U.S. DEPARTMENT OF ENERGY

High-Performance Opportunities in Public School Facilities

June 22, 2022

Sarah Zaleski
Program Manager
Schools and Non-Profit Programs

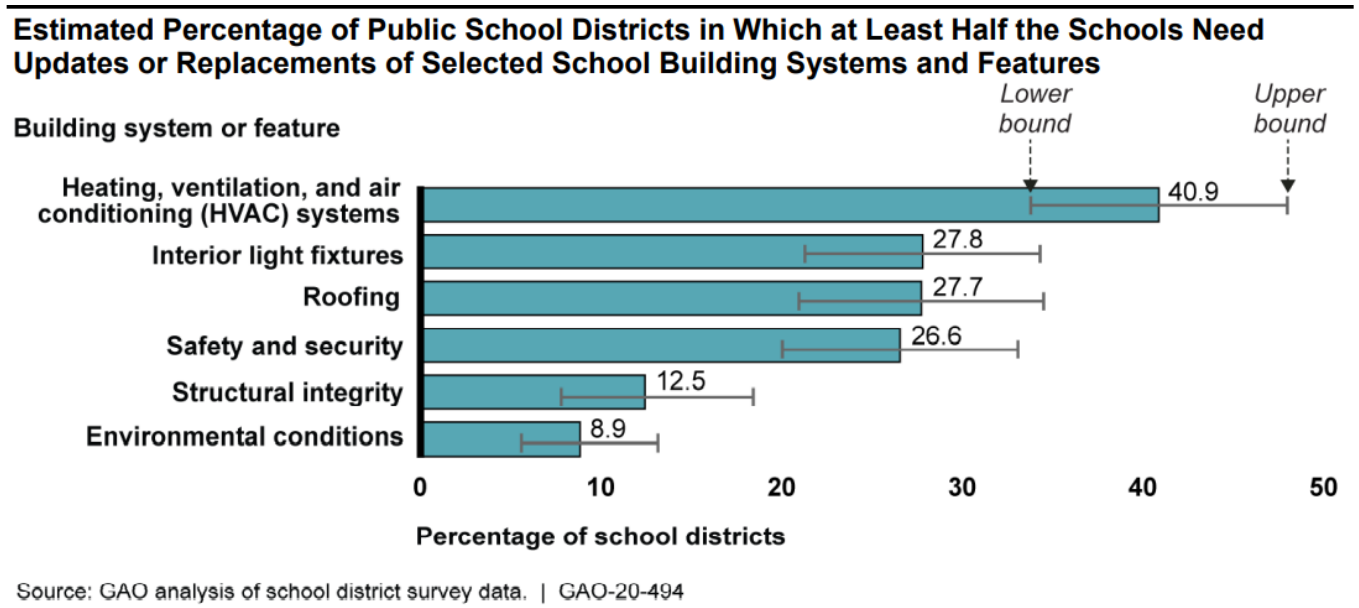
What is the Need/Opportunity?

Public K-12 schools have significant facilities needs

- Schools are the **second largest** public infrastructure sector and has minimal historic federal investment
- At **least one-third** of US schools need updated HVAC systems
- **$85 billion annual shortfall** in maintenance and capital funding needed for school facilities
- Capital improvement needs are greatest in **rural, high-poverty schools**

Why does it matter?

- Poor indoor environmental quality **reduces student learning and health**
- Antiquated school facilities **disproportionately impact** J40 communities
- Utility costs **reduce $ for classrooms**



BIL programs and eligibility under ESSER funding ($176B) is a **historic opportunity** to demonstrate the benefits of national investment in public school infrastructure to

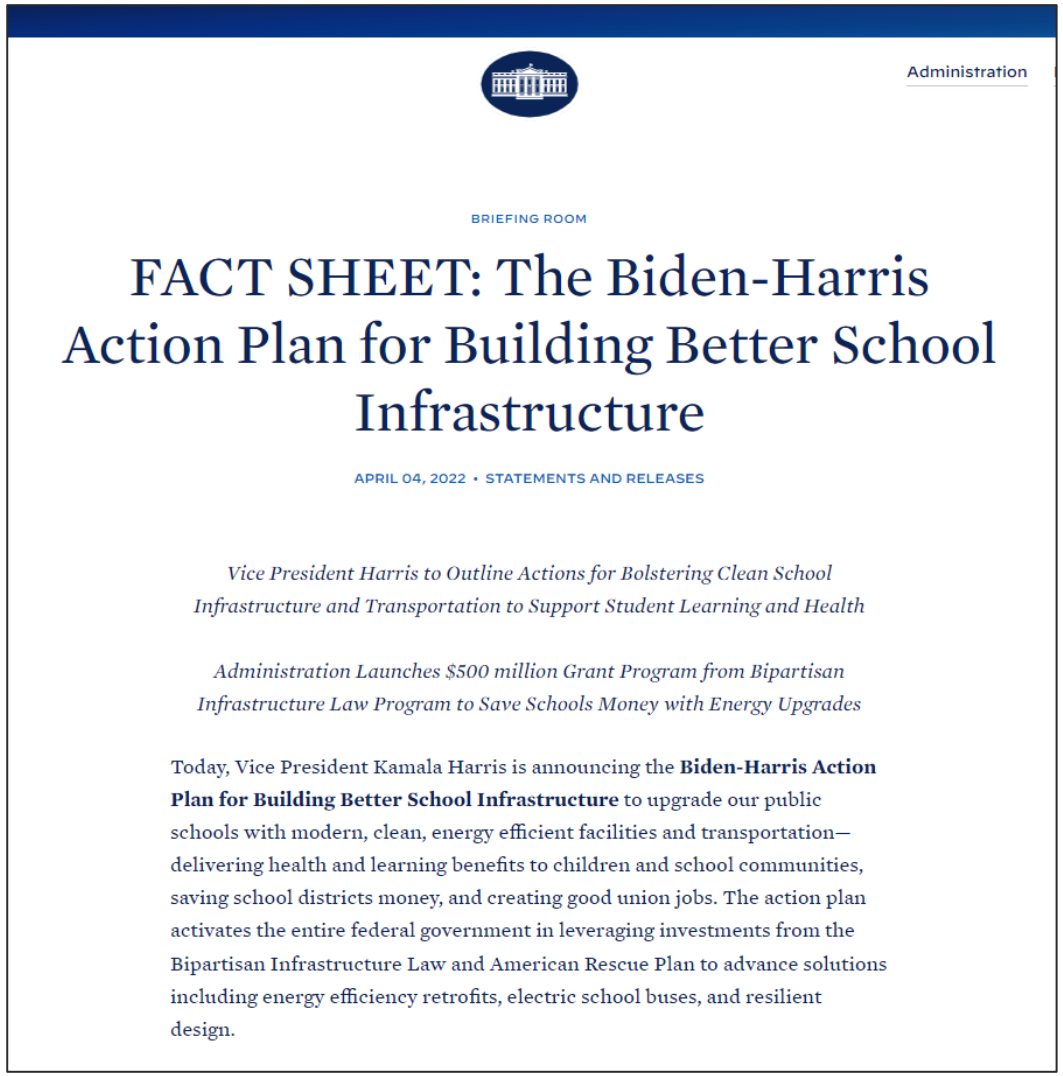
- Remedy the historic inequity of school facilities investments
- Reduce school energy expenditures
- Help schools lead the nation in solving the climate crisis

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Building Better Schools Action Plan

The Biden-Harris Action Plan for Building Better School Infrastructure will:

Invest in More Efficient, Energy-Saving School Buildings: The Department of Energy (DOE) is launching a $500 million grant program through President Biden's Bipartisan Infrastructure Law to make public schools more energy efficient. This new program will lower energy costs, improve air quality, and prioritize schools most in need, enabling schools to focus more resources on student learning.



