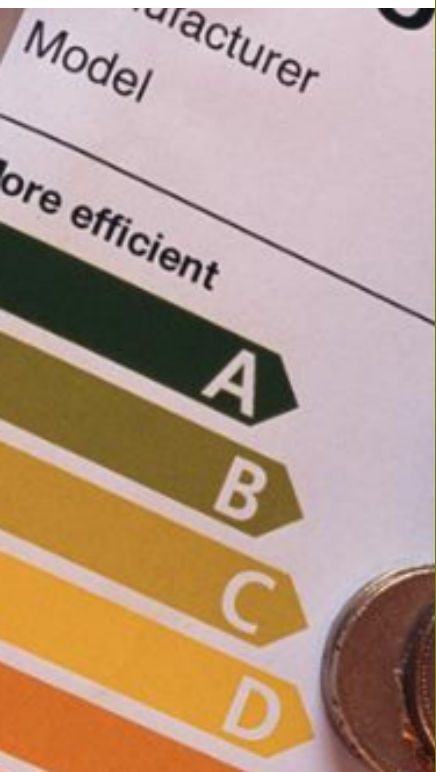


Energy Efficiency in Voluntary Air Quality Plans

Presented at the ACEEE 2018 Conference on
Health, Environment, and Energy

Angie Shatas
U.S. EPA
Policy Advisor

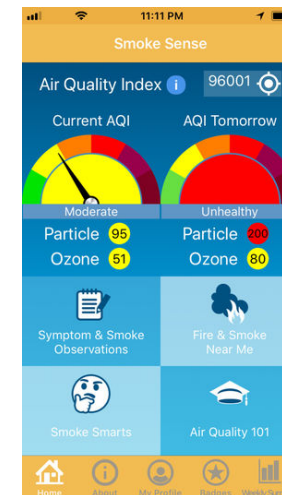


EPA's role in Air Quality

- Regulatory authority via Clean Air Act
 - Set ambient air quality standards
 - Determine if areas meet the standards
 - Work with areas to attain and maintain the standards
- Provide air quality management resources
 - AVERT (Avoided Emissions geneRation Tool)
- Deliver information for personal decision-making
 - AirNow
 - Real-time air quality information that people can use to protect their health
 - Air Quality Flag Program
 - Raise awareness
 - EnergyStar
 - Smoke Sense
 - BurnWise
- Promote voluntary efforts
 - Advance Program

