U.S. DEPARTMENT of ENERGY

The ABCs of ESPC for K-12 schools: A Practical Introduction for School Districts

January 27, 2026

A copy of the slides from today's presentation will be provided to you for reference.

ENERGY SERVICES COALITION
A Public Private Partnership
www.energyservicescoalition.org

ESPC Campaign

Agenda

School districts continue to face major challenges: limited funding, aging buildings, growing deferred maintenance, and increasing demands around safety, comfort, productive learning environments, and energy performance.

Energy Savings Performance Contracting (ESPC) can help schools address these issues without requiring upfront capital, while contributing to the local economy.

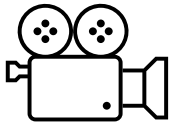
What we'll cover:

- State of Schools in US
- What ESPC is, and the core steps in the process
- How performance contracting can address the issues faced by schools today
- Typical project scopes for schools (and examples!)
- What districts should prepare or consider before getting started

Attendees will leave with a foundational understanding of ESPC and practical next steps to determine whether this approach can support their district's educational, capital, operational, and facility goals.

Virtual Housekeeping

Drop your questions in the Q&A box



A recording of this training will be posted online

Introductions

Speakers

Chris Halpin, PE, CEM, CMVP, DOE PF

Energy Services Coalition

Consultant

chris@celticenergypllc.com

Craig Schiller

Director

US Green Building Council/Center for Green Schools

cschiller@usgbc.org

Speaker's Bios

- **Chris Halpin:** Chris is the President of Celtic Energy, PLLC, based in Las Vegas, NV. ESC, U.S. DOE, and Berkeley Lab are his primary clients. He has 40 years' experience in the energy efficiency industry, including founding and running an ESPC Owner's Rep firm for 18+ years where he oversaw over $2.5 billion of ESPC projects. He has a BS Mechanical Engineering, is a registered PE in NV and CT, and Certified by the Association of Energy Engineers (AEE) as a Certified Energy Manager (CEM) and Certified Measurement & Verification Professional (CMVP). He is also a USDOE FEMP certified Project Facilitator, and a nationally known speaker on ESPC and other energy industry topics.
- **Craig Schiller:** Craig is the Director of the US Green Building Council, and formerly the Executive Director of the Collaborative for High Performance Schools and has 15 years of experience developing and scaling innovative programs in the fields of k12 schools, energy efficiency, higher education, climate policy, and net-zero energy buildings. In addition, Craig spent a decade managing decarbonization projects at the think-tank RMI and served as an Advisor on the Biden-Harris Climate/Environment/Energy Committee. Craig has a Master's in Sustainable Design from Carnegie Mellon University, where he wrote his thesis on high performance schools as teaching tools, and a B.S. in Geology & Geophysics from the University of Wisconsin.


Center for Green Schools
at the U.S. Green Building Council

About ESC

The Energy Services Coalition (ESC) is a national nonprofit organization composed of a network of experts from a wide range of organizations working together at the state and local level to increase energy efficiency and building upgrades through **E**nergy **S**avings **P**erformance **C**ontracting.

Local chapters; public and private sector individuals coming together to provide outreach and education.

Join the ESPC Campaign

If your organization is not yet a member, please join the ESPC Campaign!

Complete the Expression of Interest form to obtain a Partner Agreement

Campaign Leaders	• State Energy Offices or similar organizations ready to establish, strengthen, and/or expand technical assistance programs to support others in using ESPC
ESPC Champions	• MUSH organizations seeking to connect with peers and access and share ESPC resources
Supporters	• Market stakeholders that support the objectives of the ESPC Campaign, promote this program as a resource to the public sector, and assist their clients with reporting and tracking data in eProject eXpress (ePX)

State of Schools Today

Criag Schiller, USGBC

The Growing Challenge of Maintaining Healthy, Efficient Schools

- Maintaining energy efficient and healthy learning environments is a key responsibility of the nearly 20,000 local educational agencies (LEAs) across the United States.
- **56 million** student and staff occupants; 8.1 billion square feet of Facilities
- A 2020 Government Accountability Office (GAO) report found that **nearly 36,000 of the nation's 100,000 K-12 public schools need HVAC system replacements or upgrades.**
- **K-12 education sector was the second largest consumer of electricity and the largest consumer of natural gas among commercial buildings.**
- K-12 sector consumed **266 trillion Btus of natural gas and 327 trillion Btus of power in 2018.**
- K-12 sector spent **$12 TRILLION on utilities in 2020.**
- At its peak, the COVID-19 pandemic prompted the addition of enhanced ventilation and indoor air quality measures in support of a safe return to in-person instruction. **These important health and indoor air quality measures may introduce additional energy loads, presenting further incentive for school districts to optimize energy efficiency among all new and existing facility systems.**

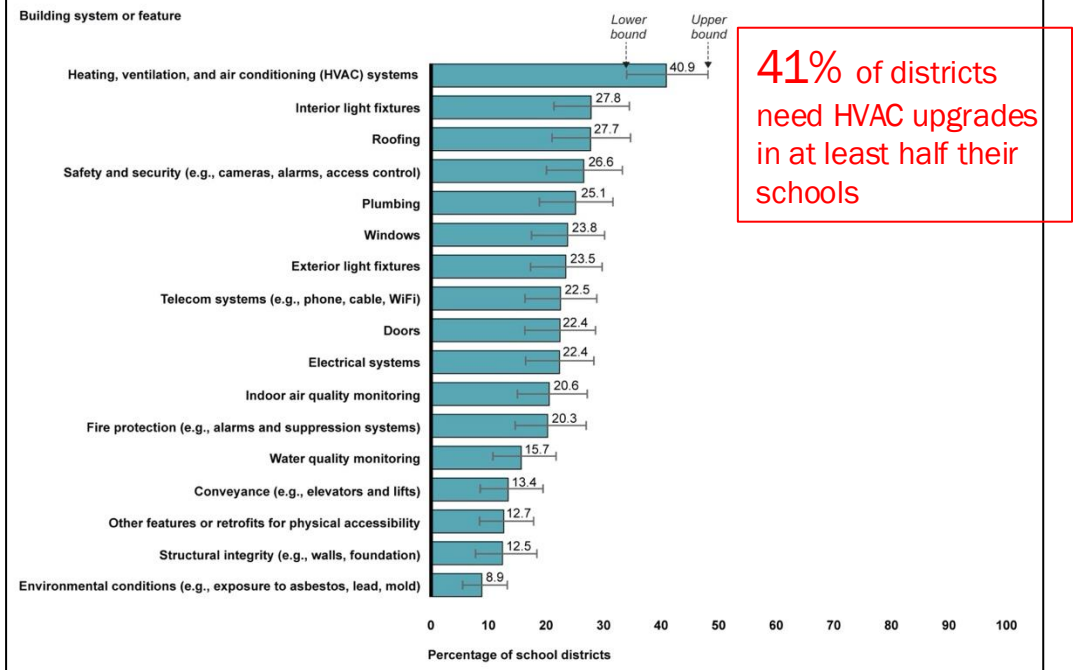
National Association of State Energy Officials 2024 Report: Energy Efficient and Healthy K-12 Public School Facilities Link to Report

