



***Kentucky Department for Energy Development
and Independence
Energy and Environment Cabinet***

Kentucky's High Performance School Journey

**2013 NASEO Annual Meeting
Denver, Co**

Kentucky's High Performance School (HPS) Journey ***(It's Market Transformation)***

- Partnerships
- Education
- Persistence

It's a crawl, walk, jog, run process.....



Kentucky's High Performance School (HPS) Journey

- Partnerships

Department of Education

Education and Workforce Development Cabinet

Local School Districts

University of Louisville – Kentucky Pollution Prevention Center

Governor's Office

Legislators

School Board Association

School Plant Management Association

Energy Services Coalition

National Energy Education Development Project (NEED)

Local Architects and Engineers

US Green Buildings Council

ENERGY STAR – USEPA and USDOE



Kentucky's High Performance School (HPS) Journey

- Education

Who -(local decision makers)

Superintendents
Principals
School Boards
Facility Managers
Parents and Students
Local Architects and Engineers
Financial Officers

Why -

Explain Benefits
Manage Risk
It's more than Energy

What -

Acoustic Comfort
Commissioning
Day lighting
Energy Analysis Tools
Energy Efficient Building Shell
Environmental Site Planning
High Performance Electric Lighting
Environmentally Preferable Materials and Products
High Performance Heating/Ventilating/Air Conditioning (HVAC)

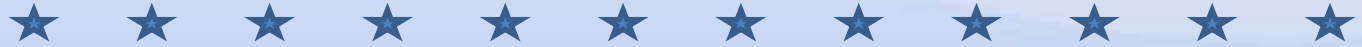
Renewable Energy
Safety and Security
Superior Indoor Air Quality
Thermal Comfort
Visual Comfort
Life Cycle Cost Analysis
Water Efficiency



Kentucky's High Performance School (HPS) Journey

"Our Path"

HPS Workshops



2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013



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High Performance School Workshops



Kentucky
**High Performance
Sustainable
Schools Workshop**

For School Administrators, Facilities
Directors, Architects & Engineers

**Thursday & Friday
March 23-24, 2006
Hebron, Kentucky**

Thursday, March 23, 2006

8:30 a.m. – 6:30 p.m.

- Characteristics and Benefits of High Performance Schools
- Kentucky Case Studies
- Site Visit to Twenhofel Middle School
- Reception

Friday, March 24, 2006

8:00 a.m. – 3:15 p.m.

- Site Visit to Caywood Elementary School
- Procuring a High Performance School
- The Cost of Building Green

Presenters include:

- Mark Ryles, Director of Facilities, Kentucky Department of Education
- Dr. Susan Cook, Superintendent, Kenton County Schools
- Robert Lape, Facilities Manager, Kenton County Schools
- Ehmet Hayes, AIA
- Andrew Piaskowy, AIA
- Tony Hans, PE

Workshop Hosted by:

Kentucky Office of Energy Policy and
The Kentucky NEED Project with support
from The U.S. Department of Energy



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Caywood Elementary

Kenton County - 2005



Daylighting
Geothermal Heating and Cooling
Lighting and Dimming Controls
Energy Management Control System
Commissioning

EUI =

34.1

Kbtu/SF/YR



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KEEPS - a systematic approach to help Kentucky school districts reduce energy consumption and lower operating expenses.

Based on the U.S. EPA Energy Star Guidelines for Energy Management.