Administration

BRIEFING ROOM

FACT SHEET: The Biden-Harris Action Plan for Building Better School Infrastructure

APRIL 04, 2022 • STATEMENTS AND RELEASES

Vice President Harris to Outline Actions for Bolstering Clean School Infrastructure and Transportation to Support Student Learning and Health

Administration Launches $500 million Grant Program from Bipartisan Infrastructure Law Program to Save Schools Money with Energy Upgrades

Today, Vice President Kamala Harris is announcing the **Biden-Harris Action Plan for Building Better School Infrastructure** to upgrade our public schools with modern, clean, energy efficient facilities and transportation—delivering health and learning benefits to children and school communities, saving school districts money, and creating good union jobs. The action plan activates the entire federal government in leveraging investments from the Bipartisan Infrastructure Law and American Rescue Plan to advance solutions including energy efficiency retrofits, electric school buses, and resilient design.

BIL Provision 40541 : Energy Improvement Grants for Public Schools

Overview: Grants for energy efficiency improvements and renewable energy improvements at public school facilities.

Qualifying Energy Improvements: Improvements, repairs, or renovations that reduce energy costs or lead to improved teacher and student health and achieve energy savings, installation of renewable energy, installation of alternative fueled vehicle infrastructure, and purchases or leases of alternative fueled vehicles.

Eligible Entities: Consortia of 1 local educational agency (LEA) and one or more schools, non-profits, for-profits, or community partners. LEA Definitions include School Board, Bureau of Indian Education Schools, Educational Service Agencies

Prioritization: Schools with improvement funding needs, high free and reduced-price lunch percentage or rural locale, and leverage private sector funding through performance contracting.

Funding: $500M ($100M over five years), until expended, through competitive grants

**Full provision language in the appendix section for reference*

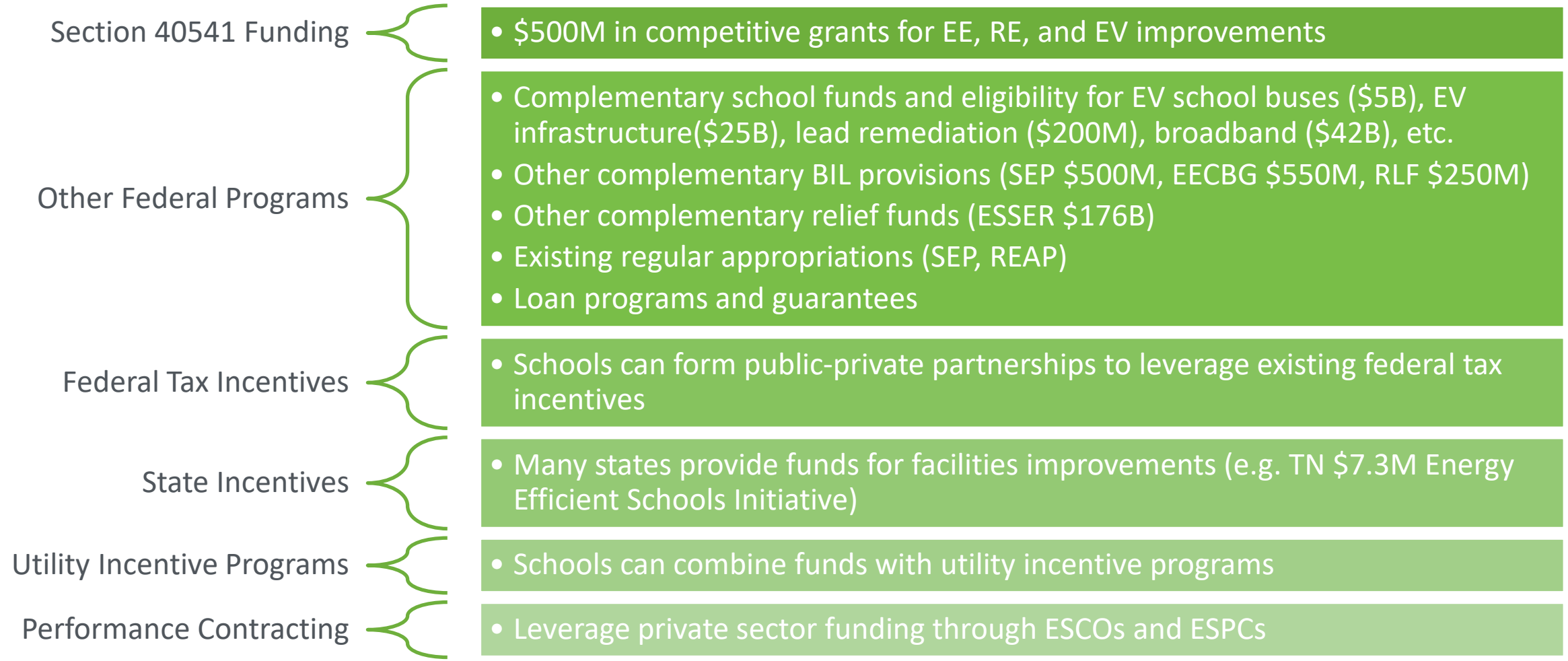
Strategy: Positioning Provision as a Launchpad for MAJOR investment

Use $500M down payment to pave the way for a much larger national investment in school facilities through additional federal (and other) funding streams by:

- Building LEA capacity and champions to manage retrofits and facilities over long term
- Teeing up future projects and investment through widespread needs assessments
- Facilitating organizational infrastructure and business models to execute partnerships
- Coalescing stakeholders around need and potential for impact
- Finding and investing in models of innovation that can be replicated and scaled
- Creating shared ownership of inspiring stories that transcend political lines

Program design prioritizes technical assistance to build enduring capacity and level the playing field for LEAs to pursue DOE grant funds and/or other funding pathways now and into the future.

