



# Technical Tools for Energy and Health Professionals

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Environment and Energy**

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# Session Speakers

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The American Council for an Energy-Efficient Economy is a nonprofit 501(c)(3) founded in 1980. We act as a catalyst to advance energy efficiency policies, programs, technologies, investments, & behaviors.

Our research explores economic impacts, financing options, behavior changes, program design, and utility planning, as well as US national, state, & local policy.

Our work is made possible by foundation funding, contracts, government grants, and conference revenue.

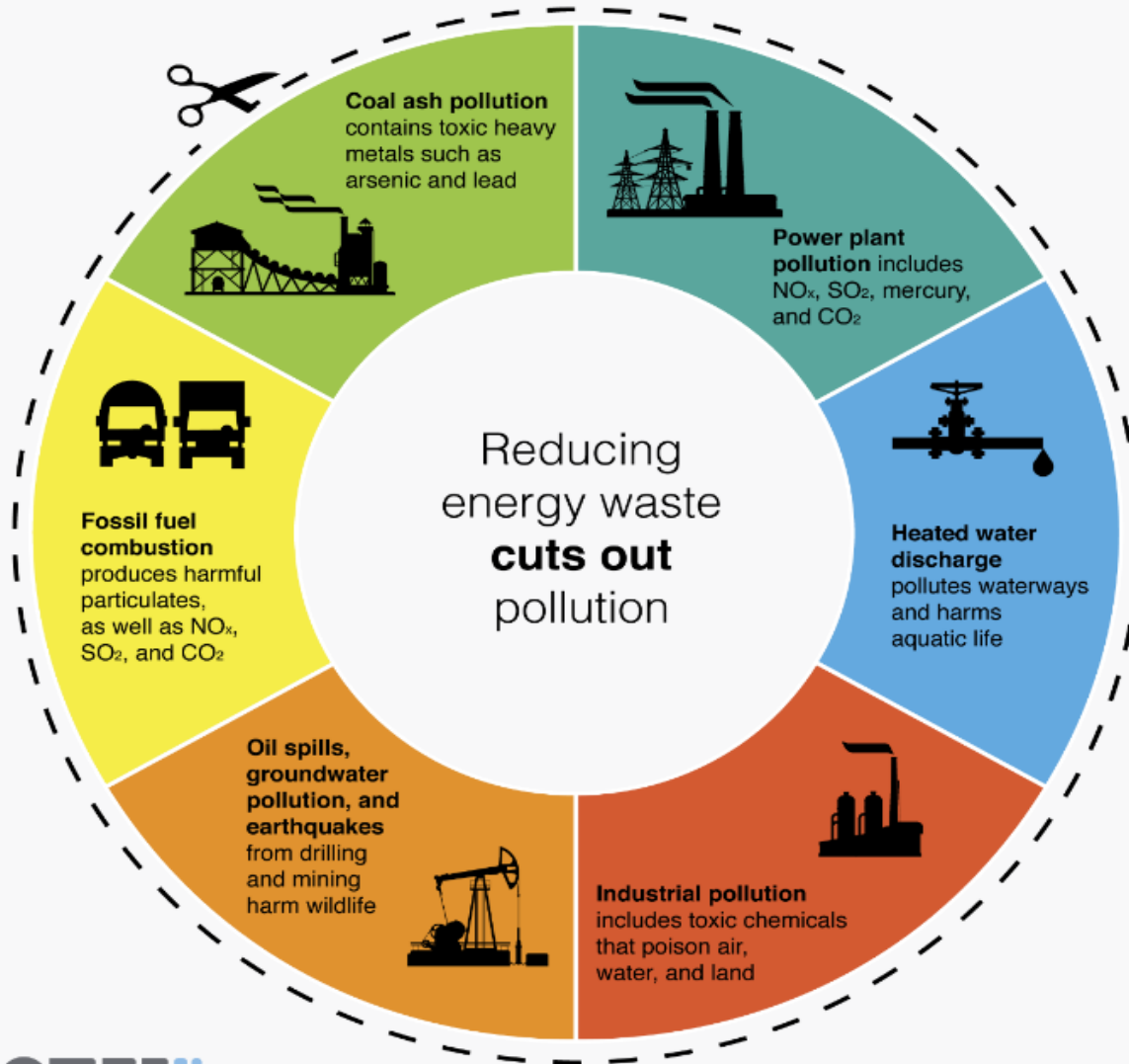
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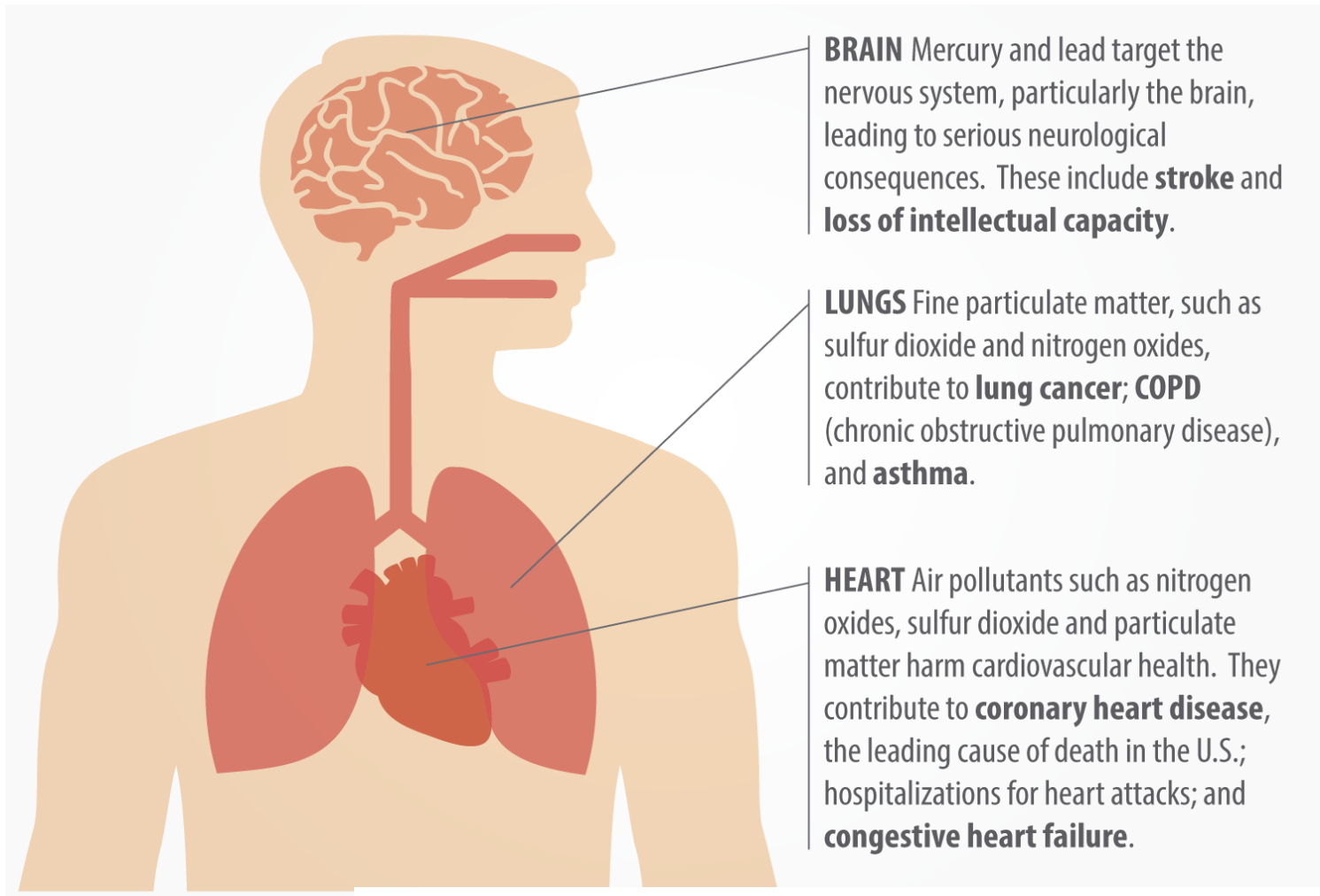
# Agenda

