

# Kentucky Opportunities for On-Farm Energy Production

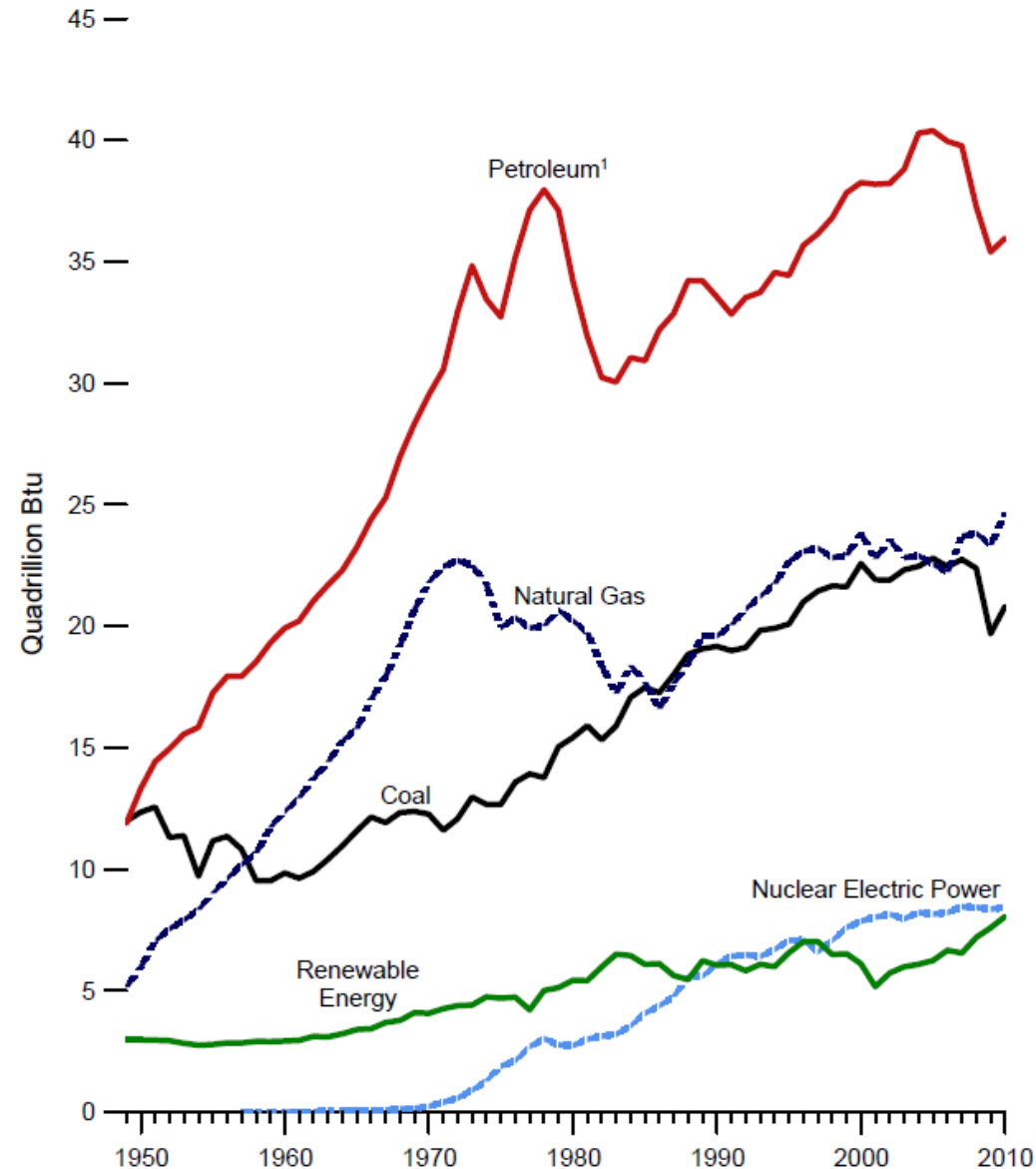
Michael Bomford, PhD  
Community Farm Alliance  
Meeting, Jan. 14, 2012

