

# Green Grow the Buildings: Lessons Learned from the K-12 School Buildings Sector

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Presented by:  
Don Fudge  
Northeast Energy Efficiency Partnerships  
TRC Energy Services

High Performance  
Schools Exchange Northeast Energy Efficiency Partnerships

# Sector-Specific Energy Efficiency Programs

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- State buildings/public buildings of cities and towns
- Health Centers and Hospitals
- Colleges and Universities
- Affordable Housing
- P-12 schools



# Why Sectors?

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- *Governed by federal and/or state regulations support*
- *unique services ...but similar within the sector*
- *Owners are public entities*
- *Capital expenses funded by bonds*
- *Operating budgets tight*

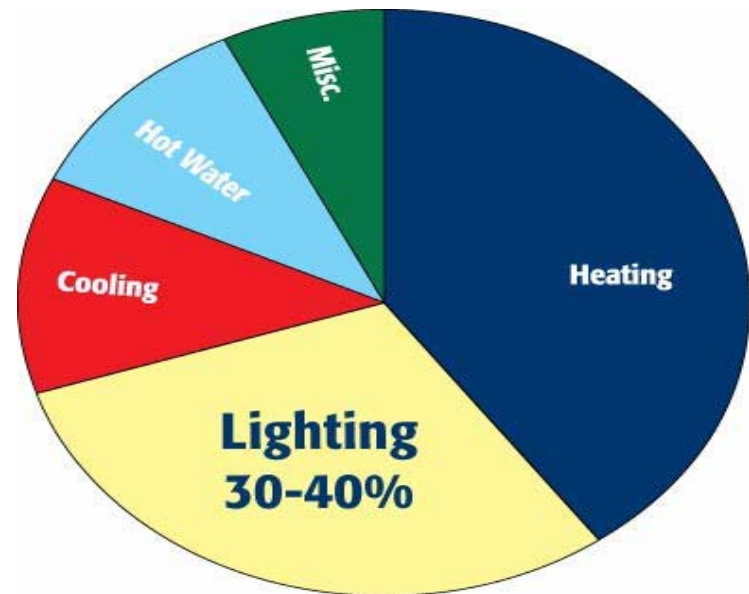
# The K-12 Sector

- State education department regulations
- Occupants - Children
  - acoustics,
  - lighting,
  - thermal comfort,
  - IAQ
- Building use
- Owners...school building committee and eventually the community
- Self-selected/specialized design firms serving the market



# Schools Programs in the Northeast

- All program administrators have K-12 school programs
- Adapted from/same as commercial building programs
- Personnel assigned
- Outreach and promotion programs in place
- BOC – building operator training to ensure continued energy saving



# Schools Programs in the Northeast

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Provide:

- Technical assistance
- EE incentives and rebates
- Renewable technologies

# Benefits of Sector Approach

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- Focused marketing/promotion to school owners
  - Superintendents
  - Business Officers
  - Facilities managers
  - State education Facilities Office
- Partner with state energy offices
- Partner with other advocates



# Barriers to Program Access in K-12 Schools

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- State school construction regulations and funding guidelines
- Design professionals wary of “above code”
- Primary decision-makers (School Building Committees) are amateurs in building
- Communities do not want to pay for change
- Lack of substantive performance data
- Most projects in the Northeast are retrofits

# The Landscape in 2008

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- State and City Executive orders/legislation requiring publicly-funded buildings to reduce energy use – 15% to 20%
- Development and use of Design Rating Systems
  - LEED/LEED for Schools
  - CHPS Collaborative for High Performance Schools
  - Advanced Buildings: *Benchmark* and *Core Performance*
  - *NJ 21<sup>st</sup> Century Design Guide*
- Programs re-designed to support voluntary programs

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# The high performance schools landscape in the Northeast Today

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*Maine* – legislation to reduce energy usage by 20% from ASHRAE 90.1- 2001 in state-funded buildings

- Department of Education chooses New Buildings Institute *Benchmark for Maine Schools* for prescriptive standards
- Efficiency Maine provides design support, systems incentives, commissioning support and third party testing for compliance

*Massachusetts:* Renewable Energy Trust - Green Schools Initiative buys license from CA and writes MA- CHPS

- Portions incorporated into Massachusetts School Building Authority Construction Regulations
- Added additional building aid (up to 3%) if building meets MA-CHPS Verified

# The high performance schools landscape in the Northeast Today

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*New York* –Executive Order to reduce energy use in state-funded buildings

- NYSERDA buys license from CA, writes NY- CHPS and turns over to NY State Education Department for use as a voluntary appendix to the NYSED Planning Standards
- NYSERDA continues support of NY-CHPS
  - NY-CHPS becomes part of New Construction Programs
  - develops Comprehensive Maintenance Planning Tool
  - Offers free energy benchmarking service
  - Develops HP School Design Training for A/E firms
  - Offers BOC for school personnel
- NYC writes NYC Green School Guidelines

# The high performance schools landscape in the Northeast Today

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- *Northeast HPS Exchange* (utilities and education departments) buys license from CHPS for CT, ME, NH, RI, VT and writes NE- CHPS
  - RI incorporates NE-CHPS into School Construction Regulations – 20% over code required
  - CT law requires K-12 schools to be designed to LEED-Silver or the equivalent
  - NH law provides 3% of construction cost to state aid amount for meeting NE-CHPS
  - VT Committee recommended NE-CHPS as voluntary standard, no legislative action yet

High Performance

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# The Massachusetts Experience

- MTC...Green Schools Initiative writes MA-CHPS
- Twenty Pilot Schools
  - Feasibility study assistance
  - Design assistance
  - Renewable technologies incentives
  - VEIC/HFMH cost-benefit study
  - building operator training
  - measuring performance
- Program administrators
  - equipment incentives/rebates...renewable
- Continuing Outreach
  - Marketing
  - Conferences
  - Materials
  - DVD



# Lessons learned

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- Have to sell better learning environment...EE and cost savings 2<sup>nd</sup>
- Incremental cost remains a myth/hurdle
- No one wants to be first
- SBC programs must be promoted...easy to access...assistance provided
- Must get in at start of project
- Capital budget/operations budget...performance contracting

# Key sites

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- USGBC LEED-NC, LEED for Schools: [www.usgbc.org](http://www.usgbc.org)
- CHPS: [www.chps.net](http://www.chps.net)
- Sustainable Buildings Industry Council: [www.sbicouncil.org](http://www.sbicouncil.org)
- New Buildings Institute: [www.newbuildings.org](http://www.newbuildings.org)
- MTC and MA-CHPS: [www.masstech.org](http://www.masstech.org)
- NY-CHPS and HP Schools Training: [www.nyserda.org](http://www.nyserda.org)
- Northeast HPS Exchange NE CHPS: [www.neep.org](http://www.neep.org)