Leveraging and Stacking Funding



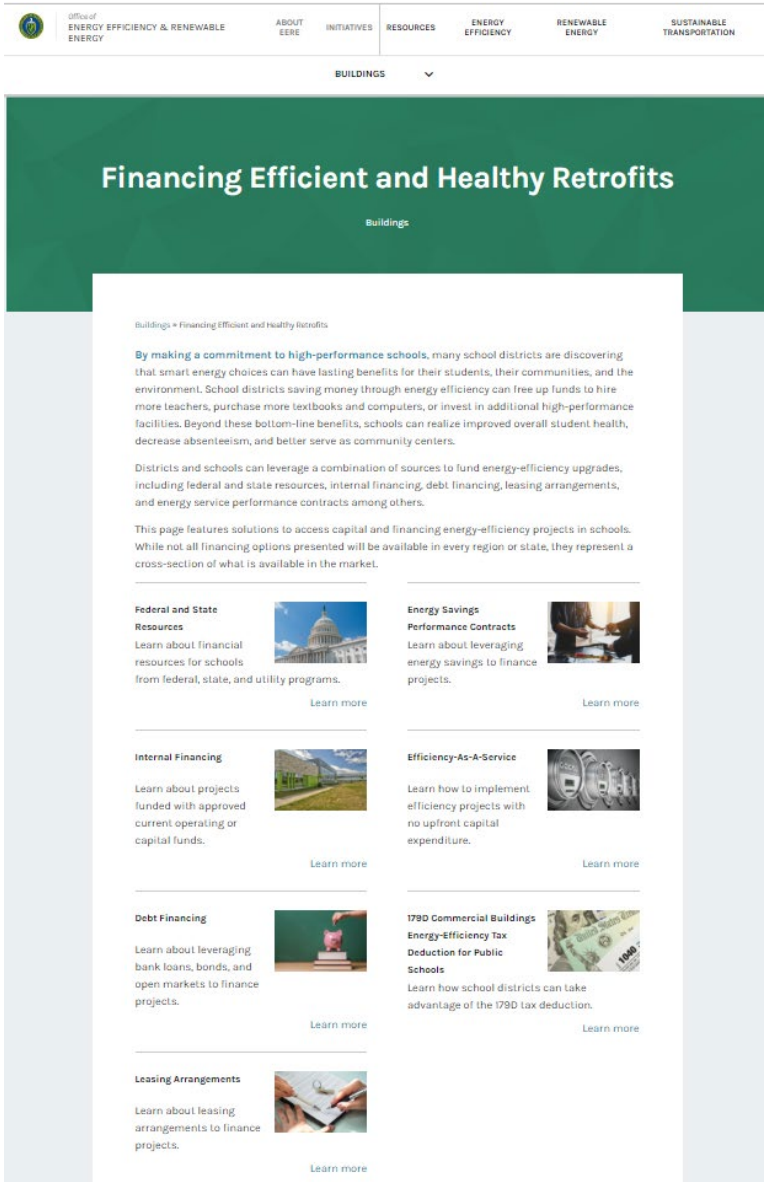
Exploring ways to leverage funds to unlock private sector and/or other funding sources through RFI, stakeholder engagement, compilation of potential funding sources, research models

Technical Assistance

Section 1001 of Energy Act of 2020* required DOE to coordinate federal EE programs and funding for schools.

To meet identified needs, plan to expand these resources to include:

- Technical guidance - tech packages and specification resources
- Collection of state-specific programs and resources for schools
- ESPC best practices – contractor lists, sample contracting language, etc.
- Innovative partnership and funding models
- Tools for needs assessments and project management
- Targeted outreach to disadvantaged communities
- Other areas of need as discovered



Advanced Energy Design Guide for Zero Energy K-12 Schools

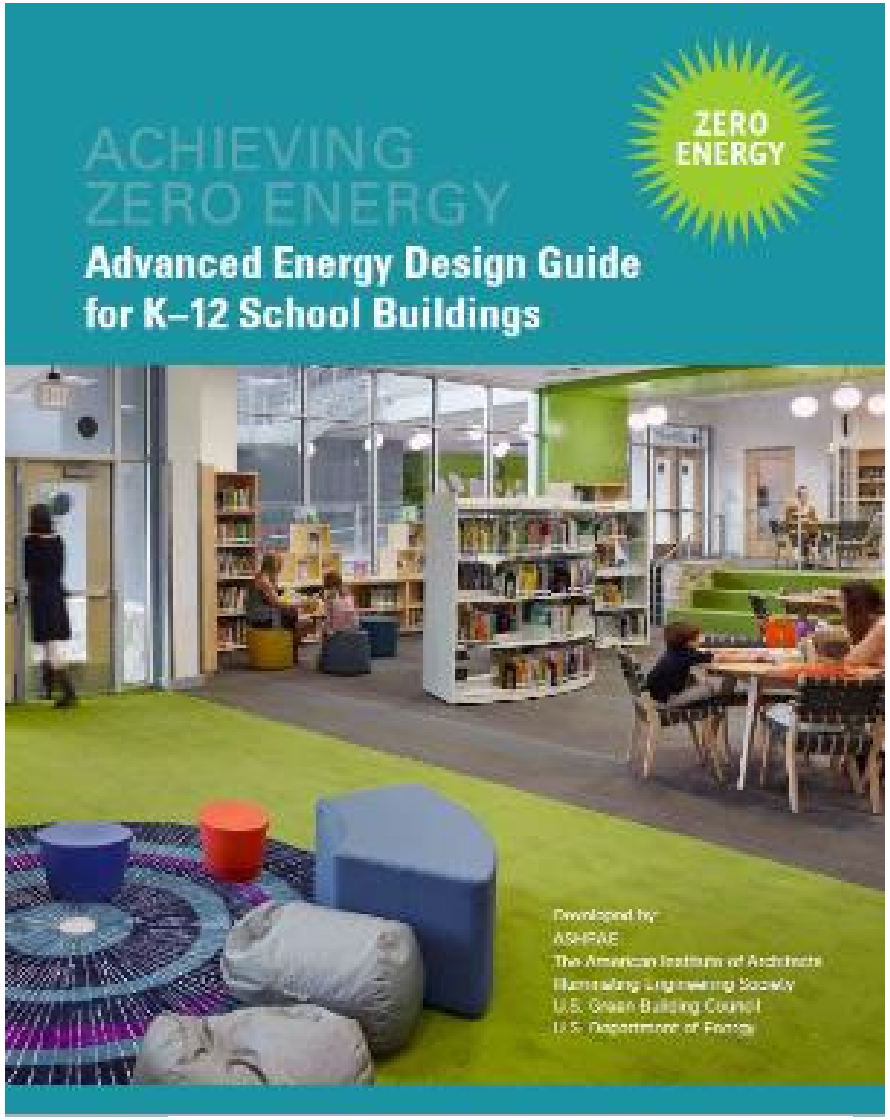
Developed by leading industry experts in partnership with ASHRAE, AIA, USGBC, DOE, and NREL

Guidance for new schools and major renovations

- Provides energy use targets by climate
- Example case studies of schools with similar energy use targets
- Energy modeled results with end-use breakdowns

Technical specifications

- Envelop
- Lighting
- HVAC
- Plug loads
- Other components such as kitchens, bathrooms, etc.

