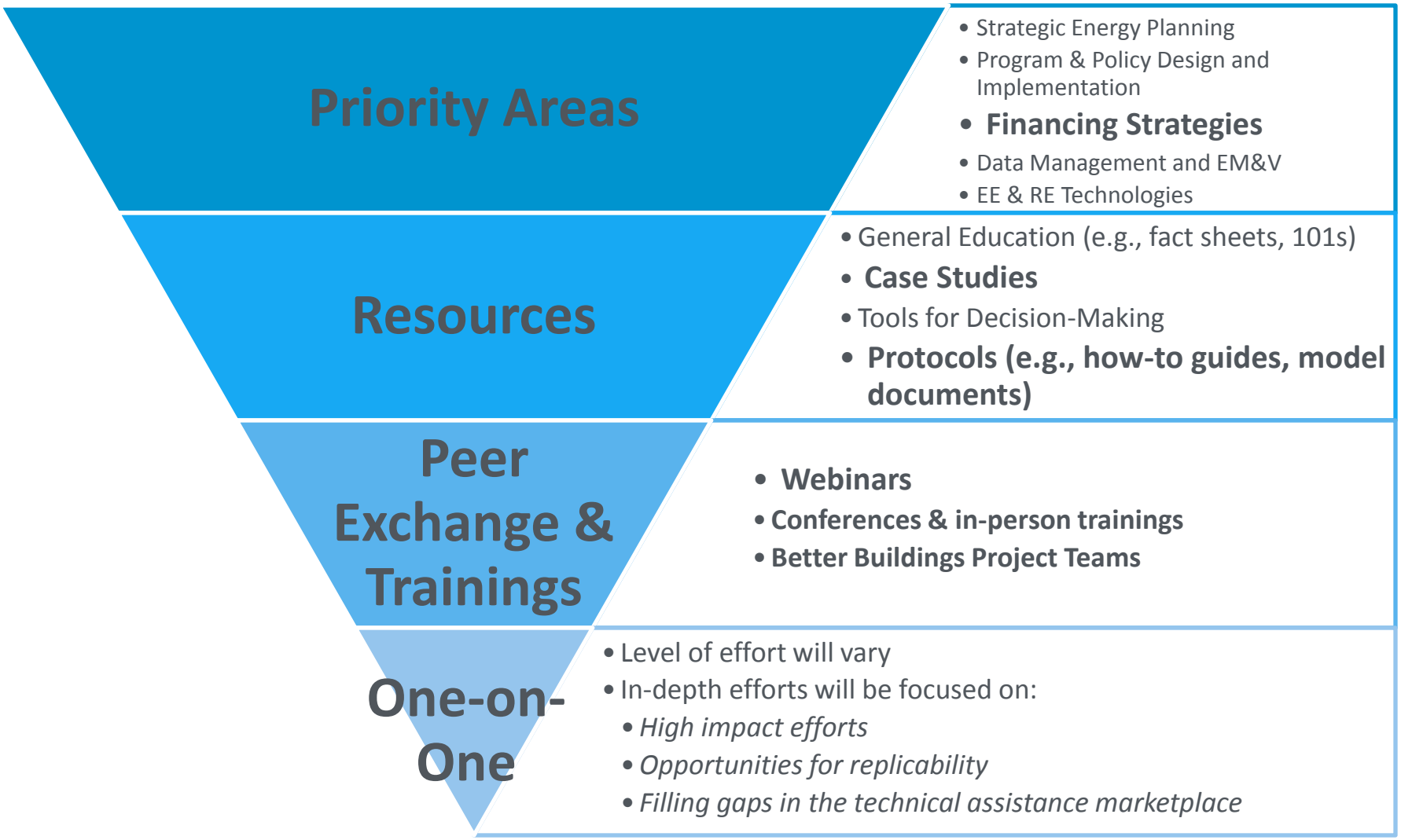
DOE's Technical Assistance Program



Priority Area: Financing Strategies

- **Resources**
  - *Financing Energy Upgrades for K-12 Schools* live now on Solution Center
  - Also featured: *DOE's Clean Energy Finance Guide* & other finance resources
  - Improved Solution Center portal for finance resources live later this year
- **Peer exchange & trainings**
  - Join the *Better Buildings Alliance and participate in Project Teams for Financing Strategies or Energy Savings Performance Contracting, kicking off in May*
  - Attend upcoming national webinars and the Better Buildings Summit, May 30-31st, in Washington, DC
- Apply for **one-on-one assistance** and **peer matching**