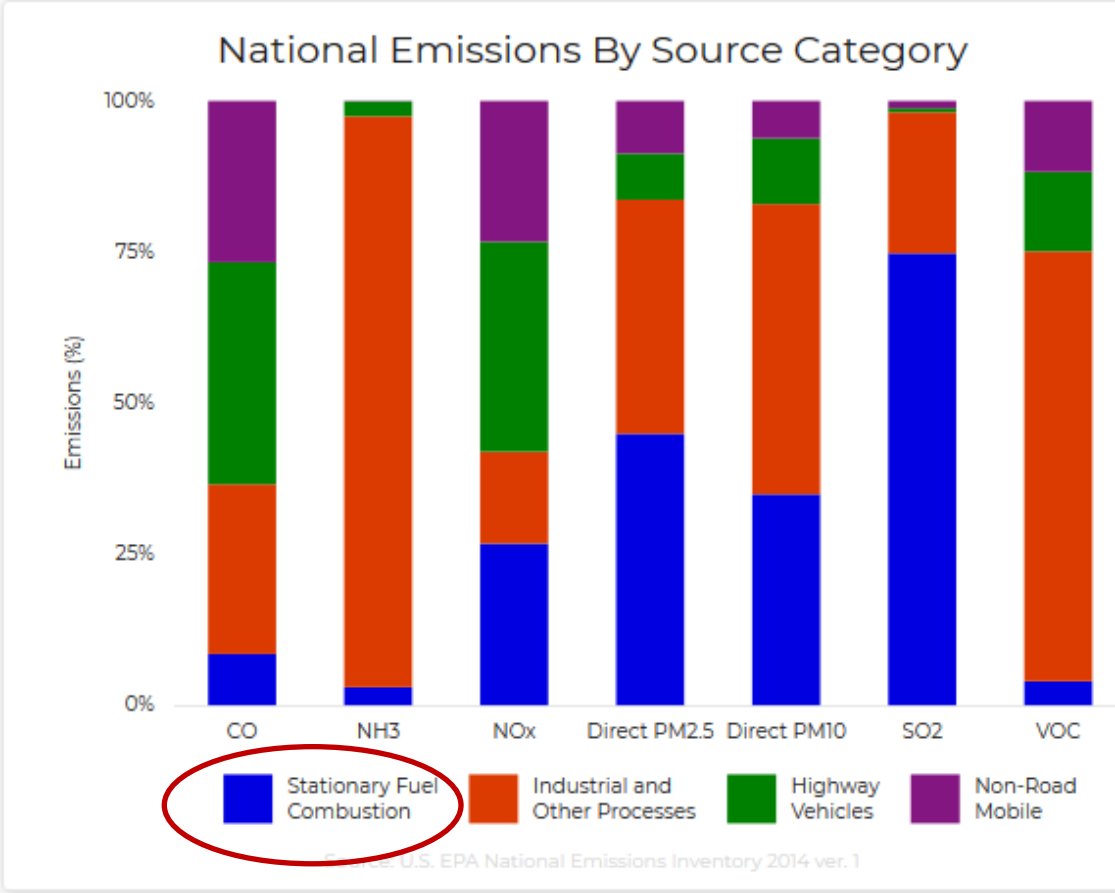


Smoke Sense



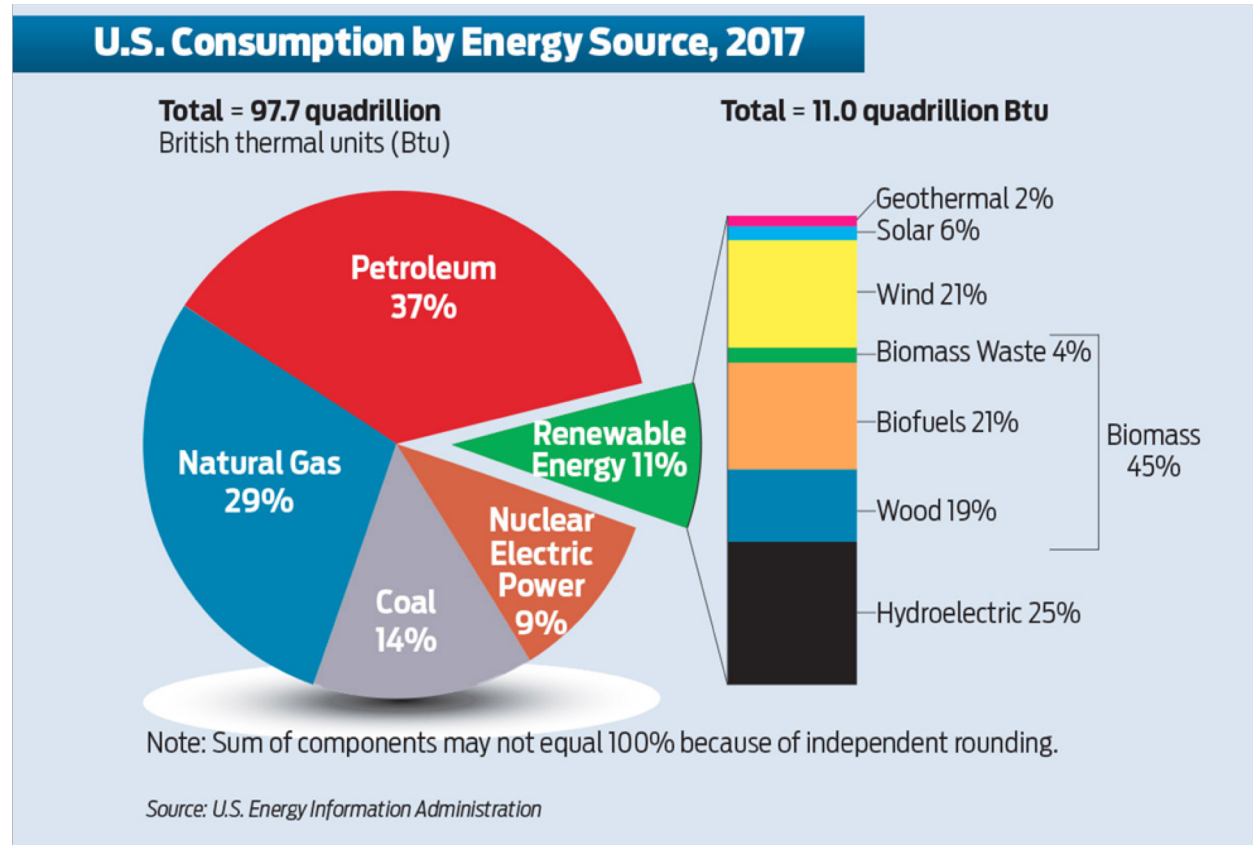
Connections: Energy and Air Quality

Sources of air pollution



Connections: Energy and Air Quality

Sources of energy



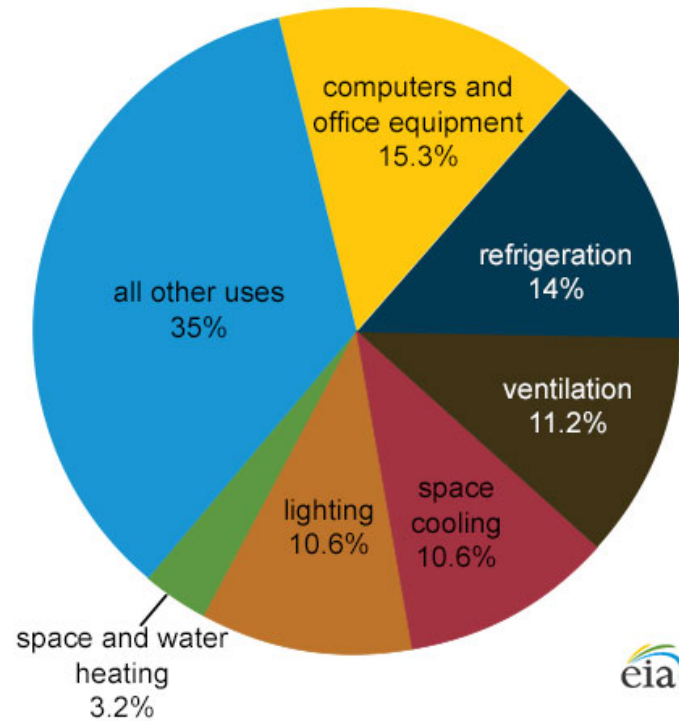