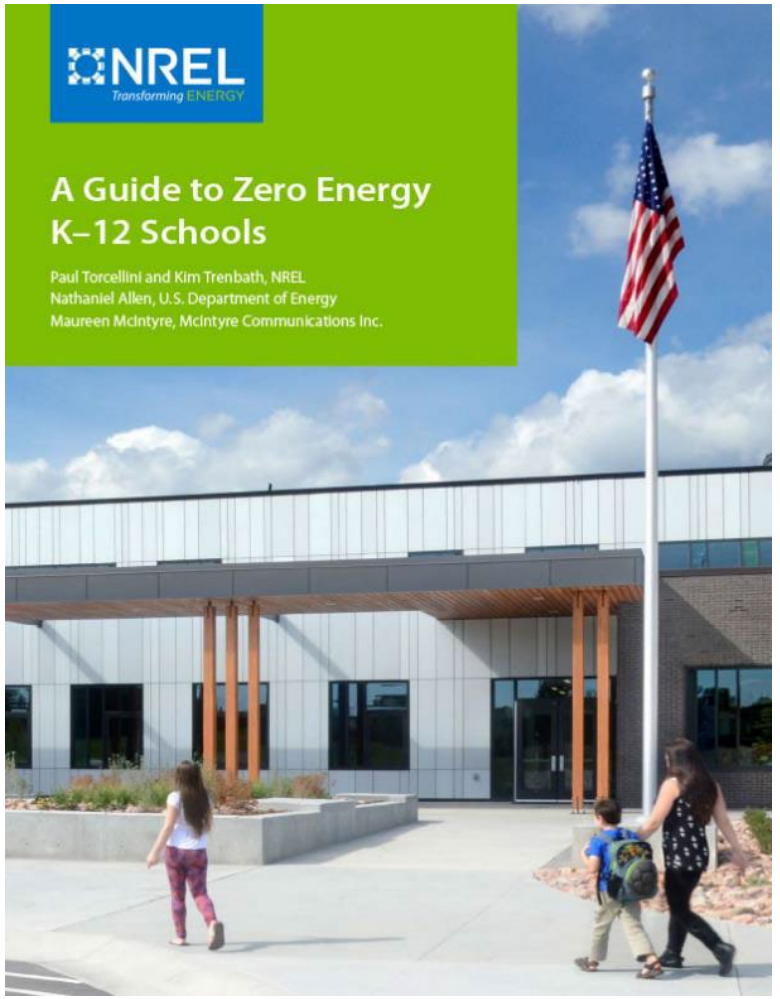


www.ashrae.org/aedg

Guidance for School Owners/Boards

Designed for owners providing steps to achieve success in zero energy schools:

1. Conducting a building needs assessment
2. Engaging stakeholders
3. Including ZE goals in the procurement process
4. Selecting a design and construction team committed to ZE Goals
5. Integrating ZE goals into design
6. Achieving ZE goals during construction and commissioning
7. Evaluating performance and engaging occupants
8. Showcasing and replicating a ZE school