# Energy

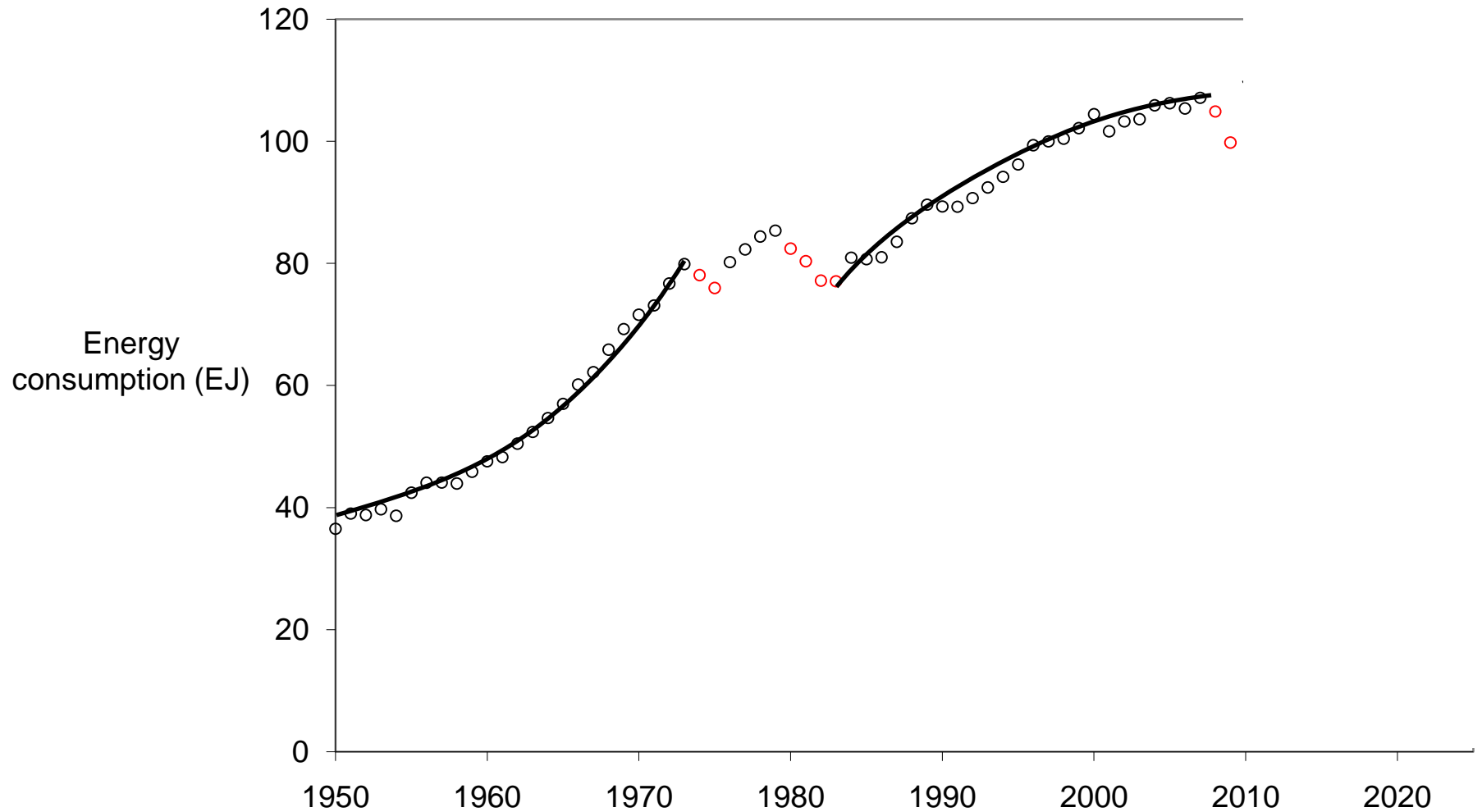
- Energy consumption doubled between 1950 and 1973
- 25% increase with more volatility since 1973
- Per capita consumption peaked in 1979
- Growth in renewable production outpaced by growth in energy consumption