June 2020 Report: School Districts Frequently Identified Multiple Building Systems Needing Updates or Replacement (Study Completed before the Pandemic)

GAO surveyed districts and states about common school facilities' issues and priorities and found:

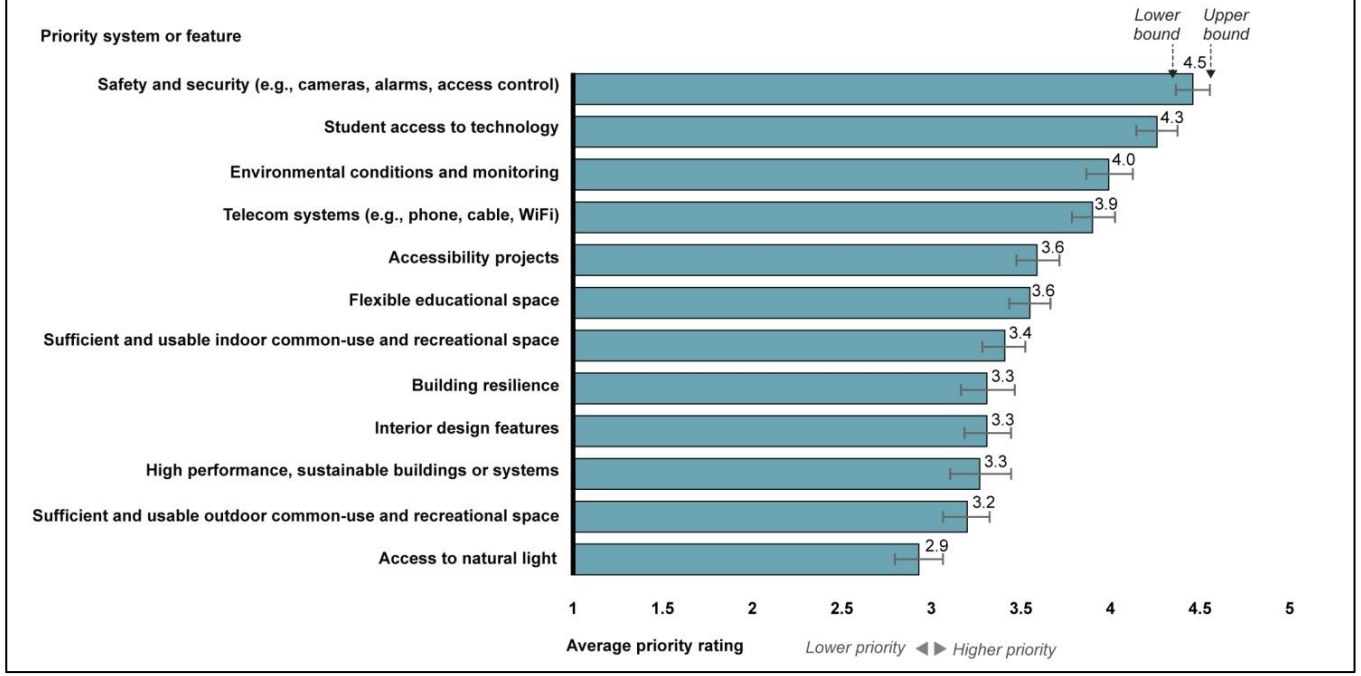
- Districts' highest priorities for school facilities were **improving security, expanding technology, and environmental conditions and monitoring.**
- About half of districts needed to update or replace multiple systems like heating, ventilation, and air conditioning (HVAC) or plumbing
- An estimated one-third of schools needed HVAC system updates

Figure 2: Estimated Percentage of School Districts in Which at Least Half the Schools Need Updates or Replacements of Key Building Systems or Features