KEEPS Resources

- Energy Management Toolkits that provide information and materials to facilitate the development of school district energy management programs.
- Recorded webinars that demonstrate how to implement best energy management practices.
- The Basics of Energy Management training that provides information about the fundamentals of energy management

Delivered by Kentucky Pollution Prevention Center, University of Louisville



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Executive Order 2006-1298

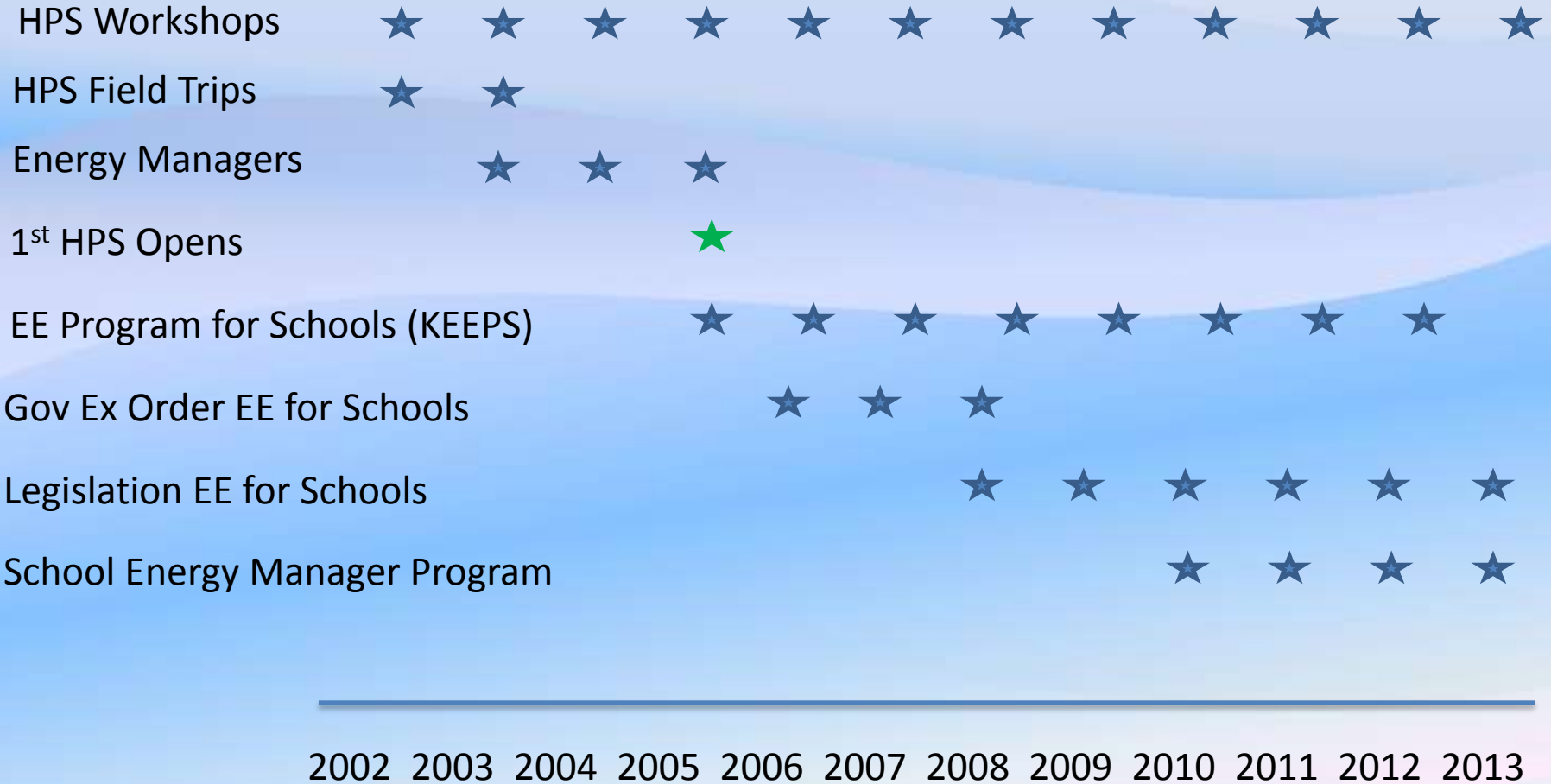
The Office of Energy Policy shall implement education programs for energy efficiency to reduce energy use and to reduce utility bills for the citizens of the Commonwealth.