## US Energy Consumption

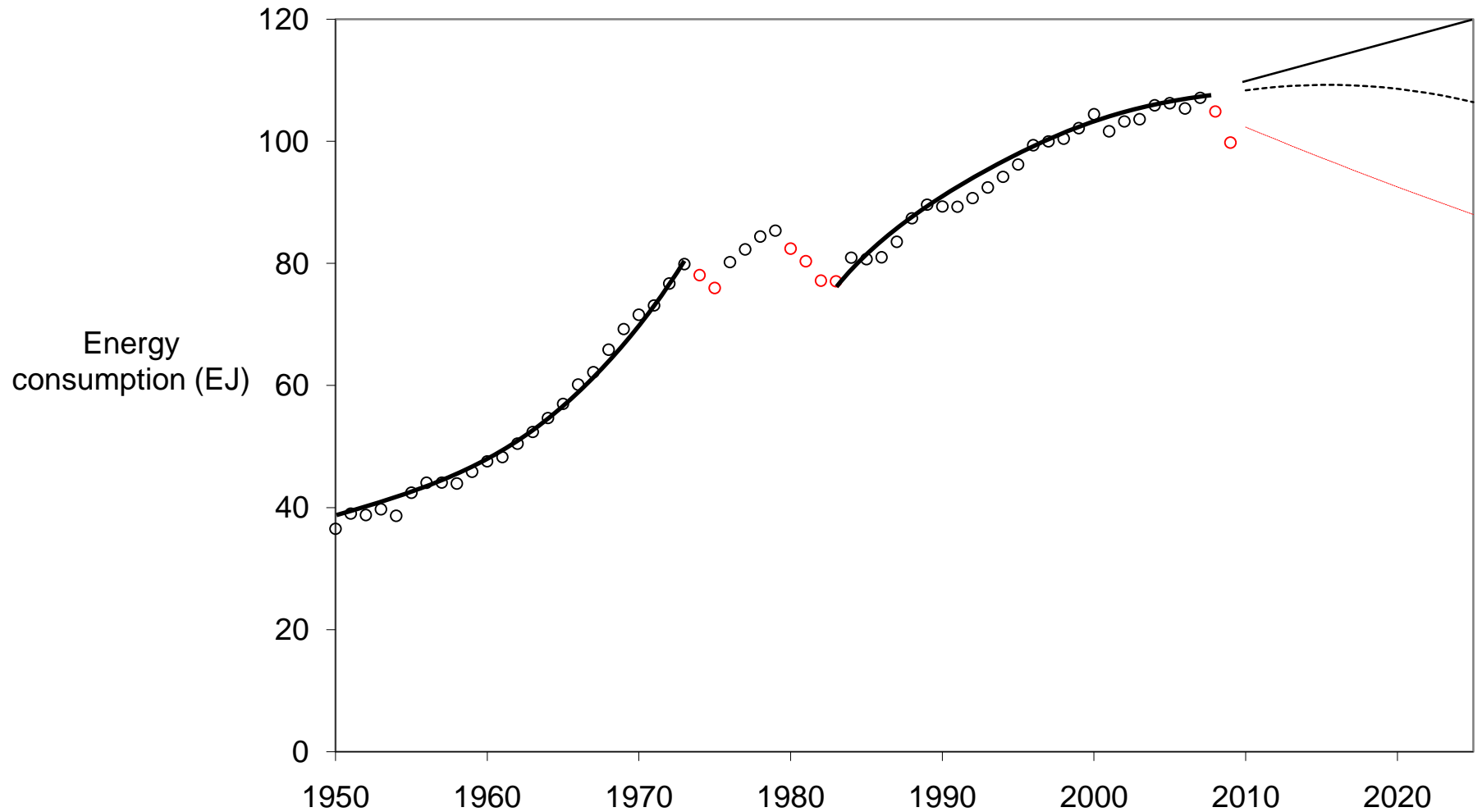
By Major Source, 1949-2010



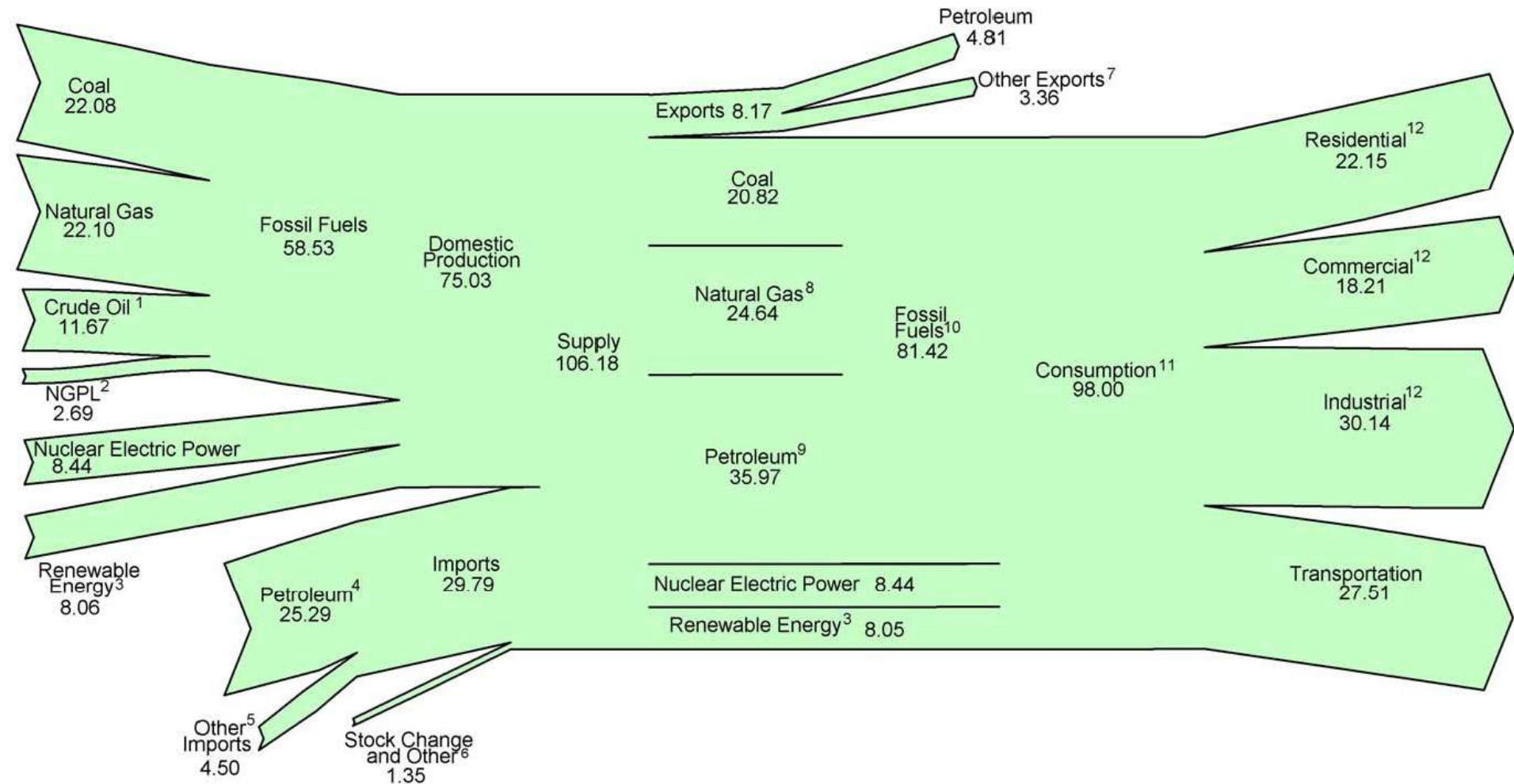
# US Energy Consumption, 