Electricity production → emissions of greenhouse gases and other air pollutants

Energy Efficiency

Energy efficiency = less energy for the same job

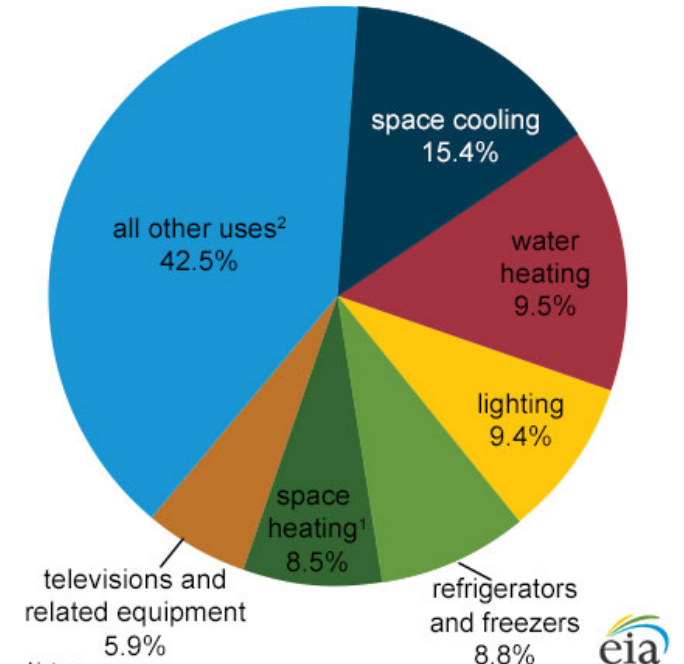
- Saves money on energy bills
- Avoids unnecessary pollution