https://www.nrel.gov/docs/fy19osti/72847.pdf

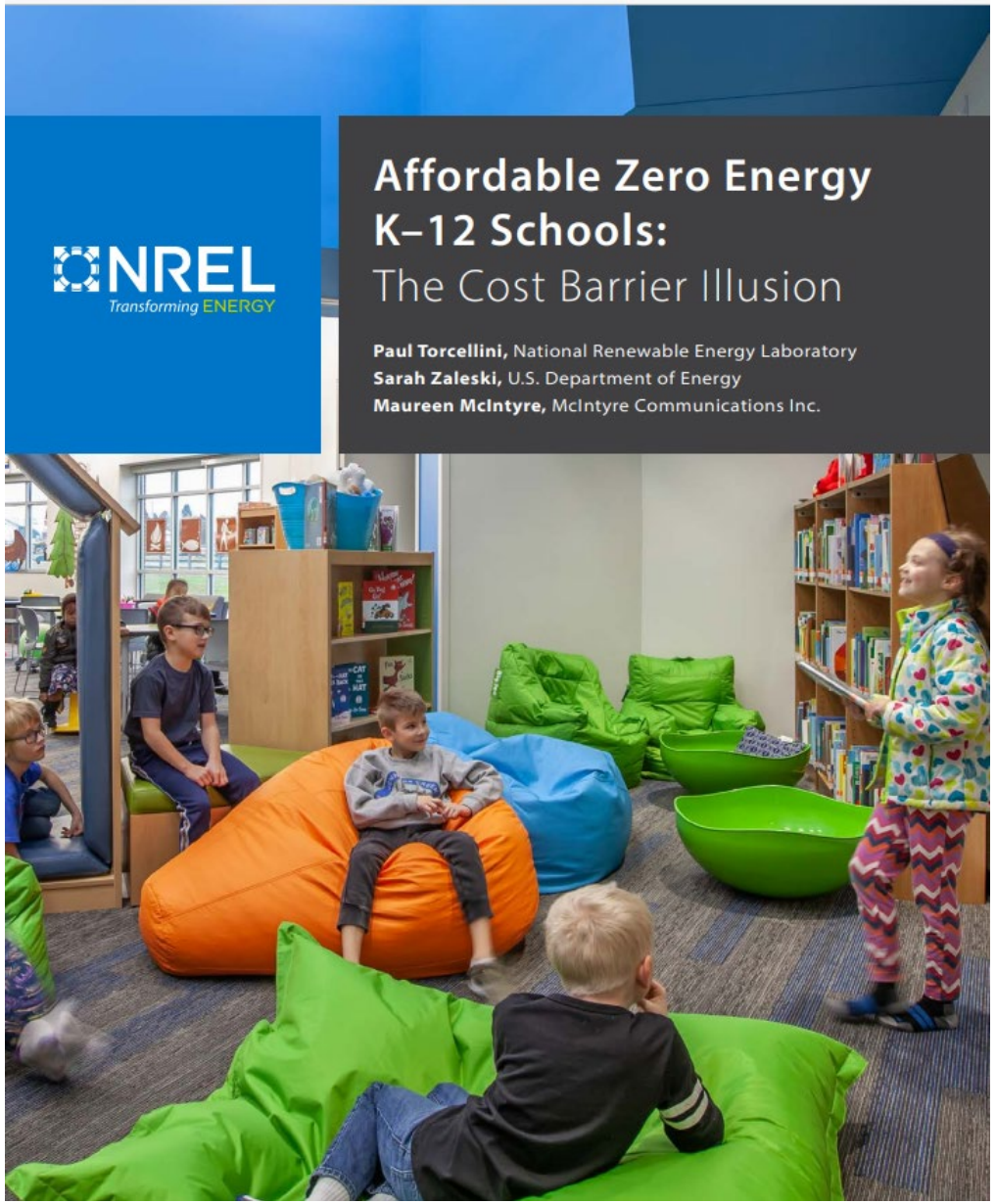
Achieving Zero Affordably

Analysis and report for over 90 low-energy schools

Cost not increased by energy performance when energy is integrated into design

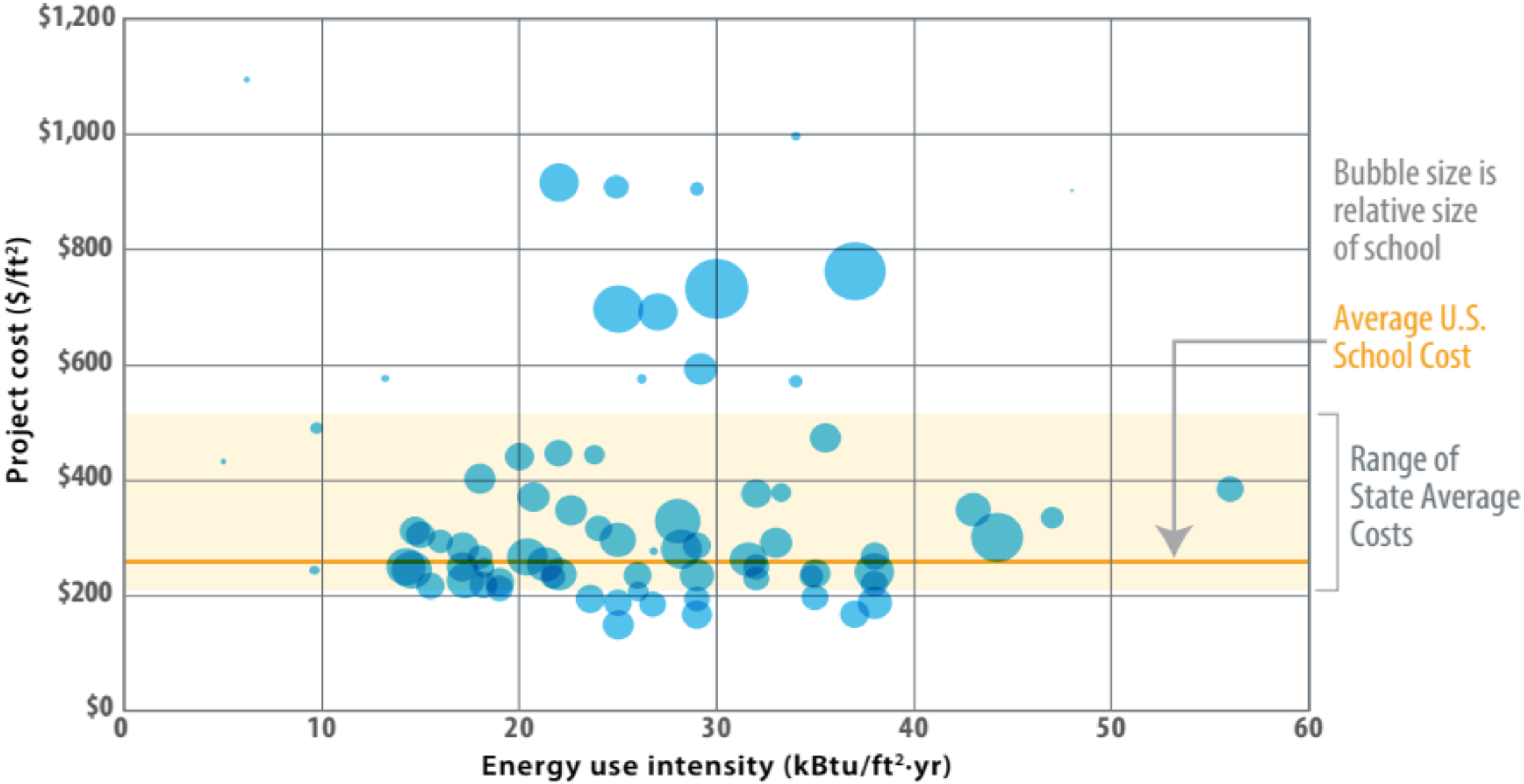
Provides strategies for cost-control

Case Studies



https://www.nrel.gov/docs/fy20osti/77414.pdf

Zero Energy Doesn't Have to Cost More



Currently Available - Efficient and Healthy Schools Campaign

EFFICIENT AND HEALTHY SCHOOLS

In partnership with the ED and EPA, the campaign helps public K-12 schools identify practical HVAC solutions and upgrades to improve energy efficiency and indoor air quality.

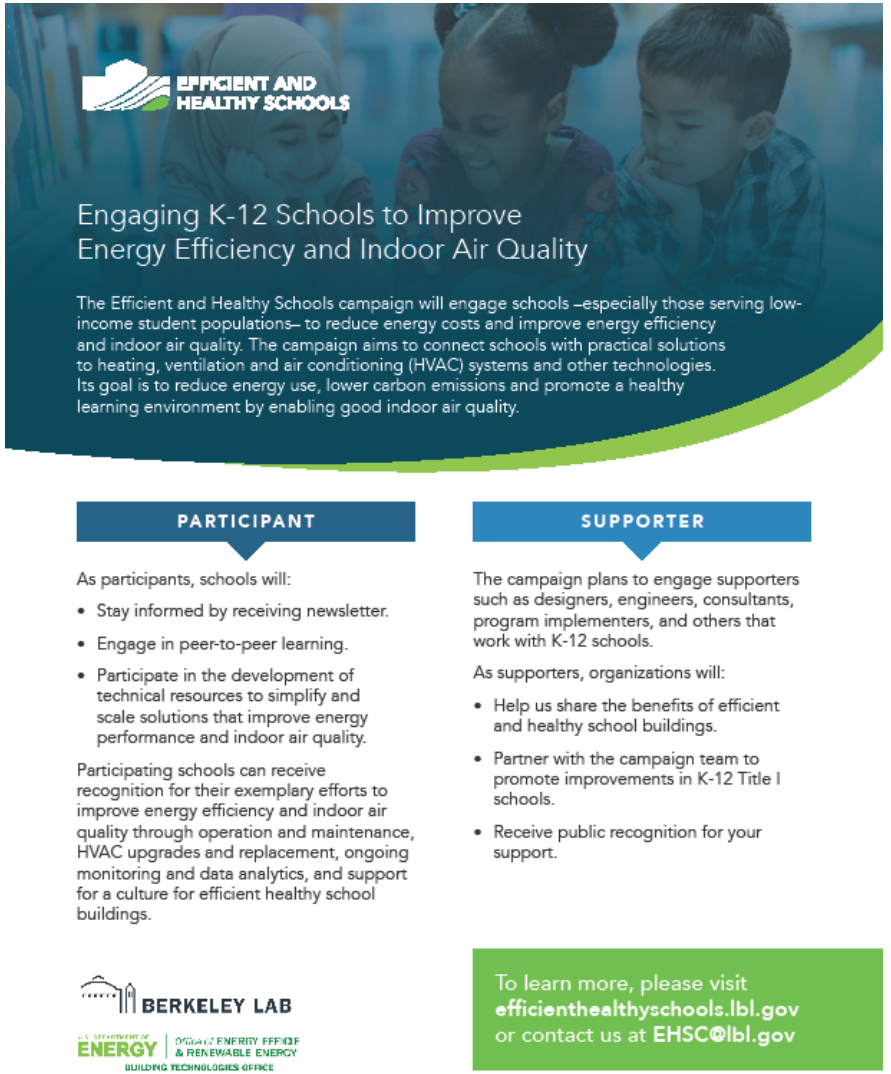
Technical Assistance will provide participating schools and districts with:

1. General resources on EE retrofits, low carbon technologies, and financing options.
2. Specific guidance on energy management tools
3. Information about managing and improving indoor air quality.
4. Offer technical review and data gathering service to participating schools and districts.

Campaign Update

First round of recruitment completed with 23 recruits, 850 Schools representing the states of CA, CO, KS, LA, MA, MI, MO, ND, NJ, OH, SC, UT, WI, WY.

https://efficienthealthyschools.lbl.gov/about



U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Thank you!

Sarah Zaleski

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https://www.youtube.com/watch?v=2kTS4UODWwc&t=3s

www.ashrae.org/aedg

Zero Energy Schools - Completed | Better Buildings Initiative

https://www.nrel.gov/docs/fy20osti/77414.pdf

https://www.nrel.gov/docs/fy19osti/72847.pdf

https://efficienthealthyschools.lbl.gov/about

ENERGY STAR for Schools

Caterina (Katy) Hatcher
ENERGY STAR National Public Sector Manager
hatcher.caterina@epa.gov

EPA United States Environmental Protection Agency

The biggest little label in energy efficiency

7 billion products

39,000 buildings

230 industrial plants

2.3 million homes

- **280,000** buildings last year
- More than **25%** of all floorspace
- **39** local & **4** state benchmarking policies
- **One** foreign government (Canada)

2020 ENERGY STAR Portfolio Manager Benchmarking Stats

Benchmarking is the process of reviewing building performance over time compared to a baseline period, and/or comparing building performance to that of similar buildings.