Legislation HB 2 April 2008

On or before January 2010 require boards of education to enroll in the Kentucky Energy Efficiency Program for Schools requiring annual reporting to the legislature.

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Kentucky School Energy Managers Project (SEMP)

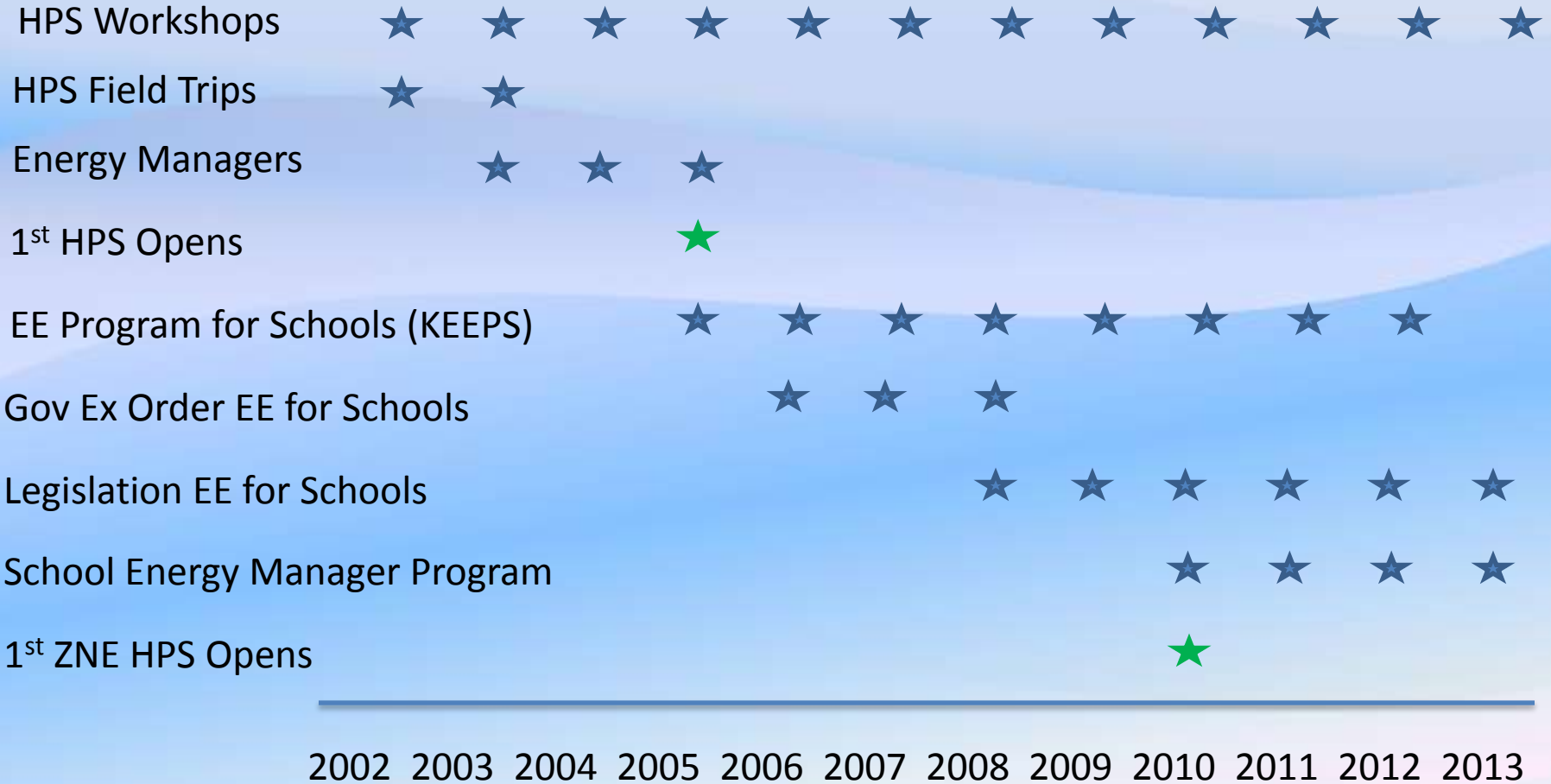
Provides assistance to Kentucky school districts on a variety of energy-related projects:

- compliance to energy statutes and board policy;
- coordinating and conducting training for school energy managers;
- supporting districts in tracking energy usage;
- consolidating energy data;
- developing and implementing energy policies;
- collaborating with other stake holders to work on energy saving activities
- Administered by the KY School Boards Association



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Richardsville Elementary Warren County Schools
The Nation's First Net Zero Public School



72,285 SF
500 Students
\$168.00 SF w/out Solar
\$206.50 SF w/ Solar



Richardsville Elementary Warren County Schools
The Nation's First Net Zero Public School

In 2012,

NO Energy Costs

+

TVA paid WCPS

\$37,277.31

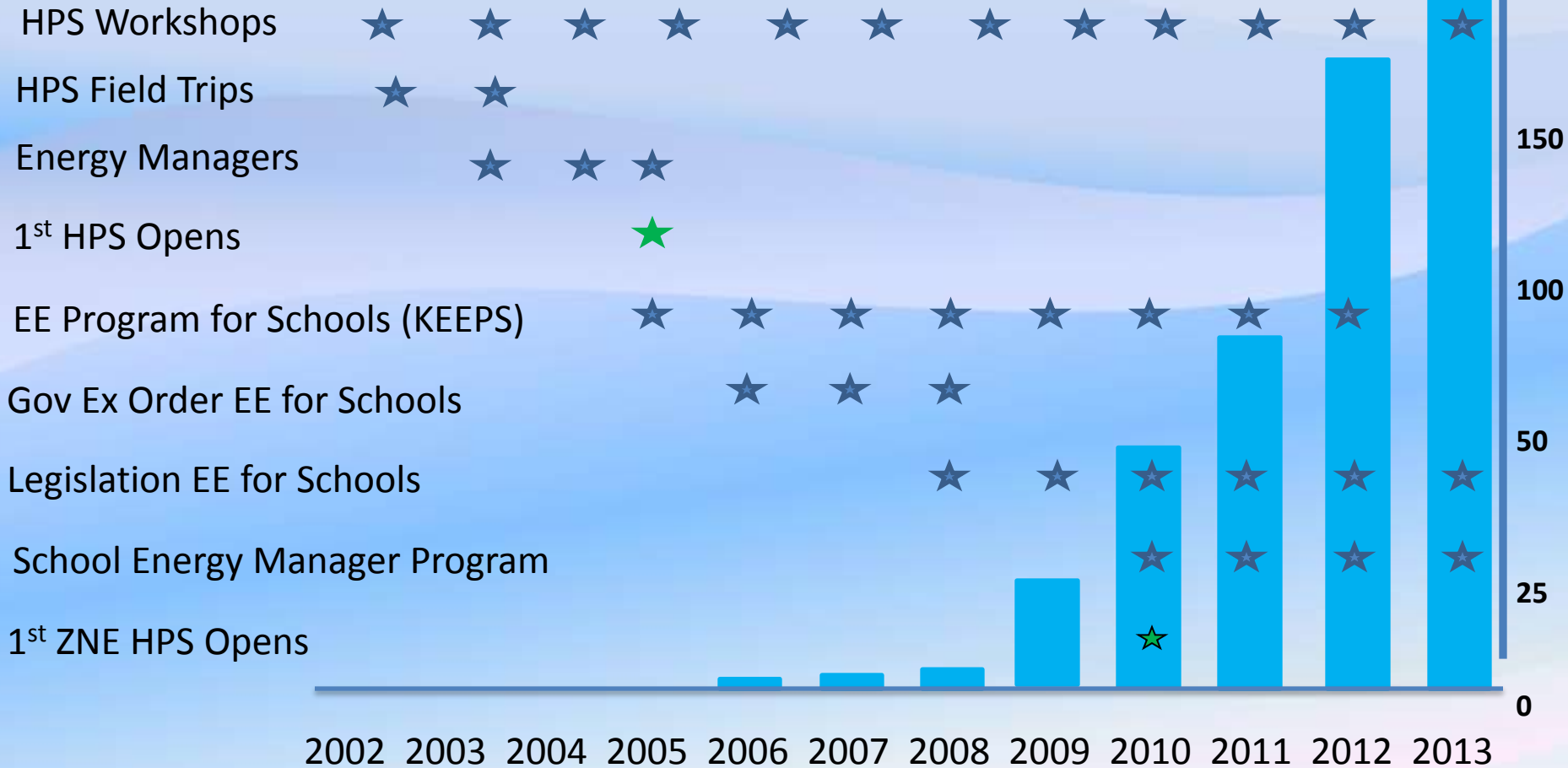


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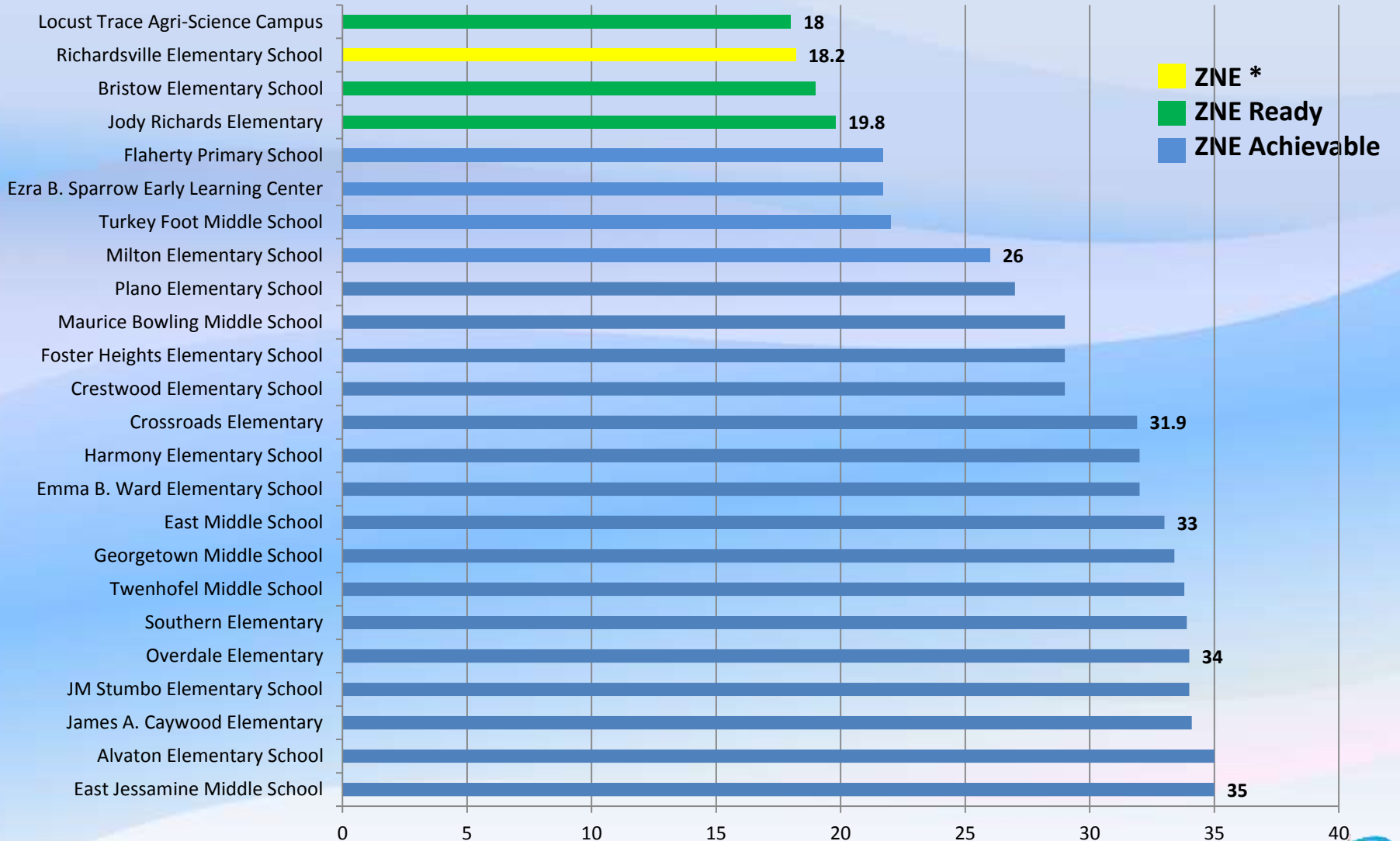