U.S. commercial sector electricity consumption by major end uses, 2017



Source: U.S. Energy Information Administration, *Annual Energy Outlook 2018*, Table 5, February 2018

U.S. residential sector electricity consumption by major end uses, 2017



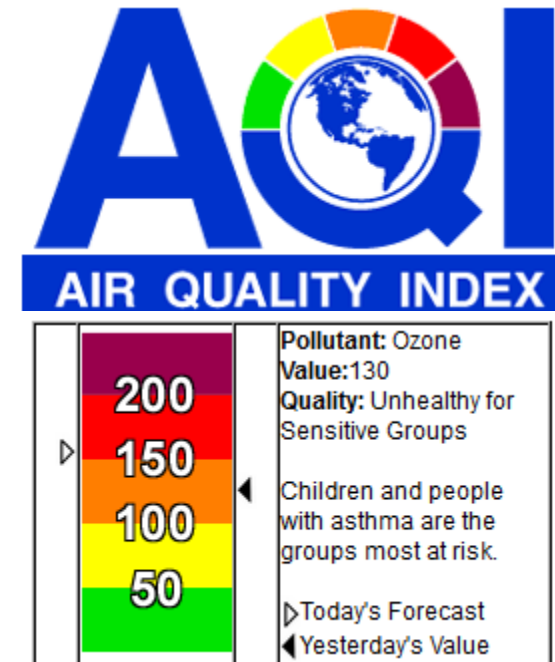
Notes:
¹Includes consumption for heat and operating furnace fans and boiler pumps.
²Includes miscellaneous appliances, clothes washers and dryers, computers and related equipment, stoves, dishwashers, heating elements, and motors not included in other uses.

Source: U.S. Energy Information Administration, *Annual Energy Outlook 2018*, Table 4, February 2018

Air Quality Index – Linking Air Quality and Health

The Air Quality Index	
Index Values	AQI Category
0 - 50	Good
51 - 100	Moderate
101 - 150	Unhealthy for Sensitive Groups
151 - 200	Unhealthy
201 - 300	Very Unhealthy
301 - 500	Hazardous

- Color-coded
- Communicates air quality and health information to the public
- Nationally uniform
- Reflects the latest standards and science
- Pollutant-specific health effects and cautions