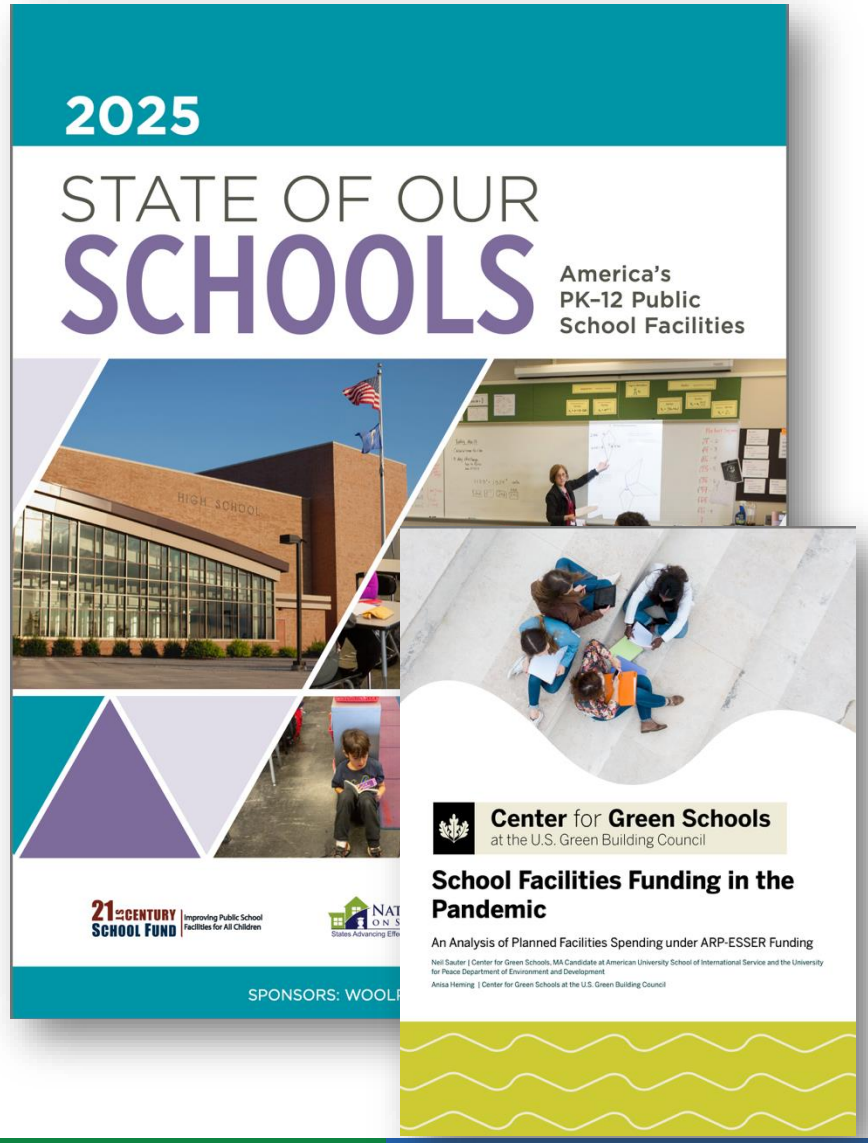


41% of districts need HVAC upgrades in at least half their schools

Figure 10: School Districts Estimated Priority Rankings for School Building Systems or Features When Updating or Renovating Facilities



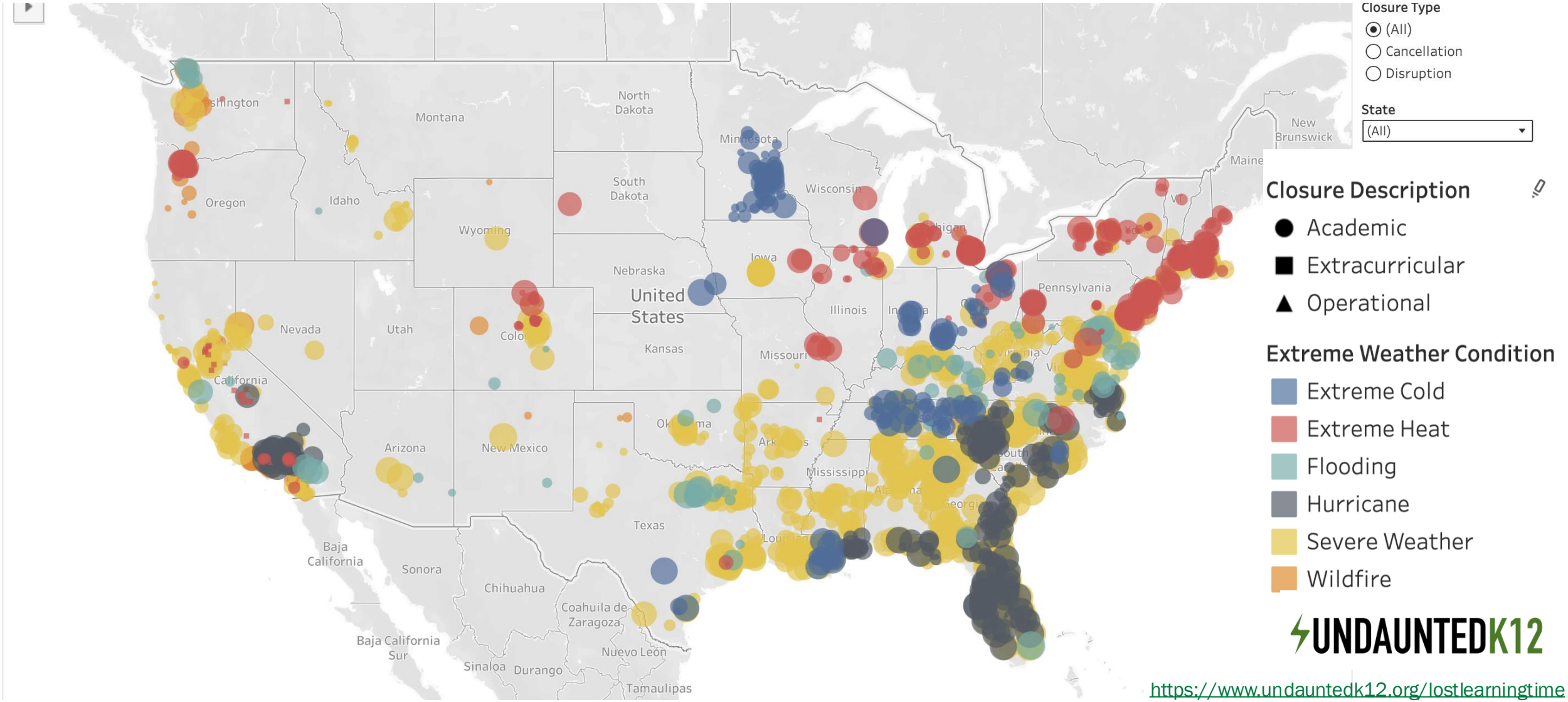
Unfortunate Facts about our School Infrastuructre



- Our average school is **50 years old**
- 2021 Annual School Infrastructure Spending Gap = **$85 Billion**
- 2025 Annual School Infrastructure Spending Gap = **$90 Billion**
  - **$34 Billion** in O&M Gap
  - **$56 Billion** in Capital Gap
- **$5.5 Billion** of ESSER funds were spent on HVAC