ENERGY STAR Schools



Kentucky's High Performance School (HPS) Journey

Kentucky's High Performing Schools - Top 25



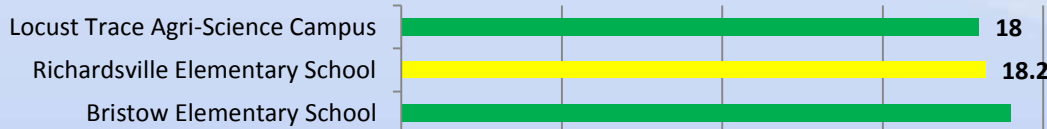
* ZNE - Zero Net Energy

Kbtu/SF/YR



Kentucky's High Performance School (HPS) Journey

Kentucky's High Performing Schools - Top 25



- ZNE *
- ZNE Ready
- ZNE Achievable

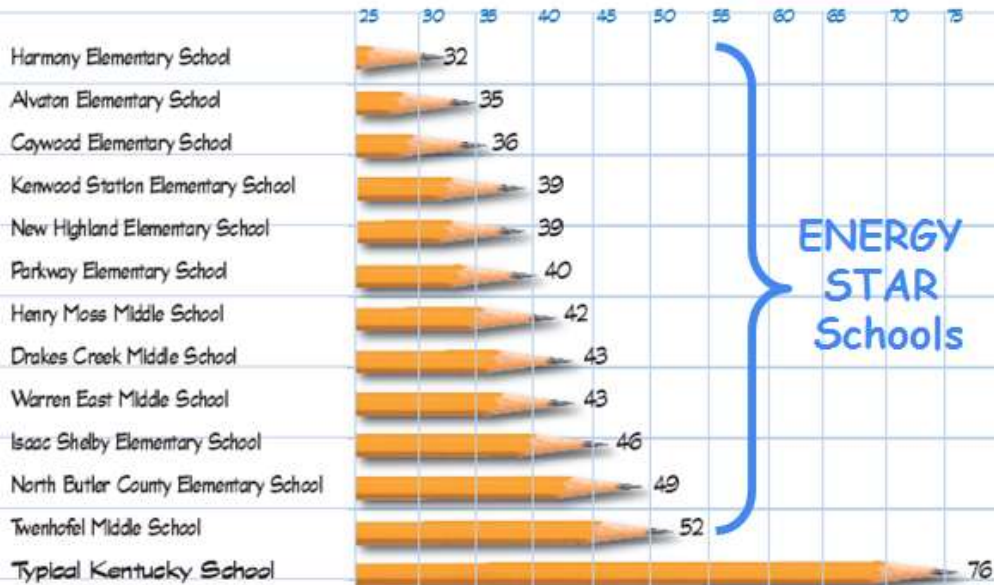
ENERGY STAR Schools in Kentucky

How does your school rate?



ENERGY STAR Schools

kBtu/sf/year



ENERGY STAR Schools

0 5 10 15 20 25 30 35 40

Kbtu/SF/YR

* ZNE - Zero Net Energy



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