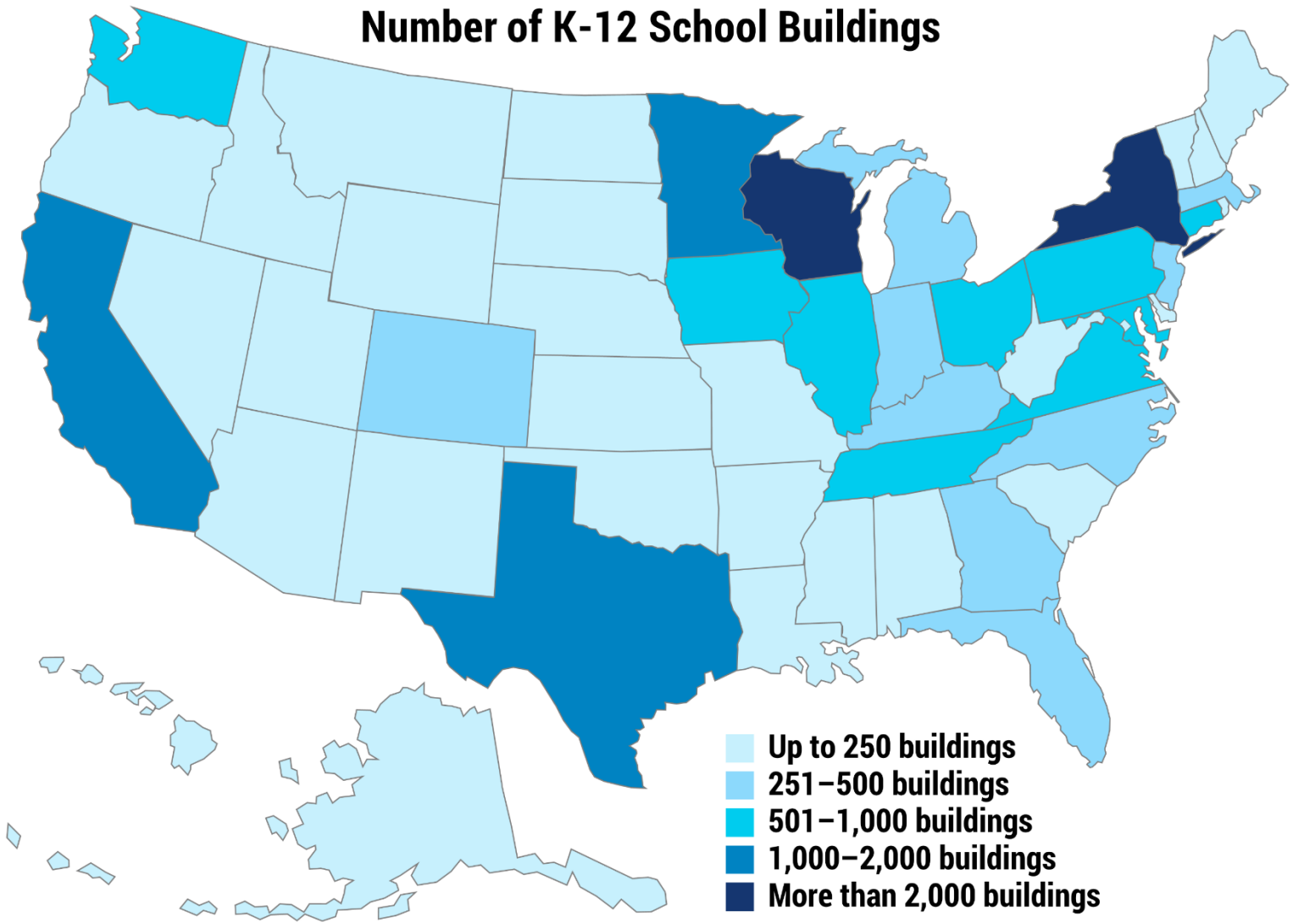
Number of schools benchmarked in 2020 in Portfolio Manager:
23,000+

Total square footage benchmarked:
2.5 billion ft2

Average ENERGY STAR score:
56

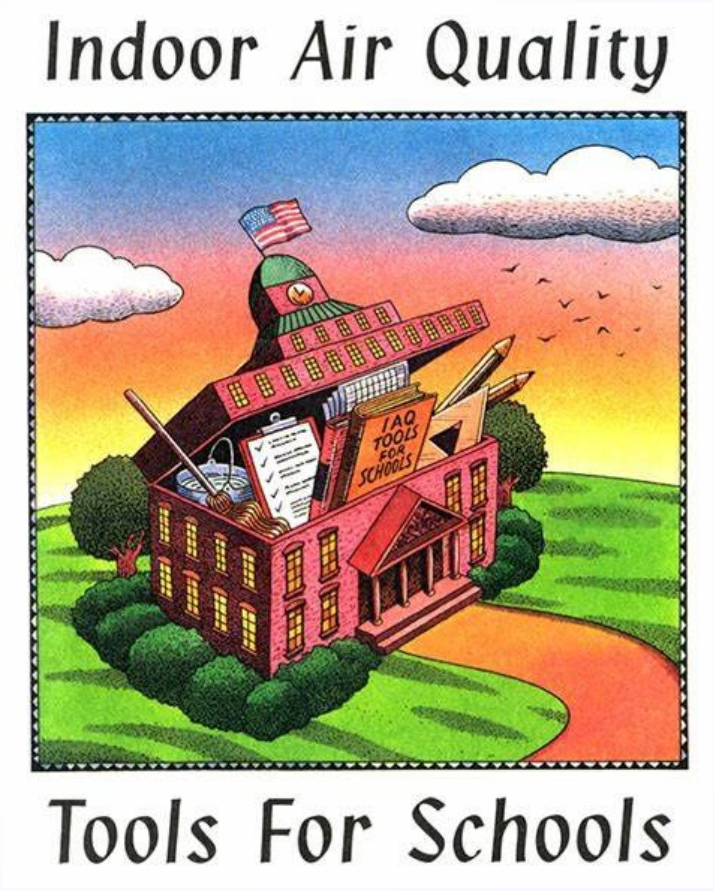
Average ENERGY STAR score based on the most recent Analysis and Key Findings from EPA's Review of the ENERGY STAR Model for K-12 School Properties.

2020 Benchmarking by State



Manage Energy Efficiency and Indoor Air Quality Together!

LEARN MORE AT
energystar.gov



ENERGY STAR®
Portfolio Manager®

Benchmarking, Management, and Reporting Tool

Assess whole building **energy** and **water** consumption, plus **waste**

Track green power purchase

Share/report data with others

Track changes in energy, water, **greenhouse gas emissions**, and cost over time

Create custom reports

Apply for **ENERGY STAR** certification, meet **ASHRAE**

ENERGY STAR®
PortfolioManager®

Hundreds of metrics, including:

Energy use
Source, site, weather normalized, demand

Water use
Water use intensity, Water Score (for Multifamily)

