



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy



Classrooms as Community Clean Energy Beacons

NASEO

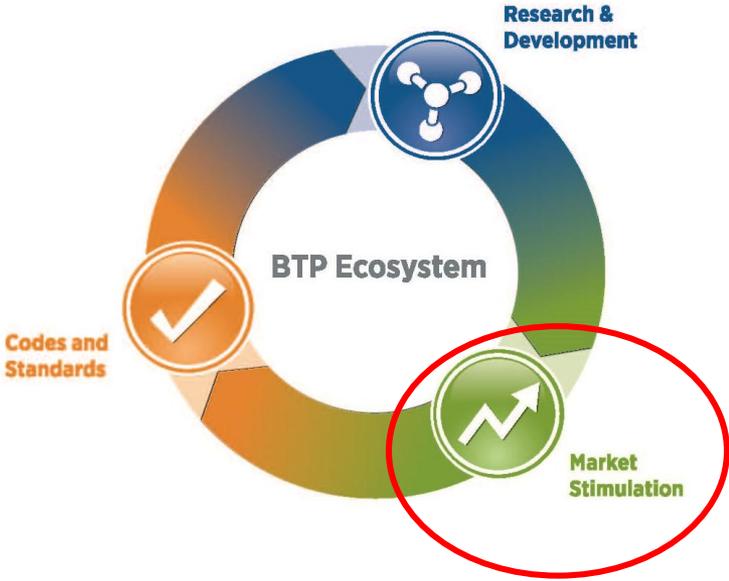
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CBI Mission: Accelerate voluntary uptake of significant energy performance improvements in existing and new commercial buildings.

CBI Vision: A commercial buildings market where energy performance is a key consideration during construction, operation, renovation, and transactions, and zero energy ready commercial buildings are common and cost-effective.



Why Schools? Opportunity Defined

Economic Facts

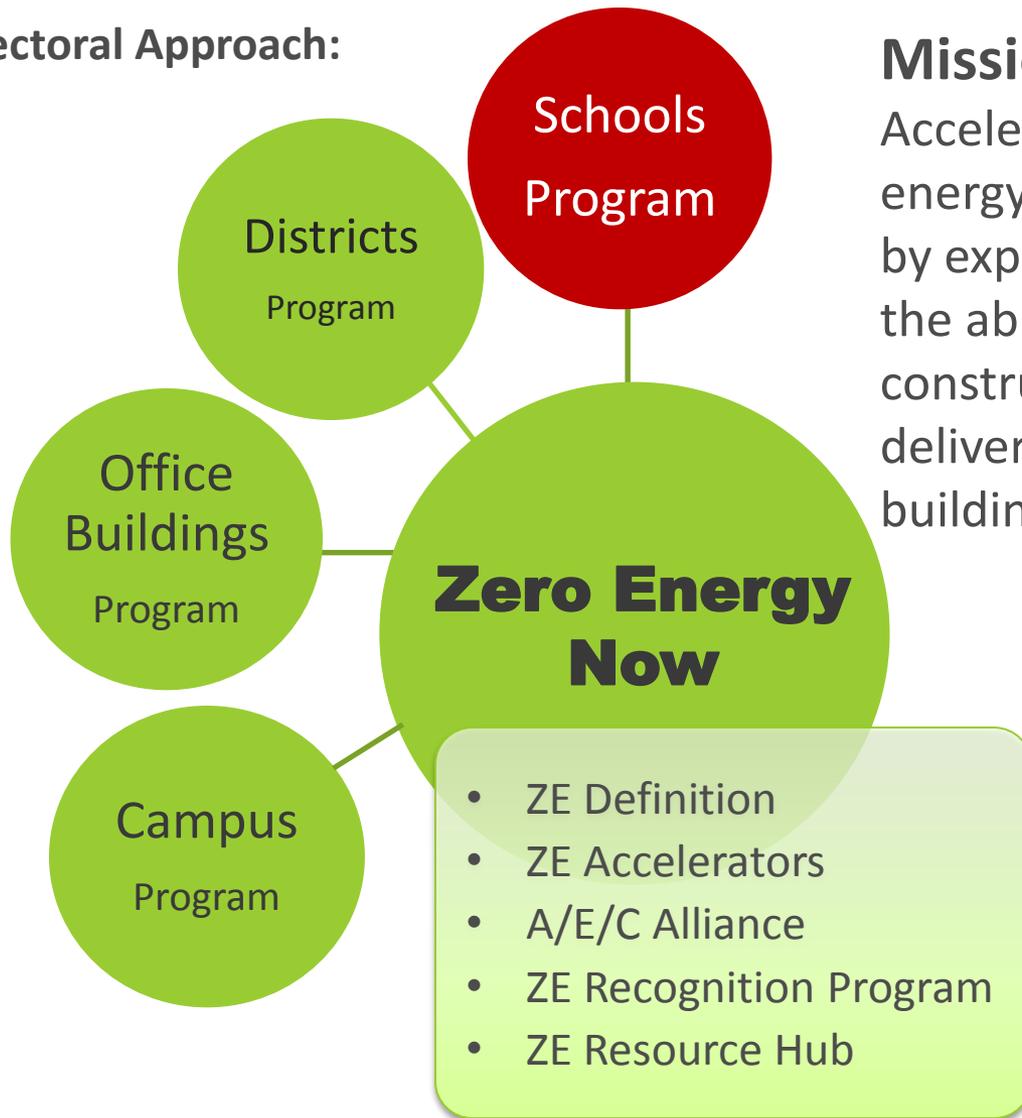
- Schools spend more on energy than on textbooks and computers, which is second only to salaries (DOE 2007).
- Taxpayers spend **\$6 billion**/year on utilities for schools, and a quarter of this cost can be saved by implementing energy efficiency measures.
- 3rd largest sub-sector of commercial building energy usage = **10% of the total energy** consumption
- **\$14 billion** in new construction

- Strong stakeholder involvement
- Good replication potential
- Pillars of the community
- Market transformation through new generation education
- The cost of energy can be reduced to provide much needed funds for other school programs



DOE - Zero Energy Now

A Sectoral Approach:



Mission

Accelerate the development of zero energy commercial buildings in the U.S. by expanding both demand for ZEBs and the ability of the building design, construction, and operation industry to deliver extremely high-performing buildings.