How to Tap into These and Other TAP Offerings

- Visit the ***Solution Center***
  http://www1.eere.energy.gov/wip/solutioncenter/

- Submit an ***application*** for assistance
  http://www1.eere.energy.gov/wip/solutioncenter/technical_assistance.html

- Sign up for ***TAP Alerts***, the TAP mailing list, for updates on our latest and greatest
  TechnicalAssistanceProgram@ee.doe.gov

BERKELEY LAB
Lawrence Berkeley National Laboratory

Environmental Energy Technologies Division Lawrence Berkeley National Laboratory

Financing Energy Upgrades for K-12 School Districts

A Guide to Tapping into Funding for Energy Efficiency and Renewable Energy Improvements

April 2013

Merrian Borgeson & Mark Zimring

Funded by the U.S. Department of Energy

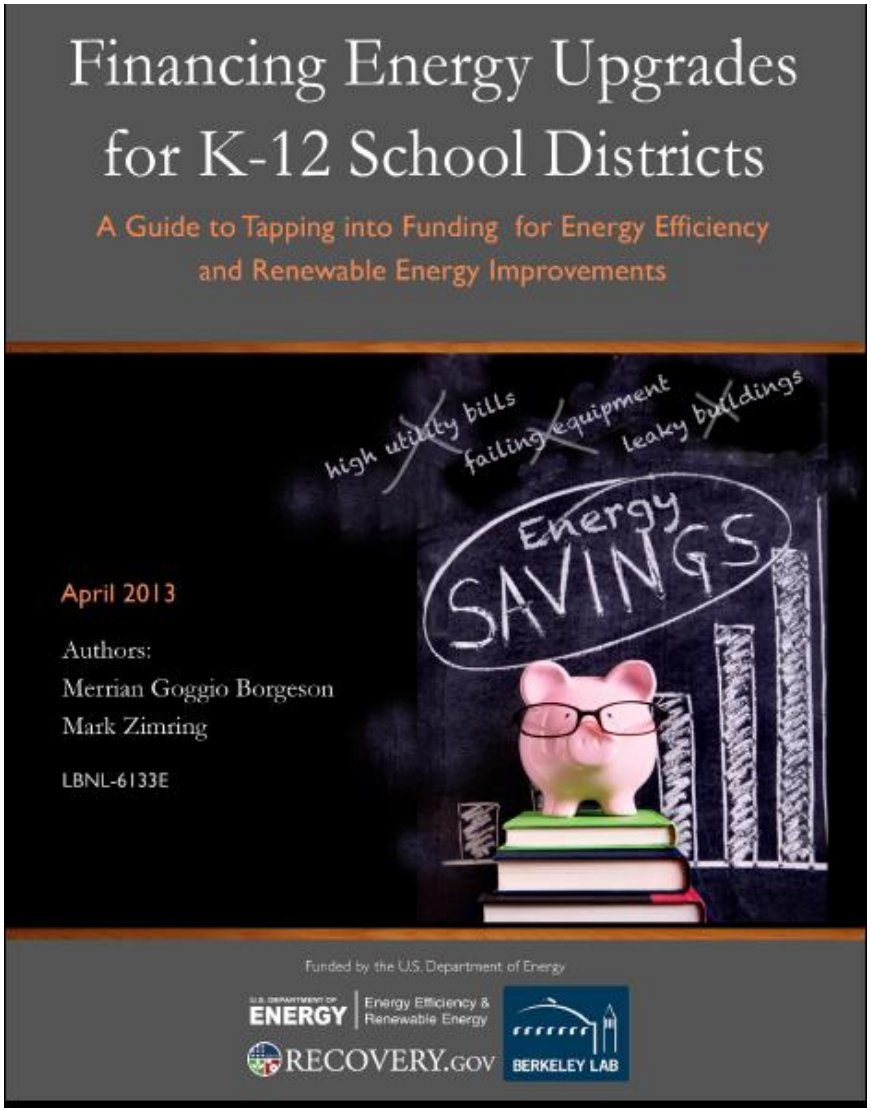
Significant Benefits for Schools

K-12 schools spend around **$6 billion** on energy annually – more money than is spent on textbooks and computers combined.