Waste & Materials
Waste intensity, diversion rate

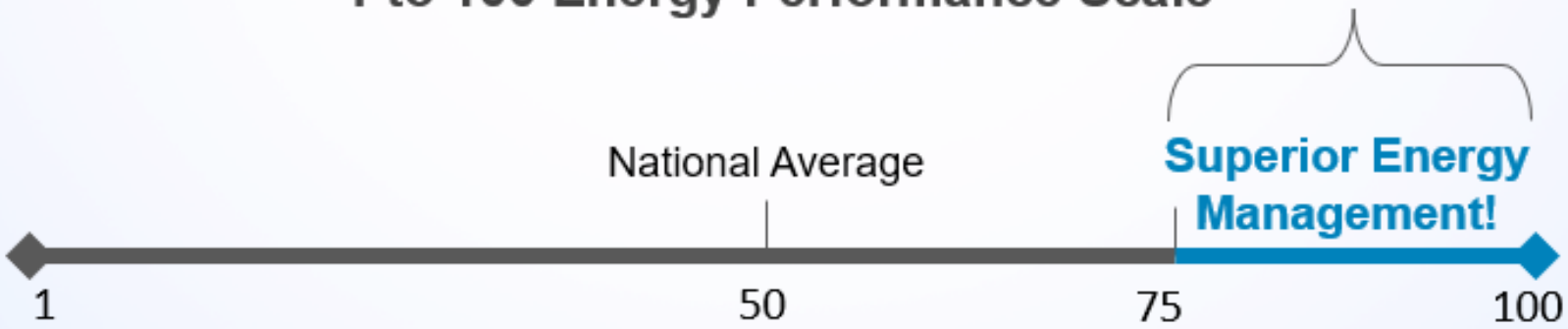
1-100 ENERGY STAR score

GHG emissions
Indirect, direct, total, avoided

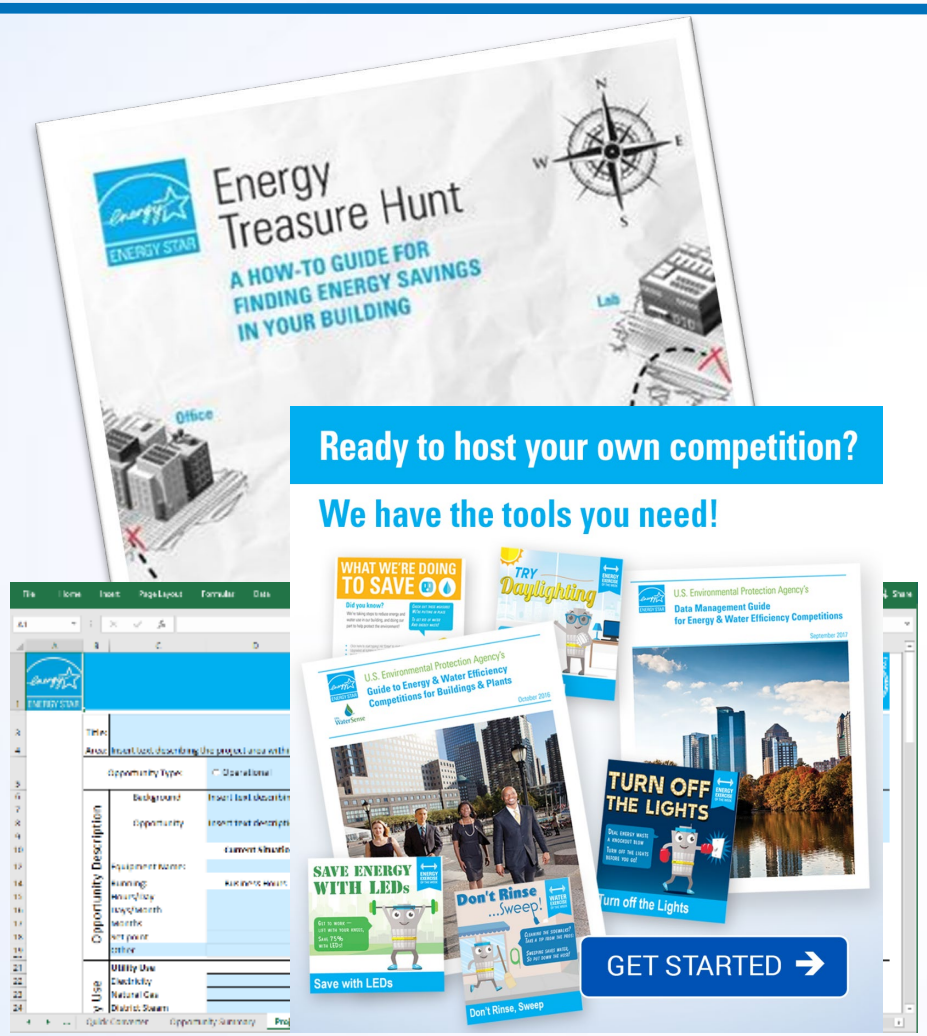
ENERGY STAR Certification and IAQ

- Benchmark building in ENERGY STAR Portfolio Manager
- Achieve an ENERGY STAR score of 75 or higher
- Minimum meet ASHRAE 62.1 and 55, meet IESNA Lighting Handbook
- Application must be verified by a licensed professional
- Re-apply annually to keep current but monitor energy use and IAQ more frequently.

1 to 100 Energy Performance Scale

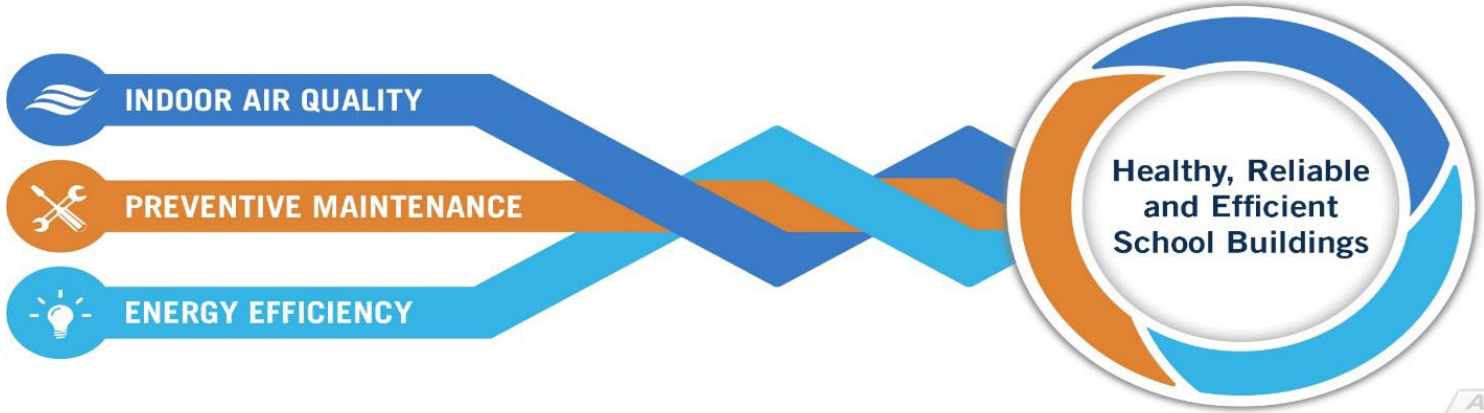


EPA's ENERGY STAR Tools and Resources to Help School Districts



- Portfolio Manager
- Cash Flow Opportunity Calculator
- Competition Guide
- Treasure Hunt maps
- ENERGY STAR certification
- Decarbonize your Design
- Online help/training
- Implementation support
- …and more!

energystar.gov



Quality HVAC

ACTION KIT
★HVAC

- Inspect HVAC systems regularly.
- Establish a maintenance plan.
- Change filters regularly and ensure condensate pans are draining.
- Provide outdoor air ventilation according to ASHRAE standards or local code.
- Clean air supply diffusers, return registers and outside air intakes.
- Keep unit ventilators clear of books, papers and other items.