1950-2025



# US Energy Consumption, 1950-2025

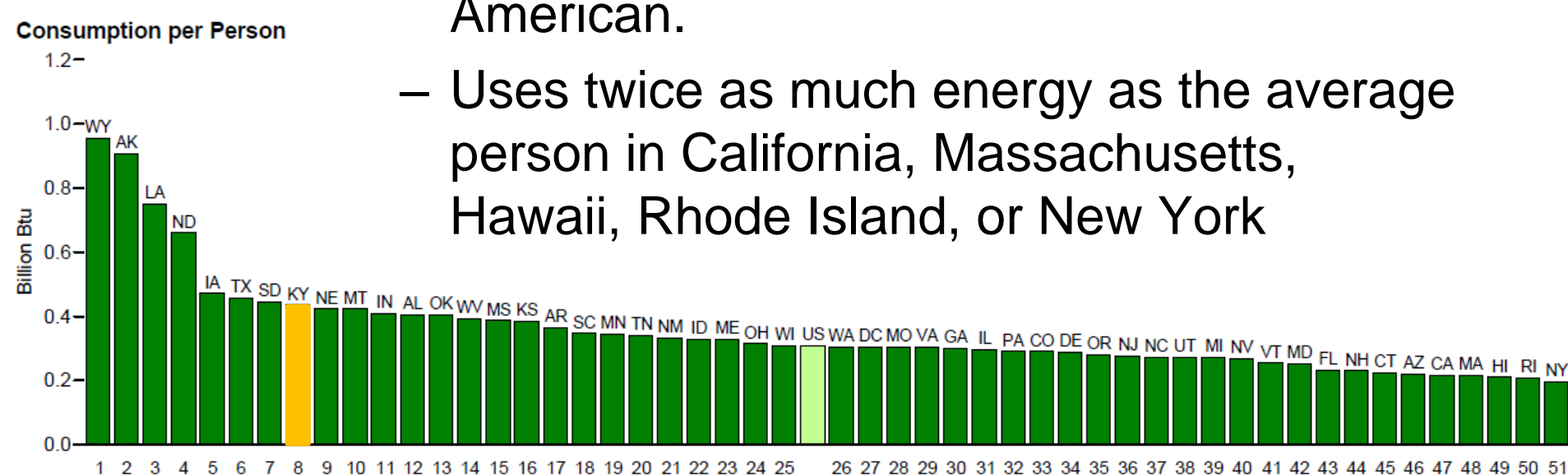


# Energy Flow, 2009 (Quadrillion BTU)

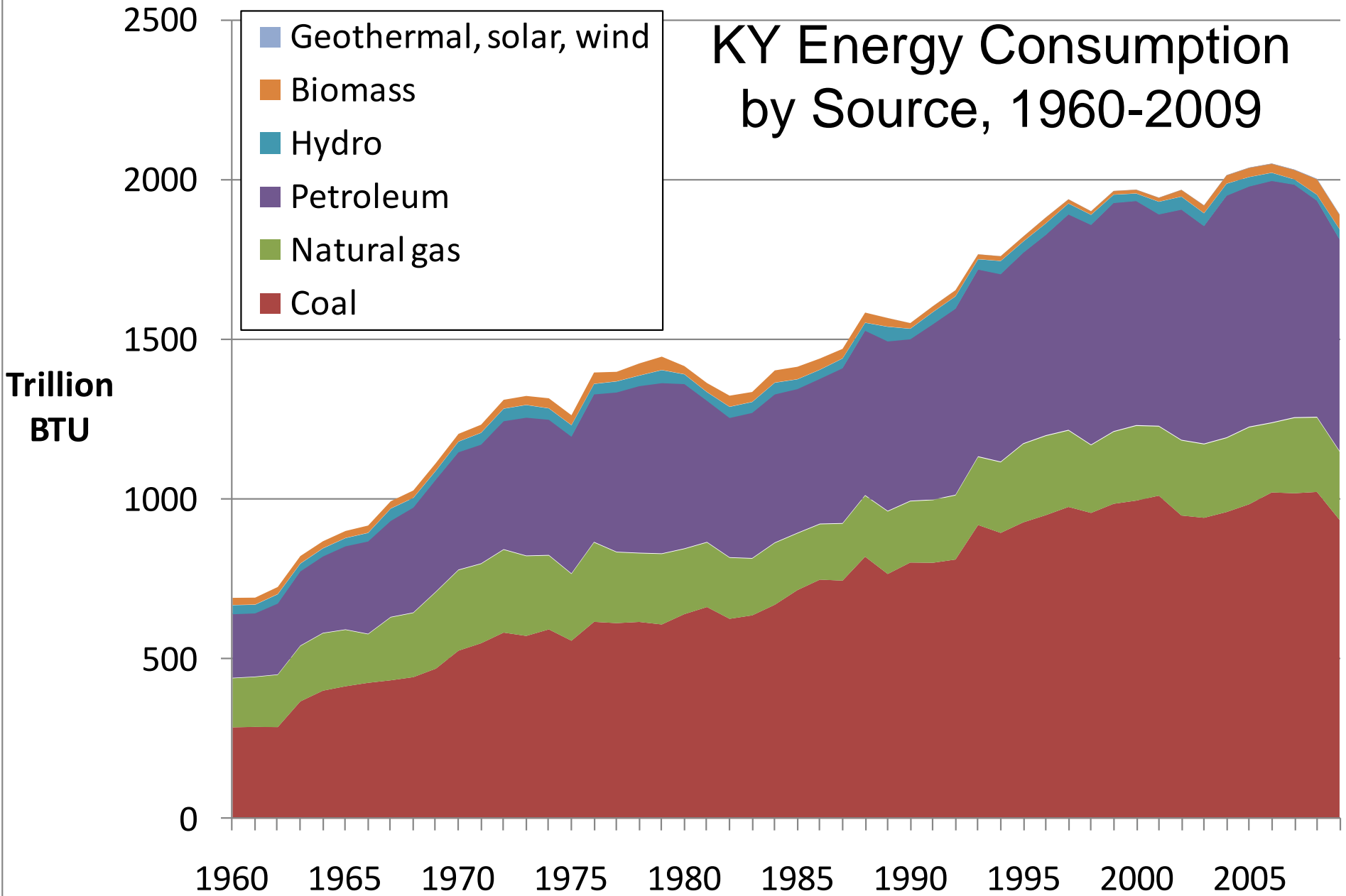


