for schools, which addresses a range of issues including energy and water efficiency, site and materials selection, and indoor environmental quality. Their data on costs and payback periods in new school buildings is instructive on what it might cost to do comprehensive retrofits in existing school buildings. According to these data, a 100,000 sq. ft. school could be built to meet CHPS guidelines for an average additional cost of $175K for a K-6 school, $190K for a middle school, and 205K for a high school (see Figure 3 below). Average payback for each type of school is between 5 and 7 years.

It's important to note, however, that these costs are likely lower for new construction than for retrofitting an existing school. Energy efficiency retrofits often include deconstruction, and often require schools to deal with deferred maintenance and other repair issues at the same time that they are doing energy efficiency upgrades. So in our case studies on p. 14, for instance, readers will see initial investments much more on the order of several million dollars per school, rather than several hundred thousand dollars.

Figure 3: Typical Project Costs and Savings for New High Performance School Construction

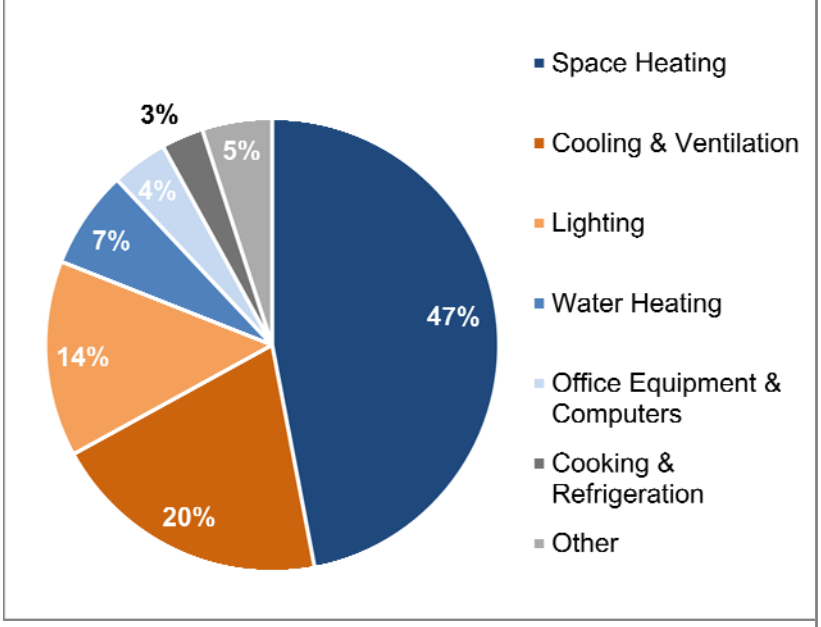
School Type	Hard Costs (per ft^2)	Soft Costs (per ft^2)	Total Initial Costs (per ft^2)	Annual Energy Costs for Noncompliant Designs (per ft^2)	Annual Energy Costs for Compliant Designs (per ft^2)	20 percent Annual Energy Cost Savings (per ft^2)	Simple Payback Period
K-6	$0.65	$1.10	$1.75	$1.31	$1.05	$0.26	6.7 years
7-8	$0.65	$1.25	$1.90	$1.61	$1.29	$0.32	5.9 years
9-12	$0.65	$1.40	$2.05	$1.75	$1.40	$0.35	5.9 years

This figure demonstrates how energy cost savings can offset the initial costs of compliance with CHPS high-performance school design criteria. For a 7th and 8th grade school, for example, an initial cost of $1.90 per square foot, which includes both hard costs (i.e., material and labor costs for design, construction, implementation, and O&M) and soft costs (e.g., fees for design, documentation, commissioning, and consulting), can be offset by annual energy cost savings of $0.32 over 5.9 years.

Source: U.S. Environmental Protection Agency, Energy Efficiency Programs in K-12 Schools: http://www.epa.gov/statelocalclimate/documents/pdf/k-12_guide.pdf

Again—and this cannot be overstated—it's all dependent on the size, age, and maintenance history of the individual school. But there are definitely some ways schools can prioritize retrofits to get the biggest value for the investment. Right now, the vast majority of all school energy expenses come from each building's heating, ventilation, and air conditioning systems (also known as HVAC). These expenses account for more than 65 percent of all school energy costs. Lighting is the next biggest category, but it's closely related to HVAC, because inefficient lighting can warm up school buildings during the hotter months, causing a greater need for air conditioning. Other smaller costs make up the rest (see figure 4).[14]

Figure 4: Average U.S. School Energy Consumption by End Use—2008



Source: Energy Information Administration, Table E1. Major Fuel Consumption (Btu) by End Use for Non-Mall Buildings, Commercial Buildings Energy Consumption Survey, 2003; updated 2008.
http://www.eia.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/detailed_tables_2003.html#consumexpen03

Because HVAC and lighting are the major energy expenses in nearly every school, especially the nearly three-quarters of our schools over 25 years old, it makes sense for energy efficiency investments to focus on those systems. Making these key retrofits, along with other targeted investments such as improving portables, installing solar water heating systems (which is technically considered an energy efficiency measure as it reduces natural gas use), and incorporating behavioral changes in turning off lights and computers, could save our schools even more than 30 percent on their energy bills. Those savings can be immediately translated into increased operational budgets, from which schools pay their teachers and staff, buy their books and computers, and generally invest in their primary job: educating our kids.