1 out of 10 students have asthma

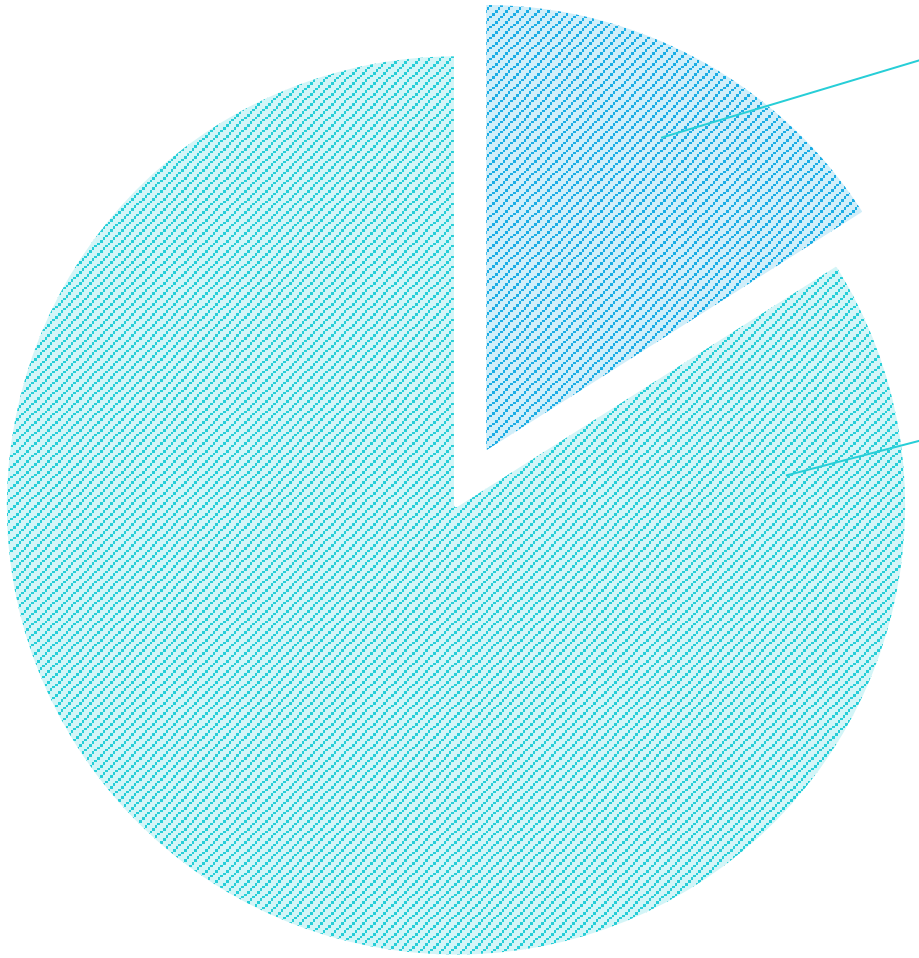
Lost Learning Weather Related Events



1975 Oldsmobile Cutlass

2024 Tesla Model Y

Factors affecting the learning progress of students



- **16%: Quality of the Classroom Environment**

- **84%: All Other Factors**
  - Socioeconomic
  - Teacher quality
  - Family Support
  - Nutrition
  - Sleep
  - Etc.

Clever classrooms: Summary report of the HEAD project
Authors: Barrett, PS, Zhang, Y, Davies, F and Barrett, LC
ttp://usir.salford.ac.uk/35221/

QUATTROCCHI KWOK ARCHITECTS

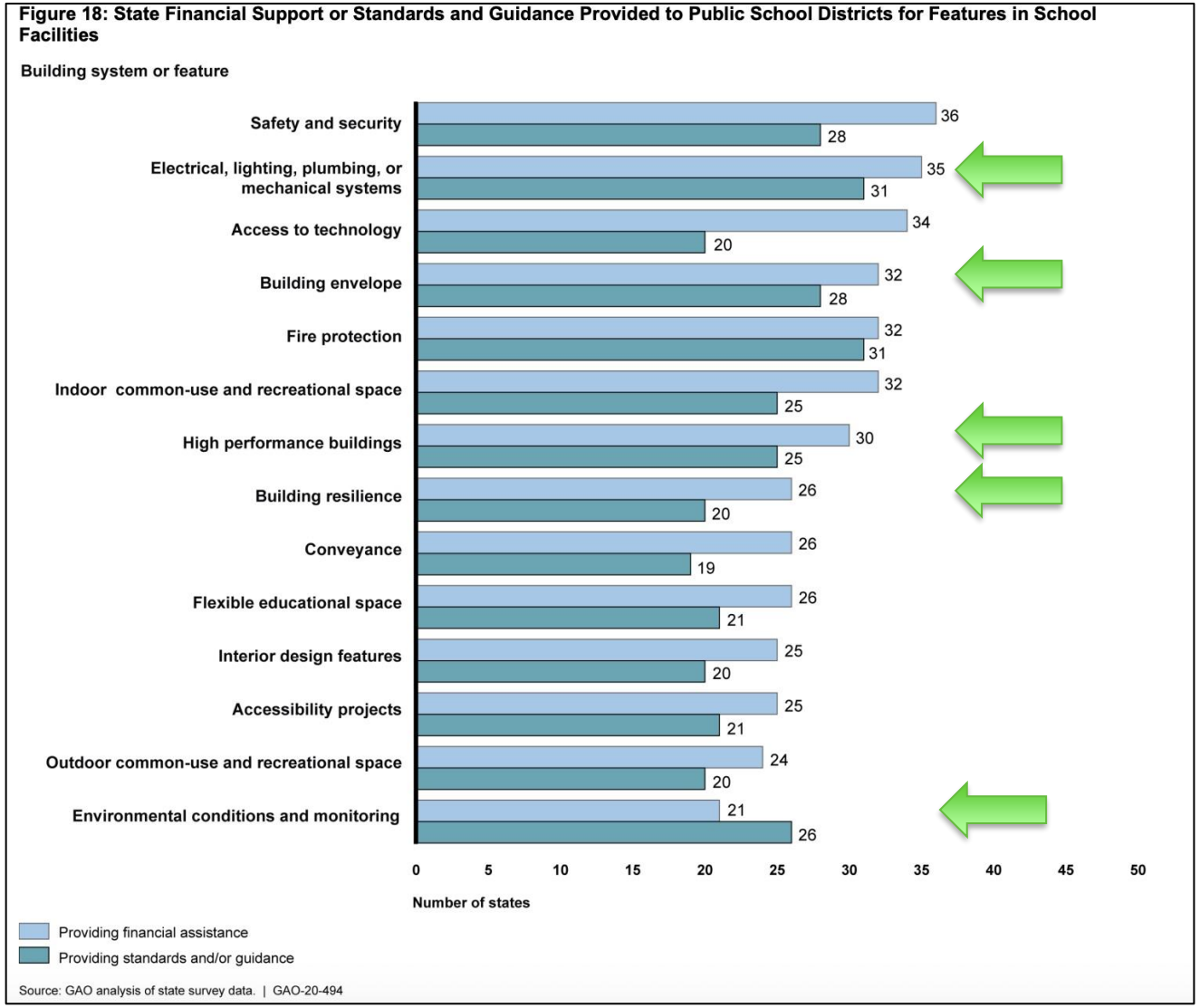
June 2020 Report: School Districts Frequently Identified Multiple Building Systems Needing Updates or Replacement (Study Completed before the Pandemic)