There are significant benefits to making clean energy upgrades, including:

- Lower energy bills
- Modernized infrastructure and reduced facility maintenance costs
- Improved comfort, health, and safety
- Environmental benefits
- Educational opportunities

Financing guide & case studies:
http://tinyurl.com/d7abt9w



Key Principles

Principle 1. Start with Clear Project Objectives

Principle 2. Pursue Comprehensive Projects Whenever Possible

Principle 3. Focus on Life-Cycle Cost Analysis

GETTING TO "YES"

In addition to making the financial case, successful projects require a strong team of champions, and a clear understanding of key hurdles and how to make the case to a variety of audiences. For an in-depth treatment of these topics, see ***Getting to "YES": A Guide to Developing a Persuasive Business Case for Energy Efficiency*** : http://energy.maryland.gov/Business/businesscaseguide/

Financing Options for Schools

- Internal Cash
- Grants & Incentives
- Bonds
- Leasing Arrangements
- Other Clean Energy-Specific Financing

Internal Cash

- Simplest, most flexible and most direct way to pay for energy-related improvements
- Projects paid directly with cash from the operating or capital budgets
- School retains all energy savings and often speeds project implementation time by avoiding transaction delays
- **However, the availability of internal funds is constrained by budget limitations and competing operating and capital investment needs**

Internal Cash	Monies from existing school district budgets
Pros	**Cons**
• Extremely flexible capital • Not debt, so no interest or obligation to repay	• Significant competing needs for these flexible funds • Most school districts lack sufficient cash to fund all (or any) EE/RE needs

Grants & Incentives

- Grants are external sources of capital that neither schools nor their taxpayers need to re-pay
- Grants can help to lower the overall cost of project
- However, accepting a grant obligates the school to perform actions specified in the grant agreement

Find Incentives in Your State

Check out the Database of State Incentives for Renewables and Efficiency (DSIRE) at www.dsireusa.org. Click on your state, and then scroll down the list of incentives. Schools are usually included under the "business" or "commercial" incentives.

Grants	Monies from third parties such as Federal and State governments, utility ratepayers, or foundations that cover all or part of the costs of energy improvements
Pros	**Cons**
• Best source of funds – reduces total project cost • Not debt, so no interest or obligation for school district or taxpayers to repay	• Limited availability • Restricted uses • Often covers only part of project costs • Philanthropic and government grants require planning and often a detailed proposal

Bonds

- Bonds are long-term debt obligations, and are commonly issued to finance construction and/or improvements to public infrastructure
- General obligation bonds are most common; they often require voter approval and are subject to debt limits
- Clean energy projects can be:
  - Wrapped into a larger bond ballot measure
  - Offered as a stand-alone project for voter approval (for larger projects)

General Obligation Bonds (GO)	Debt secured by the obligation to levy and collect property taxes sufficient to pay annual debt service
Pros	**Cons**
• Flexible capital for funding a range of clean energy projects (often subject to voter approval) • Lowest cost debt due to robust security and tax exempt interest • Increased revenue for school district (in most cases because taxpayers repay debt • Long terms (20-30 yrs)	• Voter approval required (in most cases) • Counts against statutory debt limit restrictions • High fixed issuance costs, including obtaining a legal opinion, setting up a trustee, and retaining accounting services • Long development time (~9 months+) to prepare package of funding requests and gain voter support

Federally-Subsidized Bonds

- **Qualified Energy Conservation Bonds** (QECBs) can be used for a range of "qualified energy conservation projects" including those that reduce energy consumption in publicly owned buildings.
- **Qualified Zone Academy Bonds** (QZABs) can be used for a range of energy and non-energy facilities renovation projects in disadvantaged communities, but are more complicated to deploy because they require a partnership with a private entity that must make a contribution to the school to improve student education.

More info on QECBs:

http://www1.eere.energy.gov/wip/solutioncenter/financialproducts/QECB.html

More info on QZABs:

http://www2.ed.gov/programs/qualifiedzone/faq.html

Lease Financing

- Leases often have slightly higher rates than bonds and require the school district (instead of the taxpayers) to repay the debt
- However, leases are a faster and more flexible tool, and can be set up so that energy savings are greater than debt payments
- Methods of procuring lease financing include:
  - Private-Placement Agreements (or single investor leases)
  - Certificates of Participation (COPs)

In many states, leases are popular because they are often not subject to school district debt limits or voter approval

Leasing Arrangements	School district leases property from a lessor, the underlying security is the leased equipment or real estate.
Pros	**Cons**
• Often voter approval not required • Often not subject to debt limitations • Flexible capital for funding a range of EE projects • Tax exemption lowers costs • Flexible terms (5-15 years) • Short development time (3months)	• School district (not taxpayers) must repay the debt • Higher interest rates than GO debt • Reserve fund and capitalized interest typically required

Other Clean Energy Financing Options

- **Power Purchase Agreements** - A third party owns, operates and maintains a renewable energy system installed on school district property, e.g. rooftop solar photovolatics (PV). The school district pays the third party a pre-negotiated rate for the power generated.