Promoting Economic and Environmental Health for all Californians

Saving energy, and putting those savings into operations, is a high priority for California school districts, and it's a goal that is easily achieved through comprehensive energy retrofits, including renewable energy installations where appropriate.

But that's just the beginning. Retrofitting California's schools has other major co-benefits. Improving school facilities has a direct and positive impact on the quality of life for those working and learning in those buildings, and can actually result in better student test scores and teacher retention. In addition, each school retrofit project translates into real jobs.

Jobs

One of the primary reasons voters supported Proposition 39 on the November 2012 ballot was because of the potential for funds invested in energy efficiency and clean energy projects to create jobs, especially in the hard-hit construction sector. Focusing these projects on our public schools will do just that, and create economic value for the surrounding communities as well.

In general, each million dollars invested into construction projects in the U.S. creates about 20 jobs, including direct jobs (the on-site construction jobs), indirect jobs (jobs in the supply chain, e.g. manufacturers and transportation workers), and induced jobs (jobs created in the community as a result of increased economic activity caused by the construction projects, e.g., additional workers put on staff at the restaurants nearest the construction site). That means that investing $550 million per year in Proposition 39 funds into retrofitting California schools, for example, could generate 11,000 jobs per year associated with the projects alone.

But that's not all. Among all construction projects, energy efficiency projects are particularly good job creators. Doing an energy efficiency retrofit of a public school will add auditor and evaluator jobs, for instance, which would not be part of a new construction projects. In addition, these projects will result in actual energy savings that can be translated into dollars, reallocated into the school's budget, and used to create or retain permanent teacher or administration jobs.[15]

Comprehensive energy efficiency retrofits that include renewable energy components can increase these numbers even more. On average, solar, wind, and biomass projects create about 10 to 12 jobs per million dollars of investment. [16] So adding a solar component to a school retrofit would increase the total jobs at the retrofit site, as well as jobs in the renewable energy supply chain.

The proof is in the history of California school construction projects. As Kathleen Moore, Director of the state's School Facilities Planning Division, testified before Congress in 2008, the two statewide bond measures that passed in 2004 and 2006 resulted in about $10 billion in investments in California schools. These funds created more than 175,000 direct jobs, and generated about $20 billion in economic benefits to the state, through indirect jobs in related sectors such as construction materials, manufacturing, transportation, and retail services catering to construction workers during the life of the projects. [17] And these projects were mainly focused on new construction. Imagine the

energy savings, and the resulting funding for even more jobs within California schools, if the bonds had focused primarily on making existing schools more energy efficient.

The majority of the jobs that will be created in school retrofit projects are in the construction and manufacturing sectors, which have been particularly hard hit by the recent recession. [18] At the height of the recession, in 2010, California's construction unemployment spiked to 27 percent. [19] It has gone down in the past year or so, but the sector is still reeling. The state's manufacturing sector, still the largest in the country, has lost jobs steadily since 2001, with a strong decline during the height of the recession. [20] Increasing investments in energy efficiency and renewable energy in California's schools would give a shot in the arm to the hundreds of clean energy and efficiency product manufacturers in the state.[21]

We have a number of case studies on p. 14 below that demonstrate the real-world value of investing dollars into retrofitting and improving energy use in California's schools.

Workforce Training

Creating jobs is one thing; ensuring that a qualified workforce exists to take on those jobs is another. Jobs in the construction and manufacturing trades require concrete and specialized skills, especially on large projects such as school building retrofits. Fortunately for California, the state's labor unions, community colleges, and various non-profit organizations have been leaders in crafting apprenticeship and training programs to meet these needs. One example that's been held up across the nation as a "best practice" of workforce training on energy efficiency retrofits is the California Advanced Lighting Controls Training Program (CALCTP).[22] CALCTP, which was established through a collaboration among utilities, labor unions, industry partners and the University of California, provides a certification for contractors who are proficient in the proper installation of advanced lighting controls.

Other programs, some spurred by training dollars included in the American Reinvestment and Recovery Act (ARRA), exist across California, in many cases housed at public community colleges. Some of these are targeted directly at engaging youth in careers in the clean energy industries; for instance, several of the state's Investor Owned Utilities (IOUs) work directly with the California Partnership Academies, which operate as "schools within a school" at many public high schools, integrating career technical education with academic education.[23] Non-profit organizations such as YouthBuild[24] also offer training for young Californians who are focused on gathering actual technical and career skills along with their academic educations.