Performance contracts invest **~6-8 billions of dollars a year** on building and renovating facilities at the nearly **100,000 K-12 public schools** nationwide.

ESPC can address five of the fourteen primary features of schools

- Electrical/Lighting/Mechanical/Plumbing
- Building Envelope
- Building Resilience
- High Performing Building
- Environmental conditions and Monitoring

See the full report here



About Energy Savings Performance Contracting (ESPC)

What is ESPC?

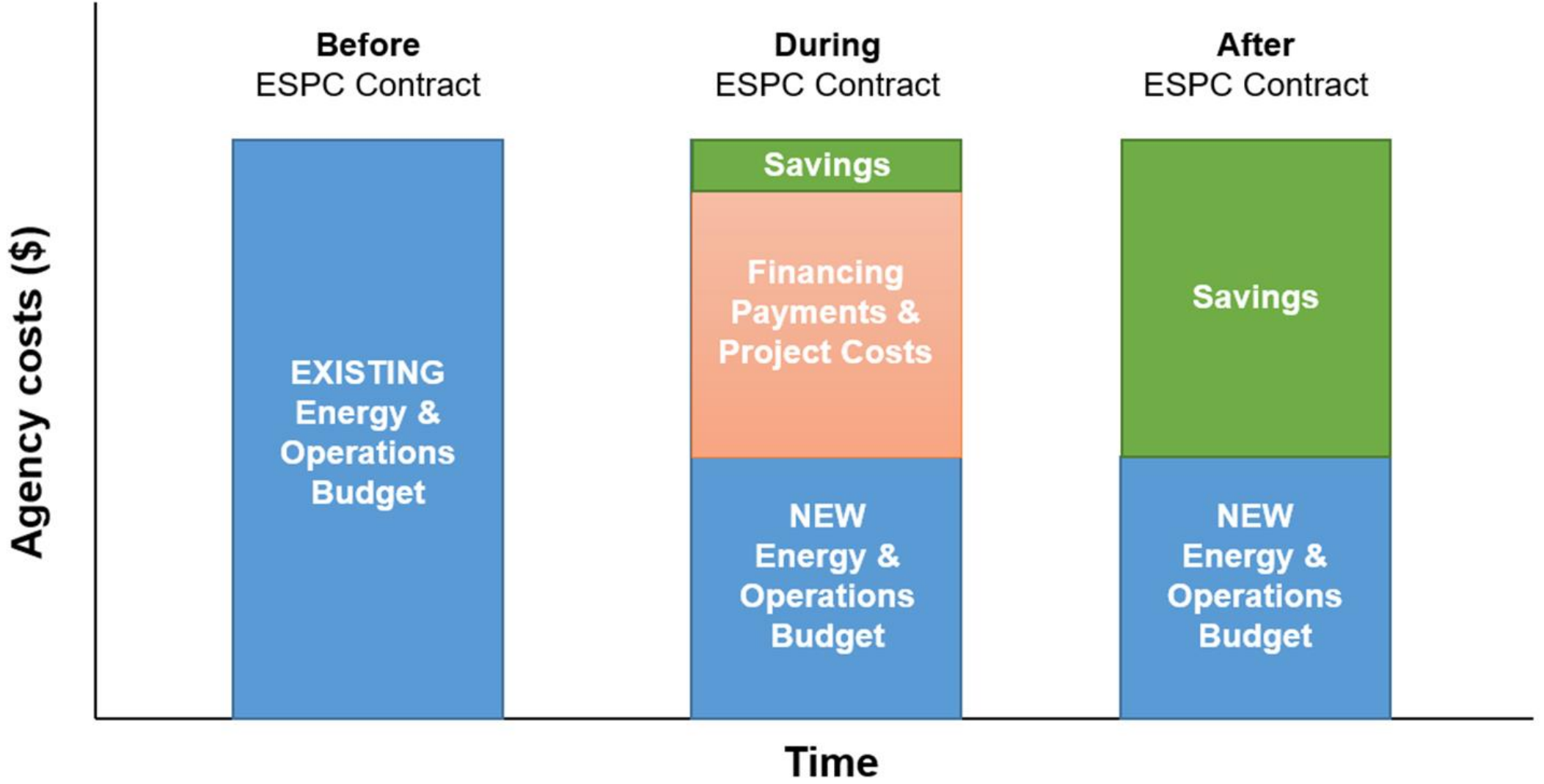
The use of guaranteed savings from the maintenance and operations budget (utilities) as capital to make needed upgrades and modernizations to your building environmental systems, financed over a specified period of time."- United States Department of Energy – 1999

"ESPC is a financial mechanism used to pay for today's facility upgrades with tomorrow's energy savings – without tapping your organization's capital budget. Done properly, it has the performance of a hedge fund, with the risk of a T-bill." - Chris Halpin

A version of **design-build** contracting, with a focus on guaranteed energy savings.