- **On-utility bill financing** (OBF) entails a utility (or third party) lending the up-front capital for energy-related improvements. The school repays this loan through a line item on the utility bill.
- **Revolving loan funds** (RLFs) are pools of capital from which loans are made – as loans are repaid, the capital is then re-lent for another project.

Concluding Comments

- Financing for many clean energy projects can be done with tools ***already*** familiar to schools
- Internal capacity, expertise, and support is often the primary bottleneck (not financing)
- A critical question for schools is how to deal with RISK
  - Expertise in negotiating contracts with financial partners and vendors is impt to reduce risk – a third party to represent the schools districts' interest can be valuable
  - Schools need to decide how they want to address performance risk – energy saving performance contracts reduce risk, but come at a cost

Centralia School District (WA)

Organization Size: 7 schools (3,400 students in K-12)
Project Scope: Replaced boilers, water conservation, lighting system upgrades
Project Cost: $1.3 million
Type of Financing: Pooled tax-exempt lease purchase agreement
Other Sources of Funding: $500,000 state grant, $200,000 utility incentives
Simple Payback Period: 6.5 years (net project cost / savings per year)
Key Benefits: Energy savings, replacement of aging equipment

Williamson County School District (TN)

Organization Size: 42 schools (32,000 students in K-12)
Primary Work Completed: Replace cooling towers, boilers, HVAC units, heat exchanger; lighting retrofits; energy management control systems
Project Cost: $5.7 million
Type of Financing: Lease-purchase agreement, bank note, general obligation bond
Simple Payback Period: 6.5 years (net project cost / savings per year)
Key Benefits: Lower energy bills, replace aging equipment, improved energy controls, funding for an energy resource manager

Douglas County School District (NV)

Organization Size: 12 schools (6,100 students in K-12)
Project Scope: Lighting improvements, a centralized energy management system, energy efficient transformers, a solar photovoltaic system, and HVAC system repairs and equipment replacements
Project Cost: $10.7 million
Type of Financing: Installment purchase agreement, general obligation bonds, Qualified School Construction Bonds (QSCB)
Other Sources of Funding: $441,000 federal grant
Simple Payback Period: 15 years (net project cost / savings per year)
Key Benefits: Energy savings, replacement of aging equipment, reduced operational costs, important non-energy improvements funded

Better Buildings Challenge

Make municipal, commercial and industrial buildings 20% more efficient by 2020; save more than $40 billion annually for US organizations; create American jobs

- Demonstrate market leadership through high level partnership with DOE
- Overcome market barriers/persistent obstacles with replicable, marketplace solutions
- Showcase real solutions; provide models for others to follow
- Celebrate leadership with Recognition from DOE and Administration for results
- Partner with industry leaders to better understand policy and technical opportunities
- Measure Success
- Portfolio wide commitment to continuous improvement

Better Buildings Challenge

Partner Agrees to:

Commit

-Assign Senior Executive

--Announce innovations/market solutions

Take Action

-Showcase project within 9 months

-Organization wide plan, schedule and milestones within 9 months

Report Results

-Share information and implementation models

-Share portfolio wide, facility level energy performance twice a year

-Quarterly updates on progress

DOE Agrees to:

Assist

- Technical assistance

- With the development of implementation models

Connect

-Establish marketplace of energy efficiency stakeholders

Recognize

-National and local recognition

-Showcase and highlight partners who develop and share innovative and cost effective marketplace blueprints

DOE will highlight actions of Challenge Partners

- Better Buildings Summit
- BBC Website
  - Highlights partners commitment and progress
  - Displays showcase projects and implementation models


energi
Walgreens
Schneider Electric
RREEF
DAS
GCP
USAA
USAA Real Estate Company
Cleveland Clinic
FORESTCITY
BRIGGS&STRATTON
GREEN SPORTS ALLIANCE
KOHL'S
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company
transcend
equity development corp
WYNDHAM WORLDWIDE
RENEWABLE FUNDING
Delaware State University
Making our mark on the world
LA COMMERCIAL BUILDING PERFORMANCE PARTNERSHIP
Ygrene ENERGY FUND
Douglas County SCHOOL DISTRICT
legrand®
RESURGENS
citi
CBRE
THE UNIVERSITY OF UTAH®
BLUE HILL
TRANSWESTERN®
ALLEGHENY COLLEGE
Lend Lease
ABUNDANT POWER
SAINT-GOBAIN
JONES LANG LASALLE
METRUS ENERGY
FOUDRE SCHOOL DISTRICT
PROLOGIS
SHORENSTEIN
ASCENSION HEALTH
sustainable.dc
has your voice been heard?
MINNESOTA DEPARTMENT OF COMMERCE
MICHIGAN STATE UNIVERSITY
ALCOA
HEI HOTELS & RESORTS
SeriousCapital™
IHG
InterContinental Hotels Group
BEST BUY
DENVER
THE MILE HIGH CITY
NISSAN
Cummins
TIAA CREF
3M
PNC
KCTCS
SEATTLE 2030 DISTRICT
SUPERVALU