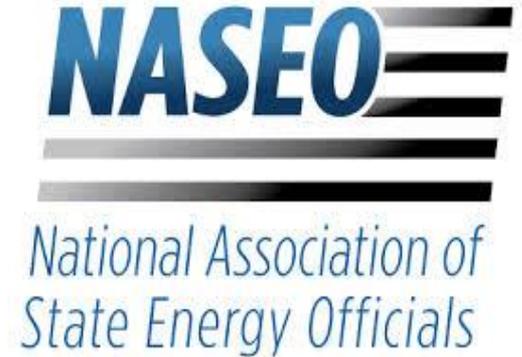
Each Program to include:

- Partnerships – sign agreements
- **Allies – support partners**
- ZE Design Strategies
- Technical resources
- Case studies

DOE & NASEO Collaborate on Partnership Framework

NASEO's commitment to Zero Energy Buildings efforts:

1. Leadership role in working with State Energy Offices, local governments, and private sector partners including:
 - developing, funding, and hosting **the nation's first national Zero Energy Buildings forum in 2013**
 - conducting congressional staff briefings on ZE buildings
 - creating case studies
 - Helped develop and promote DOE's standard definition of Zero Energy Buildings
 - conducting webinars on NASEO's policy pathways to zero energy facilities
2. Developing a "Zero Energy Schools State Policy and Program Best Practices" guidance document
 - based upon the Kentucky State Energy Office's groundbreaking schools market transformation
3. Preparing a Zero Energy Schools policy issues briefing memo
4. Collaborating with various partners to identify and develop markets that will promote the long-term viability and sustainability of ZE schools in local communities.
5. Identifying those interested in pursuing Zero Energy and high performance school programs and projects.



K-12 Zero Energy Accelerator Overview

Program Mission: Accelerate the development of zero energy schools in the U.S. by expanding both demand and the ability of the building design, construction, and operation industry to deliver these buildings.

- Goals:**
- To establish strategies and methodologies such that partners (states & school districts) can begin to implement zero energy or zero energy ready K-12 schools.
 - To transform K-12 schools such that zero energy or zero energy ready is routine and accepted.

Launch Date: October 2016

Length of Accelerator 3 years

Potential Partners: states, counties and districts

Key Stakeholders: NASEO, USGBC, NBI

U.S. Dept. of Education, A4LE, others

Value Proposition to Partners

- ▶ **Exchange** lessons learned with other leading Partners how to maximize economic, environmental, and educational benefits through new school planning and construction.
- ▶ **Collaborate** with DOE to identify barriers and receive technical design guidance.
- ▶ **Be leaders** in Zero Energy Buildings. Introduce and promote ZE schools to local communities
- ▶ **Bring developed tools** and resources back to the community that will lead to increased number of energy efficient schools while also maximizing economic and environmental benefits
- ▶ **Receive national recognition** for leadership, innovation, and commitment to Zero Energy Buildings.

Zero Energy K-12 Schools

Key Barriers

TECHNICAL

STRUCTURAL

FINANCIAL

STATUS QUO

Strategies

Access to Feasibility Study: Technical feasibility study shows that ZE schools are achievable using typical construction techniques.

Technical Design Strategies: Industry-based technical know-how, addressing best practices to achieve low levels of EUIs and plausible renewable energy options for all regions of the United States. Expected early 2017

Case Studies: show the viability of ZE schools by documenting success stories that demonstrate best practices of achieving EUIs that are so low that renewable energy could meet the remaining load.

Resource Hub: An easy-access online platform containing ZE technical data, case studies and network of organizations, school stakeholders, and architectural and engineering communities.

Accelerator structure for the program



National Partners

Eg: NASEO & other organizations

Provide key support: Help recruit partners, outreach, industry education

**U.S.
DOE**

Implementing Partners

States/ School districts

*Main role:
Provide resources
& national
recognition
through BBA*

**Accelerate
construction
of K-12 Zero
Energy
Schools**

Develop
state/district level
(roadmap for ZE)

Identify schools
with ZE goal

Implement
roadmap

Partnership Agreements

Become a Partner

COMMITMENTS (Partners)

- **Appoint** an Accelerator point of contact
- **Develop** processes for design, construction and funding to implement and replicate Zero Energy schools.
- **Identify** school projects that will be or have the potential to be Zero Energy.
- **Share** lessons learned and best practices with other Accelerator partners
- **Provide** feedback on DOE Zero Energy resources, tools and services
- **Sponsor** 10 stakeholders per year seeking to visit the closest Zero Energy school (or schools with an EUI less than 25 kBtu/sqft).
- **Report** successes and status (quarterly)
 - Establish a EUI goal and show the progress towards that goal.

COMMITMENTS (DOE)

- **Appoint** an Accelerator point of contact
- **Support** partners in developing and documenting processes for Zero Energy K-12 schools (implementation models)
- **Develop** resources necessary for partners to successfully achieve DOE's energy targets
- **Provide** access to relevant precedent case studies for Zero Energy buildings
- **Provide** partners guidance on how to best work with utilities and incentive programs
- **Recognize** partners and local school districts for their leadership

THANK YOU

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