Voluntary actions to improve air quality

EPA's Advance Program

supports states, tribes and local governments in taking

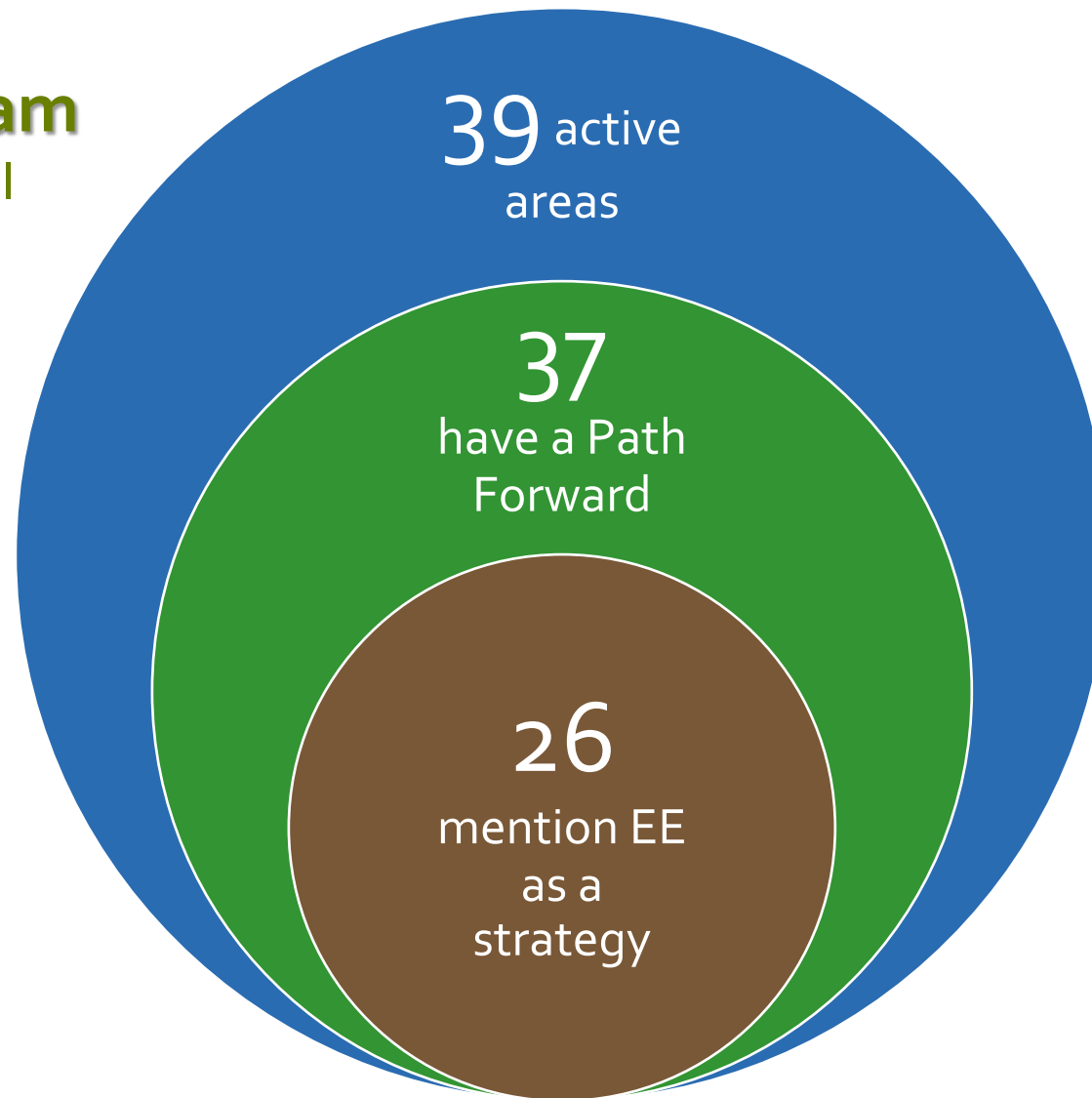
proactive steps

to keep their air clean via local actions to

reduce

ozone and/or fine particle

pollution (PM_{2.5}).



Virginia (Caroline County, Hampton Roads, Fredericksburg, and Richmond-Petersburg)

Statewide Measures

Virginia Energy Management Program

\$177M

Private capital invested in public building EE improvements (2011-2020)

Virginia Energy Management Program

20%

Reduction in energy expenses in state facilities (by 2020)

Energize Virginia

LOAN

State Revolving Loan Fund to finance EE and RE infrastructure and programs

Virginia 2018 Energy Plan

\$1.1B

Investor-owned utility EE investments with pilot program for low-income, elderly and disabled (2018-2028)

Louisville, Kentucky

Utility and municipal EE

Louisville Gas and Electric has numerous energy efficiency programs and incentives