Because the voters put Proposition 39 funds into circulation, it is particularly important that the funding be used in a way that maximizes the impact of energy efficiency projects in our schools, and the economic benefits and jobs that these projects will produce. As such, these funds should be attached tos strong labor standards, skill development for those workers tasked with maintaining new energy systems, and ideally avenues into the construction job market for high-unemployment populations such as youth and returning veterans.

School Facilities, Health, and Academic Performance

So far we've focused on the energy savings and jobs benefits of doing school retrofits in California. But there's a whole other set of benefits that accrue to the teachers, staff, and students who spend the better part of each day in these school buildings.

In study after study, schools that are low-carbon and highly energy efficient—otherwise known as "high-performance schools" —have been shown to produce higher test scores, increase average daily attendance, reduce operating costs, increase teacher retention and satisfaction, and reduce negative environmental impacts. Students in well-designed and properly maintained school facilities consistently perform between 5 to 17 percentage points better than their peers in sub-standard facilities, even when controlling for socio-economic status.[25]

Unfortunately, as we've discussed, many California schools have been forced to delay facilities maintenance and improvements in order to adhere to strictly limited budgets. As a result, classrooms across the state have insufficient ventilation and lighting, disruptive noise levels, and harmful levels of toxins and irritants that not only impede the learning process but threaten the long-term well-being of millions of students. This is particularly true for the 30 percent of all classrooms that are housed in portable buildings, or "portables."

In 2000, poor school conditions in San Francisco County prompted a class-action lawsuit against the State of California, the State Department of Education and other education agencies. More than 100 plaintiffs in *Williams v. State of California* alleged that the State had failed to provide, among other things, safe and decent school facilities. The case resulted in settlements totaling nearly $1 billion, the vast majority of which was allocated for facility improvements in schools throughout the state.[26] While the Williams settlement provided much-needed funds for school facility improvements and strengthened school accountability standards, many of California's schools remain decades out of date and in desperate need of capital improvement.

Targeted retrofits can help solve this problem. In particular, improvements in heating, ventilation and cooling (HVAC) systems and lighting systems, which together account for more than two-thirds of all school-related energy expenditures, can directly impact student and teacher performance and health.

Asthma and Indoor Air Quality

Asthma is the leading cause of school absenteeism. In California, students with asthma missed at least 1.47 million school days in 2007, with an average of 5 days missed for each student for asthma-related conditions.[27] Statewide, nearly 13 percent of school children have asthma, and in some counties, asthma rates surpass 30%.

This has an impact on our school budgets, which are calibrated in part based on the number of days each student attends school each year. Our schools lose at least $30 million in lost revenue due to asthma-related absences each year. Moreover, student academic performance is closely related to indoor air quality in the classroom, meaning that schools with high asthma rates among their students are likely to show lower test scores overall.[28]

A 2004 study by the California Air Resources Board, looking specifically at the state's many portable classrooms, found that ventilation in these classrooms was insufficient during 40 percent of school hours, and that 10 percent of classrooms had severely insufficient ventilation, with carbon dioxide levels at more than twice accepted standards.[29]

Improving indoor air quality standards by retrofitting HVAC systems in school facilities would result in fewer lost school days, increasing school budgets and giving students more opportunities to succeed. According to a series of studies by the Lawrence Berkeley National Laboratory, "Increases of 5 percent to 10 percent in aspects of student performance may be associated with doubling the ventilation rate when rates are at or below minimum ventilation standards."[30] LBNL found that estimated annual energy and implementation costs of HVAC quality improvements that could eliminate millions of school absences were "very small relative to the estimated benefits."[31] Furthermore, preventative maintenance and regular improvements to HVAC equipment have been shown to provide significant cost savings. An analysis of HVAC maintenance at public schools in Washington, DC, demonstrated that the "required cost of repair after a 22 year period can be 5 to 30 times higher than the cumulative cost of annual maintenance needed to preserve IAQ throughout that period."[32]

Lighting and Academic Performance

Lighting is an essential component to quality learning environments and among the primary sources of school-related energy expenditures, behind only HVAC operation (see figure 4 on p. 9). Adequate lighting makes both teaching and learning easier: The visual components of classroom learning require a minimum level of light, defined by the Illuminating Engineering Society of North America (IESNA) as between 30 and 50 footcandles at desk level, depending upon the task at hand.[33] According to a 2004 California Air Resources Board study, lighting was inadequate in one third of all California classrooms examined, and was particularly poor in portable classrooms. A study conducted by the Heschong Mahone Group found that daylighting improved student performance on standardized tests by as much as 12 percent over traditionally lit classrooms.[34]

The upshot: it's in the entire state's best interest to invest in making our school facilities, which house the next generation of Californians, as healthy and conducive to good learning as possible. Student attendance rates increase when communities invest in quality school facilities; student test scores are better; and these schools can attract and retain talented, high-quality teachers and support staff. Adopting energy efficiency and sustainable design as cornerstones in school facility construction and maintenance would free scarce resources for investment in the best possible faculty and staff to promote world-class education.