- Energy efficiency as a tool to improve air quality
- Uses for modeling tools
- Tradeoffs to consider

# Energy efficiency protects the environment



# Health Effects of Fossil Fuel Pollutants



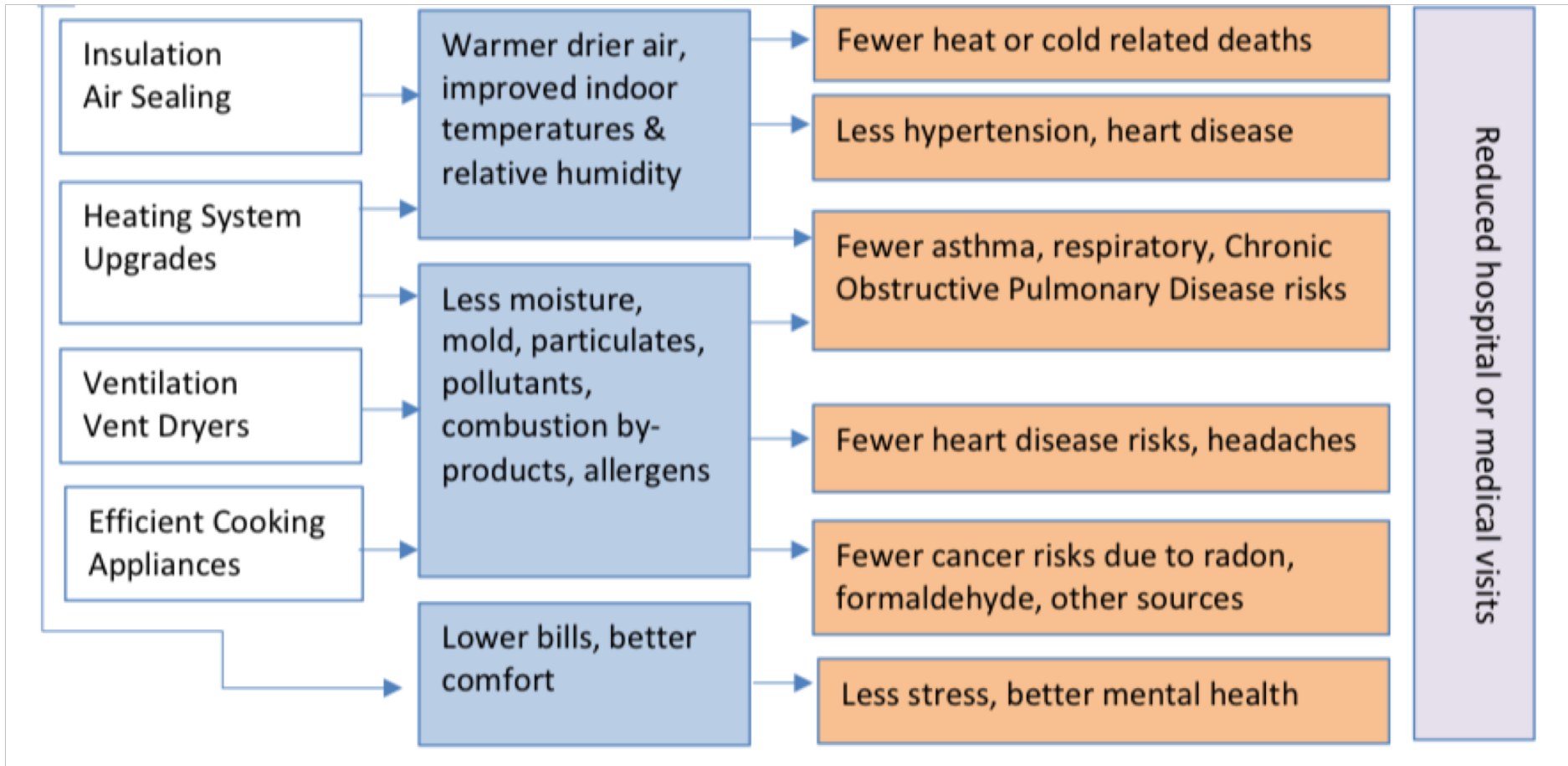
# Save Energy. *Protect Health.*

Reducing annual electricity use by **15%** with ***ENERGY EFFICIENCY*** would reduce air pollution, and...

- + Save more than ***SIX LIVES*** every day
- + Prevent nearly ***30,000 ASTHMA EPISODES*** each year
- + Save Americans up to ***\$20 BILLION*** in avoided health harms annually



# EE improves health of building occupants



Source: <https://e4thefuture.org/wp-content/uploads/2016/11/Occupant-Health-Benefits-Residential-EE.pdf>