Integrated Energy Management Solutions

ACTION KIT
★Energy Efficiency

- Protect IAQ during energy efficiency upgrades and building renovations.
- Conduct regular HVAC maintenance and tune-ups.
- Install programmable thermostats.
- Consider performing post-construction commissioning for HVAC systems.
- Control moisture in building assemblies, mechanical systems and occupied spaces.

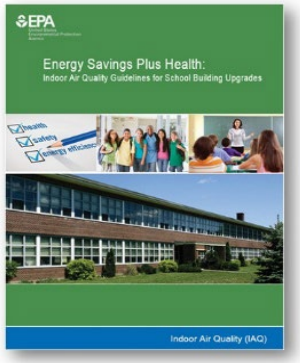
EPA Resources to Get You Started!

IAQ Tools for Schools **Action Kit**

IAQ Tools for Schools **Mobile App**

Framework for Effective IAQ Management

IAQ Master Class Professional Training Webinar Series



Energy Savings Plus Health Guide and Interactive Air Quality Planner

IAQ Tools for Schools **Preventive Maintenance Guidance**

www.epa.gov/iaq-schools

2022 CLEAN SCHOOL BUS REBATE COMPETITION

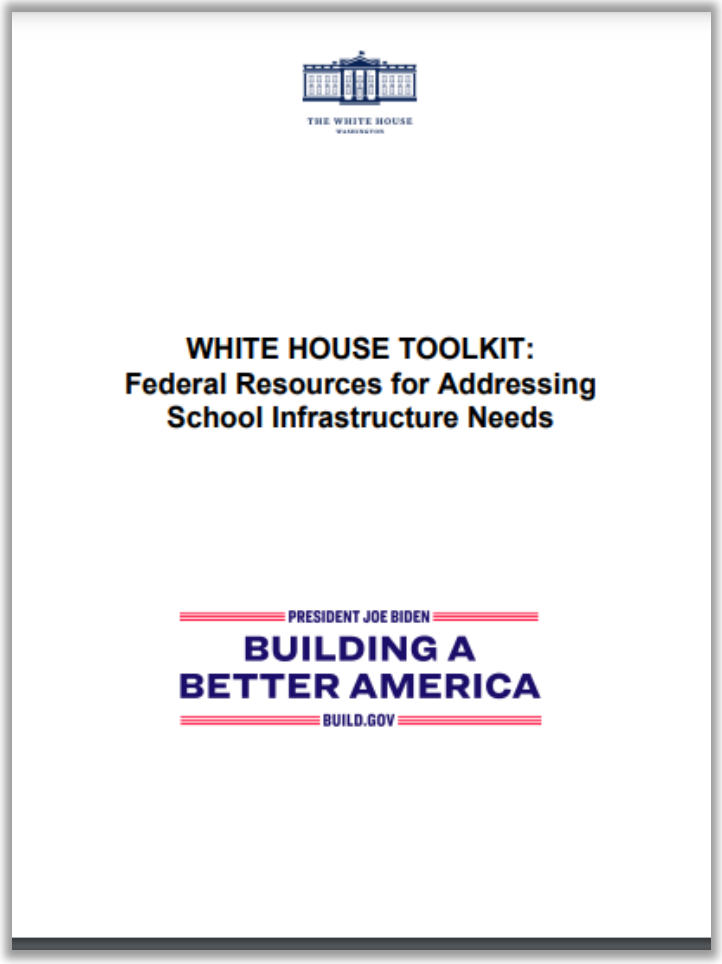
- **The Bipartisan Infrastructure Law provides EPA with $5 billion over 5 years to replace old diesel school buses with new electric and clean school buses through the Clean School Bus Program.** Electric and clean school buses are better for children's health and better for the planet.
- On May 20, EPA launched a $500 million rebate competition, which is the first of several funding opportunities for Clean School Bus program. **The simple, easy-to-complete, online application for the 2022 CSB Rebates is open now through August 19, 2022.**
- **Public school districts can receive significant federal funding for new electric and clean school buses.**
  - To ensure funds reach high-need communities, EPA has prioritized rural, Tribal, and low-income school districts for this program.
  - While prioritized districts can receive more funding per bus, non-prioritized school districts are still eligible for significant funding and are encouraged to apply. Each district can apply for up to 25 buses in one application.
- **Prioritized applicants can receive up to $375,000 per electric bus** (plus an additional $20,000 per electric bus for electric charging infrastructure). Non-prioritized applicants can receive up to $250,000 per electric bus (plus an additional $13,000 per electric bus for electric charging infrastructure). Funding is available for propane and CNG buses as well.

Learn more and apply at epa.gov/cleanschoolbus and reach out to cleanschoolbus@epa.gov with your questions.

Toolkit: Federal Resources for School Infrastructure

- Available funds by agency
- Key Tools and Resources by topic
  - Indoor Air Quality
  - Lead Removal
  - Efficiency & Power
  - Clean School Buses
  - General Planning & Recognition
  - Natural Disasters
  - Contracting & Financing
- Contacts by agency and program

White House School Infrastructure Toolkit



Designing to Earn ENERGY STAR: The Pathway to Decarbonizing Your Design

Achieve Designed to Earn the ENERGY STAR and Join the 2022 Decarbonize Your Design Challenge

ACHIEVE ENERGY STAR DESIGN SCORE

Achieve an ENERGY STAR score of 75 or higher for estimated annual energy use in commercial new construction projects using Target Finder or Portfolio Manager

APPLY FOR CERTIFICATION

Submit Designed to Earn the ENERGY STAR application to EPA

- Approved projects can display the Designed to Earn the ENERGY STAR mark and join the Challenge

JOIN THE DESIGN CHALLENGE

Share the project's design and strategies that incorporate electrification, energy equity, renewable energy and reducing CO_2 emissions to compete for best project and other awards

"As the architecture profession looks to a carbon-neutral future, it becomes increasingly important to connect building design expectations with actual performance." AIA

- ENERGY STAR tools provide metrics to track and determine if the energy efficient strategies specified in design projects will achieve CO_2 reductions goals!

CERTIFICATION NATION 2022

ENERGY STAR

30th Anniversary of ENERGY STAR

www.energystar.gov/CertificationNation

Member

Certify 5 or more buildings or plants in 2022 to receive:

- A listing on EPA's website
- A digital badge

Premier Member

Certify 15 or more buildings or plants in 2022 to receive:

- A listing on EPA's website
- A digital badge
- A personalized letter from the director of EPA's Climate Partnership Programs

Executive Member

Certify 50 or more buildings or plants in 2022 to receive:

- A listing on EPA's website
- A digital badge
- A personalized letter from a senior EPA official (mailed in 2023)

Elite Member

Certify 150 or more buildings or plants in 2022 to receive:

- A listing on EPA's website
- A digital badge
- A personalized letter from a senior EPA official (mailed in 2023)
- Inclusion in an EPA press release

Deadline for ENERGY STAR certification: October 14

To ensure that all your buildings are awarded ENERGY STAR certification in time to be counted, you must submit your applications for certification no later than October 14!

“But we won’t be eligible until December!”

Not true! Remember, if you were awarded 2021 certification with a "Year Ending" date between August and Dec, then your next eligible “Year Ending” date will be this July.

30th Anniversary of ENERGY STAR

www.energystar.gov/CertificationNation

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