What is ESPC?

Budget Cost Neutral



ESPC Roots

Origins & Purpose

Energy Efficiency and MUSH **ESPC projects emerged in the late 1970s–1980s** in response to energy crises and aging public infrastructure. (Source: DOE Better Buildings Solution Center)

ESPC offered (and offers) **a risk-averse, budget-neutral** financing mechanism to **overcome barriers for K12 Schools:**

- Long procurement cycles
- Strict budgets
- Conservative fiscal cultures
- Risk Aversion

Benefits to the MUSH Market

- **Budget-Friendly Modernization**: Enables upgrades without new taxes or bond measures.
- **Guaranteed Results:** ESCOs assume performance risk through contractual savings guarantees.
- **Job Creation:** Drives demand for skilled trades and technical jobs.
- **Resilience Leadership:** Improves community resilience to climate impacts like Extreme Heat.
- **Operational Efficiency:** Reduces long-term costs, freeing up funds for core services and educational mission.
- **Improved Environments:** Enhances comfort, safety, and productivity while lowering emissions.

ESPC: A Resilient Model Over Time and Through Change

ESPC has proven resilient across:

- Fluctuating federal/state funding
- Political transitions
- Economic downturns

It has Bipartisan Appeal:

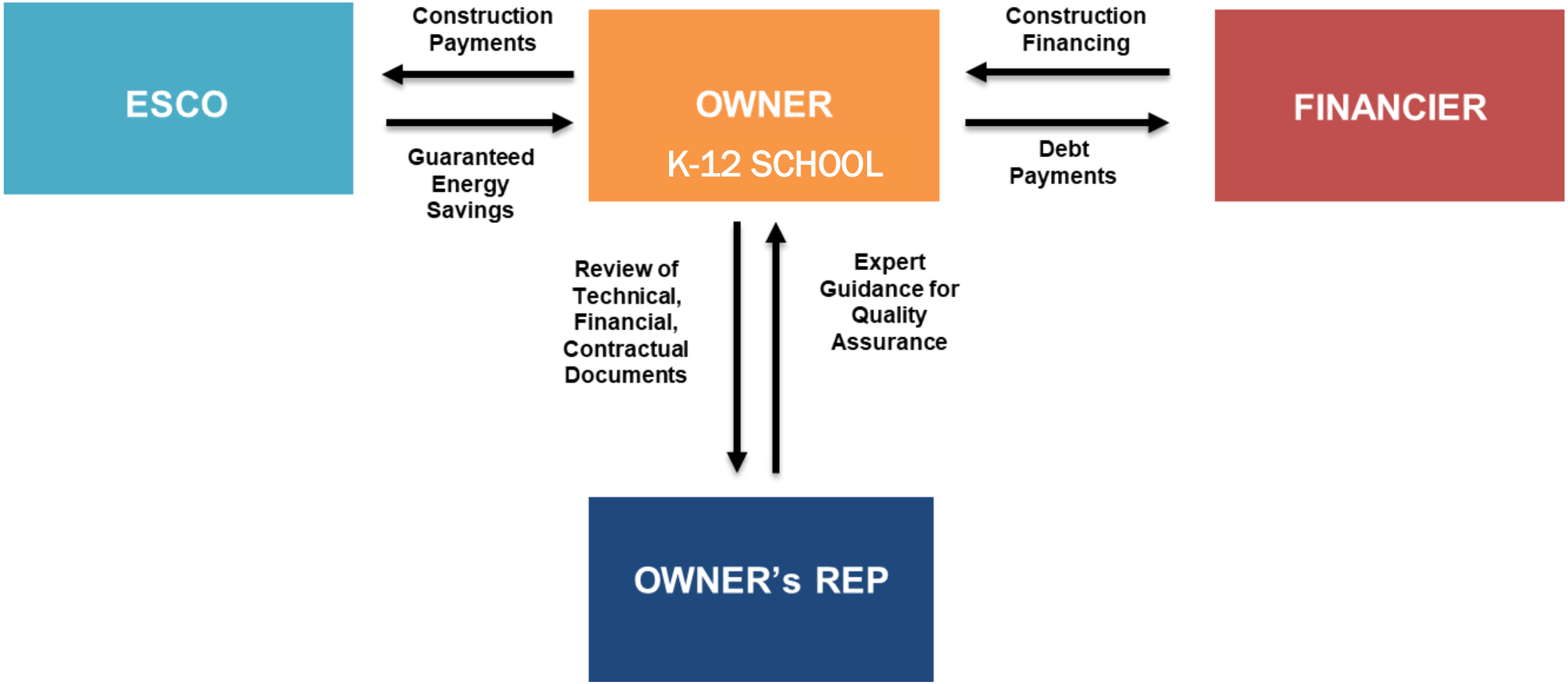
- **Privately financed** (does not require taxpayer dollars)
- Adopted in both red and blue states
- **Supports local economies** by engaging contractors and suppliers.
- Ensures **transparency through rigorous Measurement & Verification (M&V)**
- **Reduces operating costs** for public sector organizations with over-burdened budgets

Result:

Over $30 billion in cost-effective upgrades have been financed through ESPCs across 45 states. Source

ESPC's budget-neutral structure and measurable results make it a politically neutral and fiscally responsible approach.

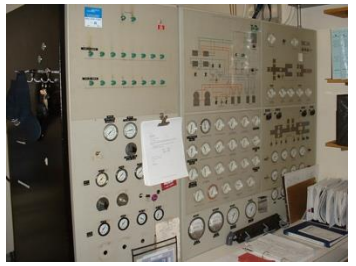
ESPC Roles and Responsibilities



How performance contracting can address the issues faced by schools today

K12 Goals and Issues Faced… and ESPC Solutions

Lack of available capital for Critical Education Mission	Energy and dollar savings can be reallocated to mission critical activities Untapped savings in Energy Budget is Funding Source for K12
Risk Averse	Guaranteed Energy Savings Measurement & Verification Included
Equipment Failure and Outdated Infrastructure	Retrofit lighting, HVAC, building envelope, HVAC, Building Envelope Address deferred maintenance Enhanced comfort and safety, **maximize learning time.**
Lack of Resources to assess and focus	Building audits Turn-key installation
Sustainability and Resiliency goals	Energy efficiency, solar PV, battery storage, EV fleet conversion Recognition and awards



Resilience that can be facilitated through ESPC

Facility resilience:	• Infrastructure and equipment upgrades. Maximize learning time.
Grid resilience:	• Avoid outages by reducing demand, contributing through DR, or islanding.
Organizational resilience:	• Improve economics and wellbeing.
Community resilience:	• Enhance health, equity, and safety. Schools can become a place of refuge during extreme events.