# We're #8!

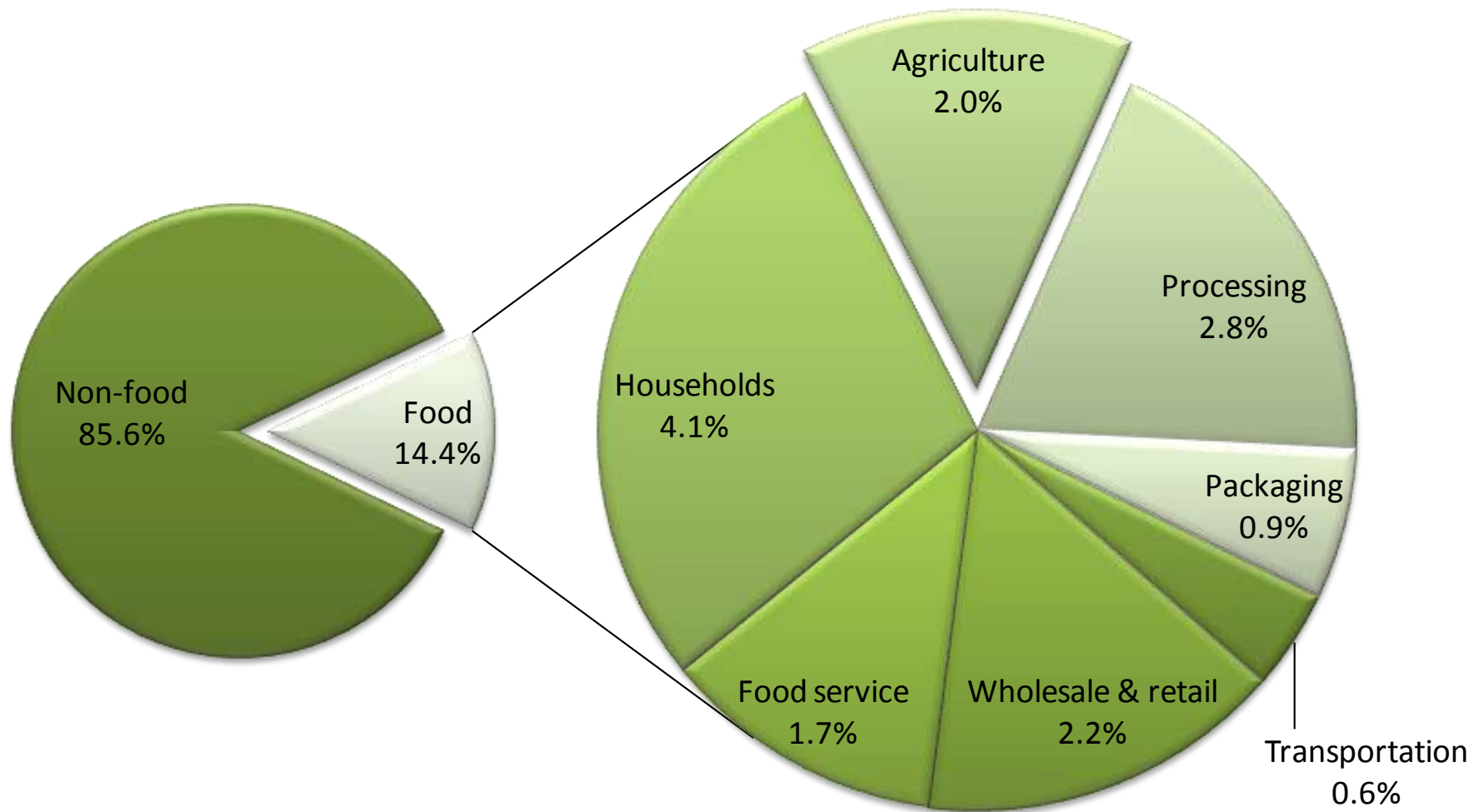
- The average person in Kentucky
  - Uses less than half as much energy as the average person in Wyoming or Alaska
  - Uses 41% more energy than the average American.
  - Uses twice as much energy as the average person in California, Massachusetts, Hawaii, Rhode Island, or New York