Local government programs and incentives

Residential

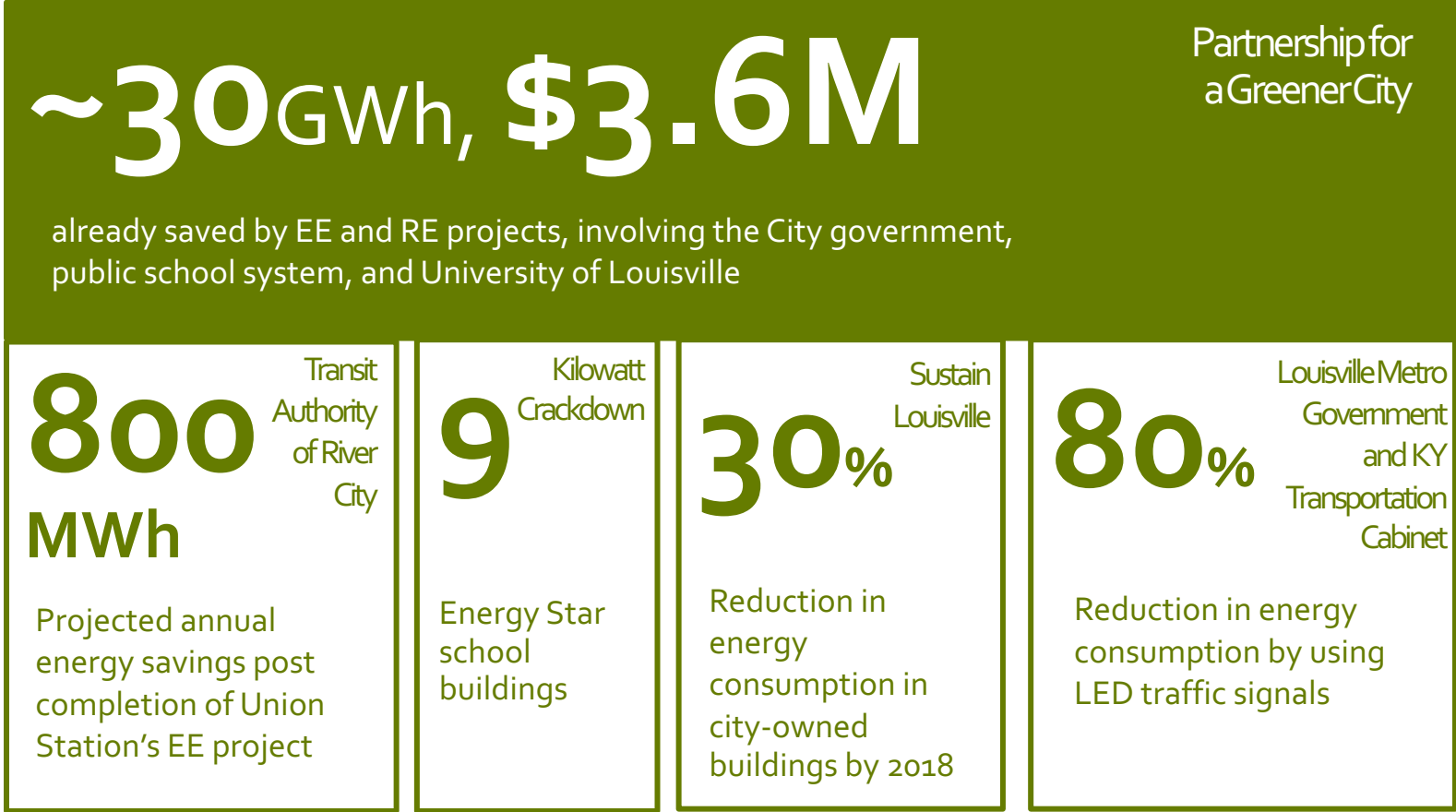
- High efficiency lighting
- Energy saving new homes
- Demand conservation program
- Dealer referral network
- WeCare income-based assistance
- On-site inspection of facility
- Rebates (lighting, HVAC, refrigeration, etc.)