Why ESPC Works for K–12 Districts: The Power of Bundling

- A key benefit of an Energy Savings Performance Contract (ESPC) for K–12 schools is the ability to bundle Energy Conservation Measures with different payback periods into a single, guaranteed project.

- Low-payback measures like lighting and controls produce immediate savings. Those savings help finance longer-payback investments that improve comfort, reliability, safety, and resilience. **Districts can address deferred maintenance and aging infrastructure without using capital budgets!**

Payback	Typical ECMs in K–12 Schools
Low	LED lighting (interior & exterior) Lighting controls (occupancy sensors, daylighting) Building automation system (BAS) upgrades and optimization HVAC controls (VFDs, improved scheduling) Retro-commissioning Low-flow plumbing fixtures
Medium	HVAC equipment replacements (RTUs, boilers, chillers) Energy / heat recovery systems Targeted building envelope improvements (air sealing, insulation) Domestic hot water system upgrades Electrical efficiency (transformers) and safety improvements
High	Central plant upgrades or replacements Solar PV systems Energy storage and backup power Electrification of heating systems Deep envelope upgrades (windows, façades) Resilience and microgrid solutions

Typical K-12 ESPC Scopes & Case Studies

Hawai'i State Energy Office and Department of Education, Hawai'i

The Hawai'i State Energy Office and Hawai'i Department of Education have teamed up to develop and implement an ESPC pilot project as part of the Ka Hei Program. One school complex on Maui and two on the Big Island of Hawai'i. Started one in 2024, but it didn't move forward due to multiple issues.

HSEO/HDOE recently approached the USDOE/ESC ESPC Campaign about providing technical assistance. The assistance will include:

- Revising the State's Invitation for Proposals (IFP) to the three pre-qualified ESCOs:
  - "Pick a Partner, not a Project" by focusing on qualifications and indicative pricing.
  - Eliminate an audit as part of submission to reduce the burden on ESCOs and HDOE.
  - Provide template for transparent open book pricing.
  - Utilize USDOE's Risk, Responsibility, and Performance Matrix.
  - Utilize USDOE's Comment, Response, Resolution spreadsheet.
  - Provide a "technical facility profile" as an IFP Appendix for background.
  - List objectives, and chronic O&M issues.
  - Include IGA Agreement and Energy Services Agreement to reduce future contractual issues.
  - Require evaluation of full O&M services.
- Assist the Energy Office issue an IFP to select and hire Owner's Reps to provide QA.
- Assist with educating all financial, management, and technical stakeholders on ESPC.
- Ensure energy and water efficiency, healthy environments, and resilience are addressed.

Rockingham County School District, North Carolina

The Rockingham County School District was facing the challenge of aging facilities and systems. A Guaranteed Energy Savings Performance Contract including lighting and HVAC upgrades, water conservation, and enhanced indoor air quality breathed new life into Rockingham County Schools and provided the District significantly more control over its facilities.

Scope and Benefits

- Improved indoor air quality
  - HVAC deferred maintenance
  - Installed a new chiller and replaced two Air Handler Units
- LED lighting upgrades
- Upgraded digital controls
- Water conservation
  - Upgraded plumbing fixtures
  - Submetering for irrigation
- Insulated chilled water piping (addressed deferred maintenance)
- Streamlined internal operational processes

- 21 School Sites, 6 District Locations
- 12K+ student population
- 2,330,216 sq feet addressed as part of project

ESCO: Johnson Controls Inc.
OR: Locklear, Locklear, and Jacobs

Link to more information on this case study

Telluride School District, Colorado

Telluride School District modernized its facilities while preserving the town's historic character. The project improved energy efficiency, resilience, and sustainability by integrating renewable energy, battery backup, and critical infrastructure updates—ensuring schools stay operational year-round.

Beyond education, these buildings serve as community hubs, hosting civic events and emergency operations. With strategic energy savings and grant funding, the district reduced utility costs by 33%, securing long-term benefits for students and the broader Telluride community.

Scope and Benefits

- Installed LED lighting for improved safety and energy efficiency inside and out
- Upgraded snow melt controls for enhanced energy efficiency
- Added PV Solar to generate on site renewable energy to power the school
- Reduced energy costs by utilizing the battery storage to offset peak demand charges
- Installed EV charging stations for visitors and staff
- Upgraded transformers to high-efficiency models to lower energy consumption
- Collaborated with local historical societies to preserve the exterior character
- Improved Building Envelope by eliminating drafty conditions and sealing gaps
- Replaced/repaired roofs to enhance facility integrity
- Created independent on-site power supply for uninterrupted operation in emergencies

Link to more information on this case study

Project Stats

- Cost of Project: $8,858,190
- Year one utility and O&M savings: $92,795
- Incentives, rebates, and grants: $1,095,460
- Reduction in annual utility costs: 33.0%

ESCO: ESG

Red Clay Consolidated School District, Delaware

Red Clay Consolidated School District Solar Monitoring

- As part of the Red Clay Phase 2 ESCO project, 1.4 megawatts AC of solar were installed at 6 buildings in the district.
- To validate the performance of each of these systems, a solution had to be developed to collect the data necessary to comply with the ongoing Measurement and Verification requirements. This data includes power production of the array and on-site weather conditions which impact power production.
- The result is a system that collects real-time performance data and allows for remote diagnostics of the systems. This will allow the M&V team to create annual production reports of the systems that validate savings, according to ASTM standards, and show the impact they have for the district.

- The solar arrays were funded through the Solar for School Districts grant and Performance Contracting Program from Energize Delaware.