Better Buildings Alliance

- Opportunity for local governments to work collaboratively with DOE to advance their clean energy goals
- Helps members sustain success of ARRA funded work
- Leverages DOE expertise and provides forum to engage with peers around actionable steps
- Expands on a successful DOE platform that was previously focused on private and commercial properties
- Workgroups focus on strategic target areas and sectors:
  - Public Sector
  - Retail, Food Service, and Grocery Sectors
  - Commercial Real Estate and Hospitality Sectors
  - Healthcare Sector
  - Higher Education Sector
  - Technical areas (lighting, HVAC, plug loads, data centers, etc.)

Better Buildings Alliance

Member Agrees to:

- **Commit**
  - Assign a company representative
  - Share organization-wide energy savings goals, encouraged to be a multi-year goal saving 2% of energy annually
- **Act**
  - Work to achieve goals and monitor progress through publicly available tools
  - Participate in at least one BBA workgroup or activity
- **Share**
  - Share your successes and help other BBA members replicate your results
  - Provide annual updates on energy savings and progress toward meeting goals

DOE Agrees to:

- **Assist**
  - Provide information and energy efficiency implementation models to help BBA members improve the energy performance of their building portfolios
  - Work with BBA members to create new resources to help them overcome efficiency challenges and increase the availability of highly efficient products and technologies
- **Connect**
  - Provide a neutral, third-party platform for sector peers to address common challenges
  - Connect members with financial allies for financing solutions
- **Inform**
  - Keep members informed through regular BBA communications and webinar series
  - Provide access to DOE and trusted third-party information and technical resources

Better Buildings Alliance Project Teams Developing Collaborative Solutions

In 2012, the Alliance:

- Launched the Lighting Energy Efficiency in Parking campaign to increase adoption of performance lighting specifications
- Developed market-based solutions to the split incentive barrier through green lease language and the establishment of the Green Lease Library

In 2013, the Alliance:

- Launched four new Project Teams focused on enabling energy efficiency in the public sector
- Forums are focused on helping public entities design and produce tangible, deployable resources tailored to their communities:
  - **Energy Savings Performance Contracts (ESPC) -** *Develop an energy services agreement framework for high performing contracts*
  - **Community Strategic Energy Planning -** *Fully developed strategic energy plan framework*
  - **Finance Strategies -** *Strategy for financing a portfolio of public projects*
  - **Data Management Approaches -** *Harness building energy data for greater energy efficiency impact*

Better Buildings Alliance

Better Buildings

SEARCH

Search Help

Installation of night curtains

Whole Foods Market, a BBA member, installed night curtains to cover the refrigerated produce cases when stores are closed. This strategy lowers the cooling load on the refrigeration case by about 40% during unoccupied periods.

BETTER BUILDINGS ALLIANCE SIGN-UP FORM

Building owners and operators can join the Better Buildings Alliance (BBA) by completing the sign-up form.

SIGN-UP FORM

Join the Better Buildings Alliance

Commercial buildings—our offices, schools, hospitals, restaurants, hotels and stores—consume nearly 20 percent of all energy used in the United States. We spend more than $200 billion each year to power our country's commercial buildings. Unfortunately, much of this energy and money is wasted: a typical commercial building could save 20 percent on its energy bills simply by commissioning existing systems so they operate as intended. Energy efficiency is a cost effective way to save money, support job growth, reduce pollution, and improve competitiveness.

Through the Better Buildings Alliance, members in different market sectors identify specific barriers and work with the U.S. Department of Energy's (DOE) exceptional network of research and technical experts to develop and deploy innovative, cost-effective, energy-saving solutions that lead to better technologies, more profitable businesses, and better buildings in which we work, shop, eat, stay, and learn.

Thank You

http://www1.eere.energy.gov/buildings/betterbuildings/bba/bba-index.html

For more information on the Better Buildings Alliance, please send questions to :

bba@ee.doe.gov