Commercial

Sustain Louisville
Partnership for a Greener City
Louisville Energy Alliance
Energy Project Assessment District

Louisville, Kentucky

Local Government Measures



Tulsa, Oklahoma

Regional Measures

15-25%

Energy Efficiency Conservation Block Grant

Reduction in annual energy consumption by county and city EECBG

27%

Oklahoma State Facilities Energy Conservation Program

Reduction in annual energy expenditures from April 2016 to April 2017

~40%

revolving loan fund

Reduction in annual energy consumption by Tulsa City-County Library

1263 GWh

Public Service Company of Oklahoma Energy Efficiency Program

Reduction in energy consumption using demand response (2013-2018)

New Orleans, Louisiana

Voluntary Program

50%

Climate
Action
Strategy

Reduction in carbon emissions
by 2030

40

Buildings in the **2018 NOLA
Energy Challenge**

2018 Winners

- **GSA** (Highest ENERGY STAR Score & Top Energy Savings)
- **Tulane** (Best Tenant Engagement)
- **Hertz Investment Group** (Best Energy Reduction Plan)
- **The New Orleans Ernest N. Morial Convention Center** (Overall Sustainability)

ENERGY STAR Portfolio Manager

7%

Average reduction in energy
consumption for buildings that used
Portfolio Manager (2012 EPA study of
35,000 buildings)

**If you can't measure it,
you can't manage it.**

W. Edward Deming

Resources

AQI - Air Quality Index: A Guide to Air Quality and Your Health

Information for health-care professionals and the public

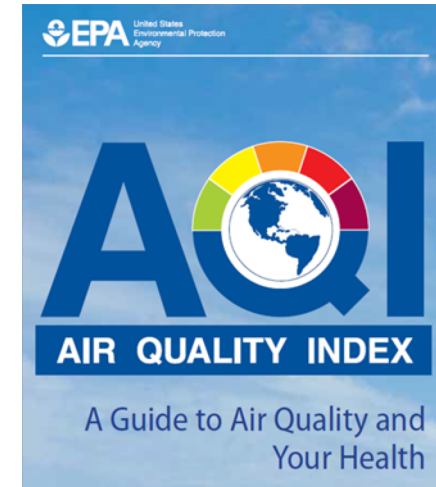
EPA's AirNow website and app (Apple and Android)

EPA's Advance Program

AVERT

Questions?

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shatas.angie@epa.gov



Free CME, CNE, and CEU Training for healthcare professionals

Particle Pollution and Your Patients' Health Web Course


An extensive body of scientific evidence shows exposure to fine particle pollution may lead to a range of adverse health effects, including heart and lung effects, and even premature death. This course will provide health professionals with knowledge they can share with patients to help reduce overall risk of particle pollution-related health effects, particularly in individuals with heart and lung disease.



www.epa.gov/pmcourse

EPA CDC

ASTHMA AND OUTDOOR AIR POLLUTION



1 Air pollution can make asthma symptoms worse and trigger attacks.
If you or your child has asthma, have you ever noticed symptoms get worse when the air is polluted? Air pollution can make it harder to breathe. It can also cause other symptoms like coughing, wheezing, chest discomfort, and a burning feeling in the lungs.
Two key air pollutants can affect asthma. One is ozone (found in smog). The other is particulate pollution (found in haze, smoke, and dust). When ozone and particulate pollution are in the air, adults and children with asthma are more likely to have symptoms.

2 You can take steps to help protect your health from air pollution.
► **Get to know how sensitive you are to air pollution.**
• Notice your asthma symptoms when you are physically active. Do they happen?

► **Know when and where air pollution may be bad.**
• Ozone is often worst on hot summer days, especially in the afternoons and early evenings.
• Particulate pollution can be bad any time of year, even in winter. It can be especially bad when the weather is calm, allowing air pollution to build up. Particle levels can also be high:
— Near busy roads, during rush hour, and around factories.
— When there is smoke in the air from wood stoves, fireplaces, or burning vegetation.

► **Also notice any asthma symptoms that begin up to a day after you have been outdoors in polluted air.** Air pollution can make you more sensitive to asthma triggers, like mold and dust mites. If you are more sensitive than usual to indoor asthma triggers, it could be due to air pollution outdoors.