ESCO: Seiberlich Trane's Electrical Subcontractor

Clark County School District, Nevada

Clark County School District, serving Las Vegas and the surrounding area, is one of the largest school districts in the nation. Rising energy costs, a backlog of deferred maintenance, and sustainability goals necessitated a district need for a comprehensive facility investment strategy. This project will achieve economic, environmental, resiliency, comfort, safety, and deferred maintenance goals. It facilitates scalable future growth and technology implementation for the District and will improve the learning environment for students and faculty, emphasizing sustainability and long-term efficiency, and deliver guaranteed operational savings to the District.

Scope and Benefits:

-Safety Improvements, user friendly, wireless control and increased long-term controllability for:

- LED Lighting
- Building Automation Systems / Controls
- Dwell time adjustments
- Motion activation
- Daylight Harvesting

-Waste management/efficiency analysis to reduce waste in materials, storage, and transit miles

-Decreased O&M costs and burden

-Futureproofing

- To reduce need for rework of an additional ESPC by deploying BACnet
- To expand into HVAC and renewable energy in later phases of work

-276 Local Subcontractors Engaged

->40% Subcontractors are MWBE

-IPMVP Option A

•Student population: 300,000

•Fifth largest District in the US

•205 campuses retrofitted as part of project

•23,639,650 square feet addressed as part of project

ESCO: Willdan Engineering
OR: NV5

Link to more information on this Case Study

Getting started with ESPC

Picture the Possibilities

Brainstorm improvements needed or wanted, based on published plans or Board/Community goals.

Energy Conservation Measures (ECMs):

- ❑ LED lighting & controls
- ❑ HVAC retro-commissioning or replacement
- ❑ Heat-pump chillers/water heaters/ electrification
- ❑ Building automation system upgrades
- ❑ Demand response
- ❑ Water fixture/irrigation retrofits
- ❑ Solar PV / carports
- ❑ Battery Energy Storage System
- ❑ Building Envelope
- ❑ …add your own ideas:

Non-Energy Goals:

- ❑ Deferred Maintenance
- ❑ Comfort
- ❑ Carbon reduction goals
- ❑ Resiliency
- ❑ Compliance
- ❑ Training O&M Staff
- ❑ …add your own ideas:

Assemble an ESPC Stakeholder Team for K12

APPROVING AUTHORITIES (Int/Ext)

You need these folks fully bought in and supportive of the rigor the team will provide to help mitigate risk and see that you get what you set out to achieve.

PROJECT CHAMPION (Int)

Typically, the ringleader or champion for the concept. Required to help assemble needed resources, tools, topical expertise.

OVERSIGHT (Ext)

This role is becoming far more common. Provide experience, insight and education along every step of the way. Professional ESPC Owner's Reps can save time, money, and aggravation.

LEGAL (Int/Ext)

Customize documents, review all ESCO-provided input to ensure compliance and avoid contradictions.

CONSTRUCTION (Int)

Require that these projects meet or exceed your quality standards and BAU documentation and process. Assist with witnessing, approvals and invoice review.

FINANCE (Int/Ext)

Know how the money moves from operating cost to note repayment and how to manage incentives or other revenues. Commit to full term budgeting.

OPERATIONS, MAINTENANCE, REPAIR AND REPLACEMENT (Int/Ext)

Know what's needed, where the challenges are, what future requirements are to maintain guaranteed savings.

PROCUREMENT (Int)

Ensure a competitive procurement. Generally, this is two step; first for prequalified providers and later for each project.

Consider Technical Assistance

State and local ESPC Campaign partners are invited to set up a time to speak with an ESPC Subject Matter Expert for direct technical assistance. Discussion topics can be anything regarding an ESPC project or program, including specific questions on your project. **To request a meeting time,** please email espccampaign@hq.doe.gov .

"The ESPC Campaign and ESC are providing technical assistance as we explore how energy performance contracting can address the unique needs of schools across the islands, from deferred maintenance to solar and energy efficiency investments that advance the State's clean energy targets in an economically feasible way. This work centers the Department of Education's commitments to equity and education and is helping Hawai'i DOE build a strong, coordinated foundation for moving forward."

-Ryan Hee Wai, Energy Engineer, Hawai'i Department of Education

Q&A

Resources and Upcoming Events

Upcoming Events

- Structuring a State ESPC Program to Maximize Agency Participation
  February 17, 2026, 11:00am-12:00pm PST
- Using eProject eXpress to Track and Report ESPC Legacy Project Data
  February 18, 2026, 11:00am-12:00pm PST
- Using eProject eXpress to Track and Report ESPC Legacy M&V Data
  March 18, 2026, 11:00am-12:00pm PST
- Green Schools Conference

  February 17-19, 2026, San Diego, CA

Relevant Past ESPC Campaign Events

Training 01: Intro to ESPC - A High Value Tool for Public Agencies

Workshop 02 - Working with Internal and External Stakeholders to Ensure a Successful ESPC Project

Training 06: Maximize Your ESPC Success – Review and Apply Lessons Learned

Jumpstart Your ESPC: A Practical Guide for MUSH Market Champions

Ally in Your Corner: Working with Owner's Reps

Webinar: ESPC Resource Tour

Resources: ESPC Campaign

The Energy Savings Performance Contracting (ESPC) Campaign engages states, local governments, school districts, universities and colleges, hospitals, and other market stakeholders to:

- **Support** the use of performance contracting to increase efficiency, modernize public buildings, reduce utility expenses, increase resilience, and meet lead-by-example goals
- **Share and Leverage Practical Resources** to strengthen ESPC and measurement & verification (M&V)
- **Amplify and Implement Best Practice Approaches** for ESPC projects and programs
- **Demonstrate Impact** with measured and verified energy and cost savings
- **Showcase Achievements** and share examples of successful ESPC implementation

- ✓ *Expert-led Trainings*
- ✓ *Webinars*
- ✓ *Peer Exchanges*
- ✓ *"Ask-an-Expert" Office Hours*
- ✓ *Resource Library*

Case Study Submission Form Here

Complete the Expression of Interest form to obtain a Partner Agreement

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Thank you!

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