The Real Deal: Case Studies from School Retrofit Projects

The following case studies of school retrofit projects across California make clear that these projects can save real dollars, create real jobs, and dramatically increase the quality of our state's public schools.

Antelope Valley Union High School District serves nearly 26,000 students in northern Los Angeles County. AVUHSD did comprehensive energy audits in eight schools, and then used a low-interest $2 million dollar loan provided by the California Energy Commission to install new lighting controls systems and replace HVAC equipment in those schools, saving more than $300,000 annually. The district recovered its project investment in just 6.5 years, resulting in an eight percent return on investment.[35] In 2011, the district installed a 9,600 KW solar energy system, which at the time of installation was the largest such project in the nation. AVUHSD expects to save over $40 million from energy efficiency retrofits within 20 years, and to reduce its greenhouse gas footprint by over 250,000 metric tons in that same period.

San Diego Unified School District (SDUSD) is the second largest district in California (and the eighth largest in the country). The district educates nearly 133,000 students in more than 200 schools, 7 out of 10 of which are Energy Star rated. Energy efficiency measures have helped SDUSD save $12 million per year; more than $90 million in cumulative savings since retrofits were completed 12 years ago.

Recent retrofits in **Sacramento City Unified School District** returned an average savings of $53,000 per school every year, and required less than seven years to recuperate the total initial investment.[36]

Fremont Unified School District has implemented behavioral adjustments, made HVAC modifications and installed energy management systems, saving $5 million in energy costs over the first three years. The district was recognized in 2004 with the US EPA's Energy Star—Excellence in Energy Management Award.[37]

Washington Elementary, in the Berkeley Unified School District, generates 70 percent of its electricity needs from a 103 KW rooftop solar photovoltaic system. The school also insulated its roof and repainted with reflective white paint to avoid solar absorption and keep the roof cool. The project was primarily funded with revenue from local bond measures.

Conclusion

Proposition 39 represents an exciting opportunity for the state legislature to move forward on three issues dear to Californians: restoring our faith that government can work in the best interest of California residents; investing in our public schools; and continuing our state's tradition of enacting best-in-class energy and environmental programs that save energy dollars, lower carbon emissions, and improve quality of life for everyone in the state.

By investing Proposition 39 dollars into energy efficiency retrofits and clean energy projects in our public schools, Sacramento will give these schools a chance to invest in energy saving programs that will actually increase school budgets. Saving what are currently wasted energy dollars, and moving these savings into operations funds, will lift up schools across the state. At the same time, these projects will create new on-site construction jobs, provide new markets for California-made energy efficiency and renewable energy products and services, and transform our classrooms from health hazards to laboratories of learning.

Important questions remain about how exactly to implement Proposition 39 to give the best return to California taxpayers. Even if lawmakers focus the funds on school energy projects, there is a real need to better understand:

- How to define "energy efficiency"; whether to expand the definition to include renewable energy elements; and how to prioritize energy retrofits and/or clean energy projects to get the best returns;
- How to ensure that disadvantaged school districts, whose schools suffer from deferred maintenance along with energy inefficiency, can best access and use these funds; and
- Whether the funds should be spent through direct grants or whether at least some portion should be leveraged through private/public partnerships.

There are also key questions about how to provide the best education, technical assistance, worker standards, and evaluation to ensure these schools know about these funds, know how to access them, and have the best qualified workers on-site—and that Californians can see the proof at the end of the day that these programs really worked.

Questions remain, but one thing is clear: California voters passed Proposition 39 to help restore the state to fiscal and environmental sanity. Let's start making that dream a reality.

Endnotes

[1] John P. Anderson, "Proposition 39 – Why You Should Vote Yes on the Most Boring Proposition on the 2012 Ballot," *The San Diego Free Press,* September 6, 2012. Available at http://sandiegofreepress.org/2012/09/proposition-39-why-you-should-vote-yes-on-the-most-boring-proposition-on-the-2012-ballot/

[2] Mark Baldassare and others, "Californians & Education," (San Francisco: Public Policy Institute of California, 2012). Available at http://www.ppic.org/content/pubs/survey/S_412MBS.pdf

[3] "Locally and statewide, California voters supported public schools on Nov. 6," available ahttp://www.csba.org/en/NewsAndMedia/Publications/CASchoolNews/2012/October/ElectronicOnly/2012_1114_bonds.aspx

[4] Post-election polling on Proposition 39 done by Fairbank, Maslin, Maullin, Metz & Associates (FM3).

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