# Uses for modeling tools

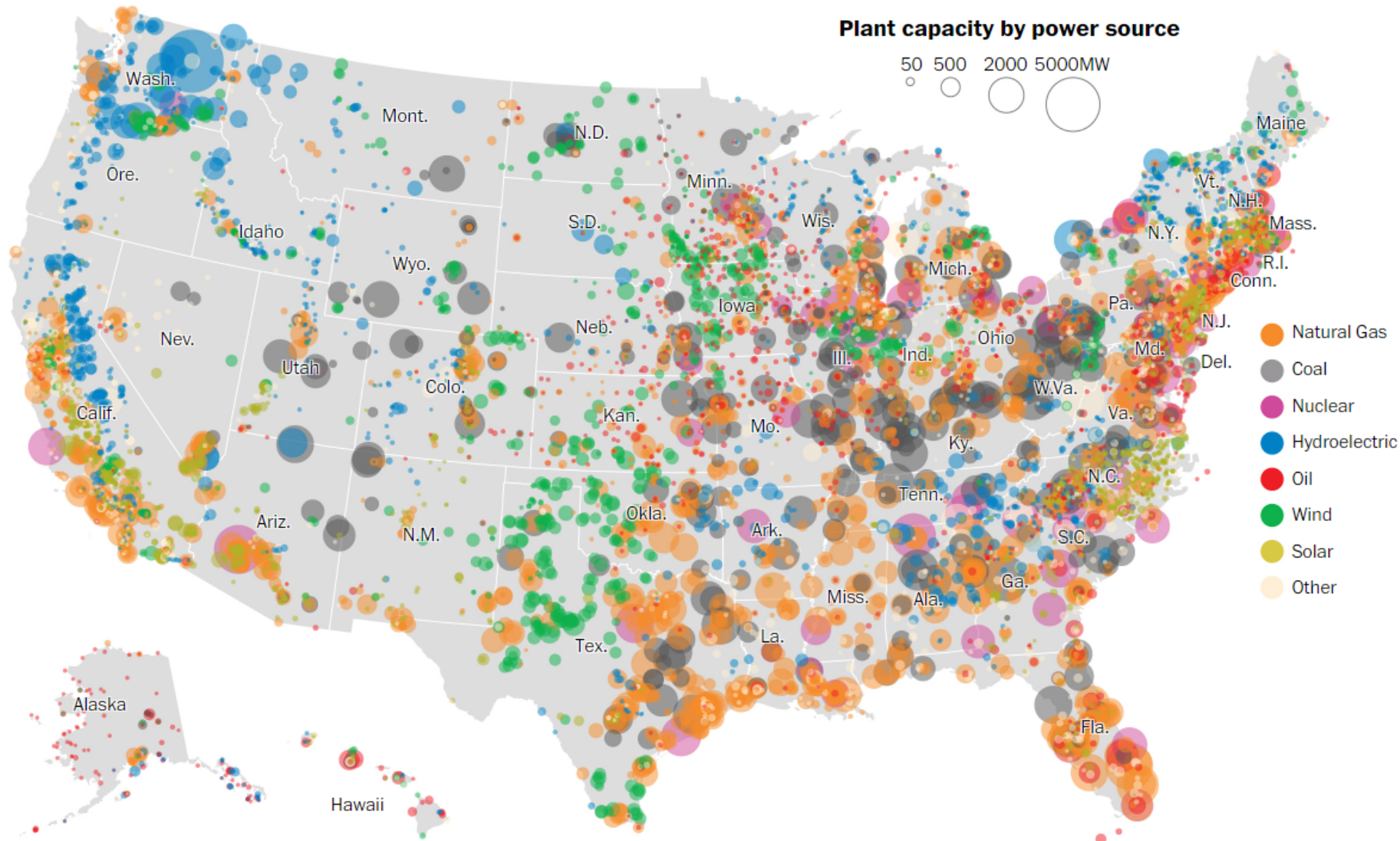
- Compliance with federal air quality regulations
  - Criteria pollutants
  - Greenhouse gases
- Establish and implement state and local policies to curb emissions
- Comparing voluntary programs or policies
- Create future scenarios that take into account:
  - Economic considerations
  - Impacts to public health
  - Air quality improvements
  - Strategies to achieve targets

# Tradeoffs to consider

- Degree of rigor
- Ease of use
- Data sources
- Assumptions
- Scale
- Time period
- Cost
- Strategies

# Tradeoffs to consider (cont.)

- Other factors that affect air quality and health impacts:
  - Nature of the power grid
  - Location of polluting sources
  - Wind patterns
  - Changes to chemical composition
  - Population data



Source: [https://www.washingtonpost.com/graphics/national/power-plants/?utm\\_term=.bd46236fb569](https://www.washingtonpost.com/graphics/national/power-plants/?utm_term=.bd46236fb569)

# Resources

- ACEEE Health and Environment Program homepage - <http://aceee.org/topics/health-environment>
- ACEEE, *Saving Energy, Saving Lives: The Health Impacts of Avoiding Power Plant Pollution with Energy Efficiency* - <http://aceee.org/research-report/h1801>
- ACEEE, *Mission Attainment: Incorporating Pollution Reductions from Energy Efficiency in State Implementation Plans* - <http://aceee.org/research-report/h1803>
- EPA, *Quantifying the Multiple Benefits of Energy Efficiency and Renewable Energy: A Guide for State and Local Governments* - <https://www.epa.gov/statelocalenergy/quantifying-multiple-benefits-energy-efficiency-and-renewable-energy-guide-state>

# Thank you

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