# KY Energy Consumption by Source, 1960-2009

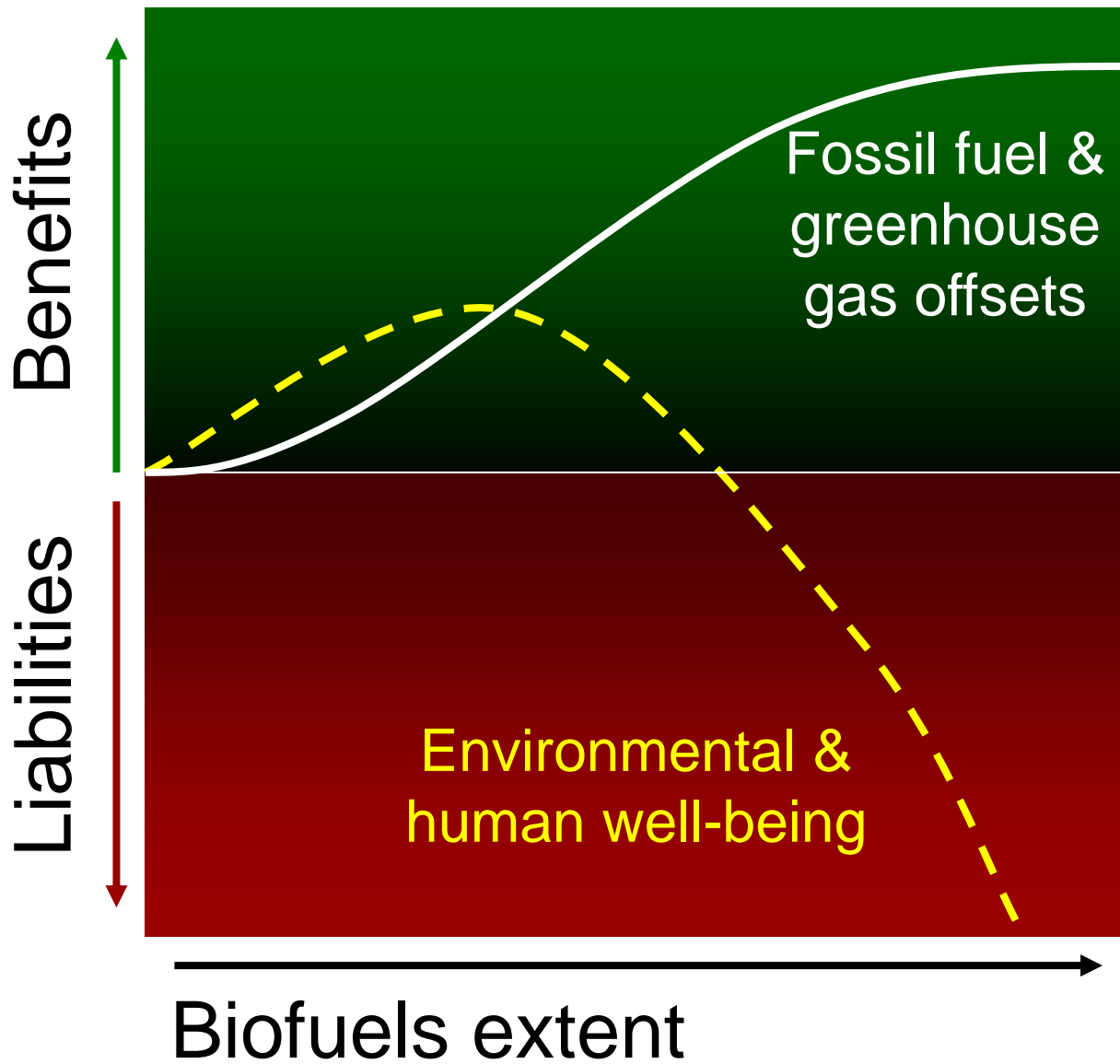


# US Food System Energy Use, 2002



# Why On-Farm Production?

- Farms can be energy producers
- Resilience
  - Local production keeps resources cycling locally
  - Local production gives autonomy/security
  - Decentralized, distributed generation reduces opportunities for supply shocks
  - Distributed generation spreads wealth, risks

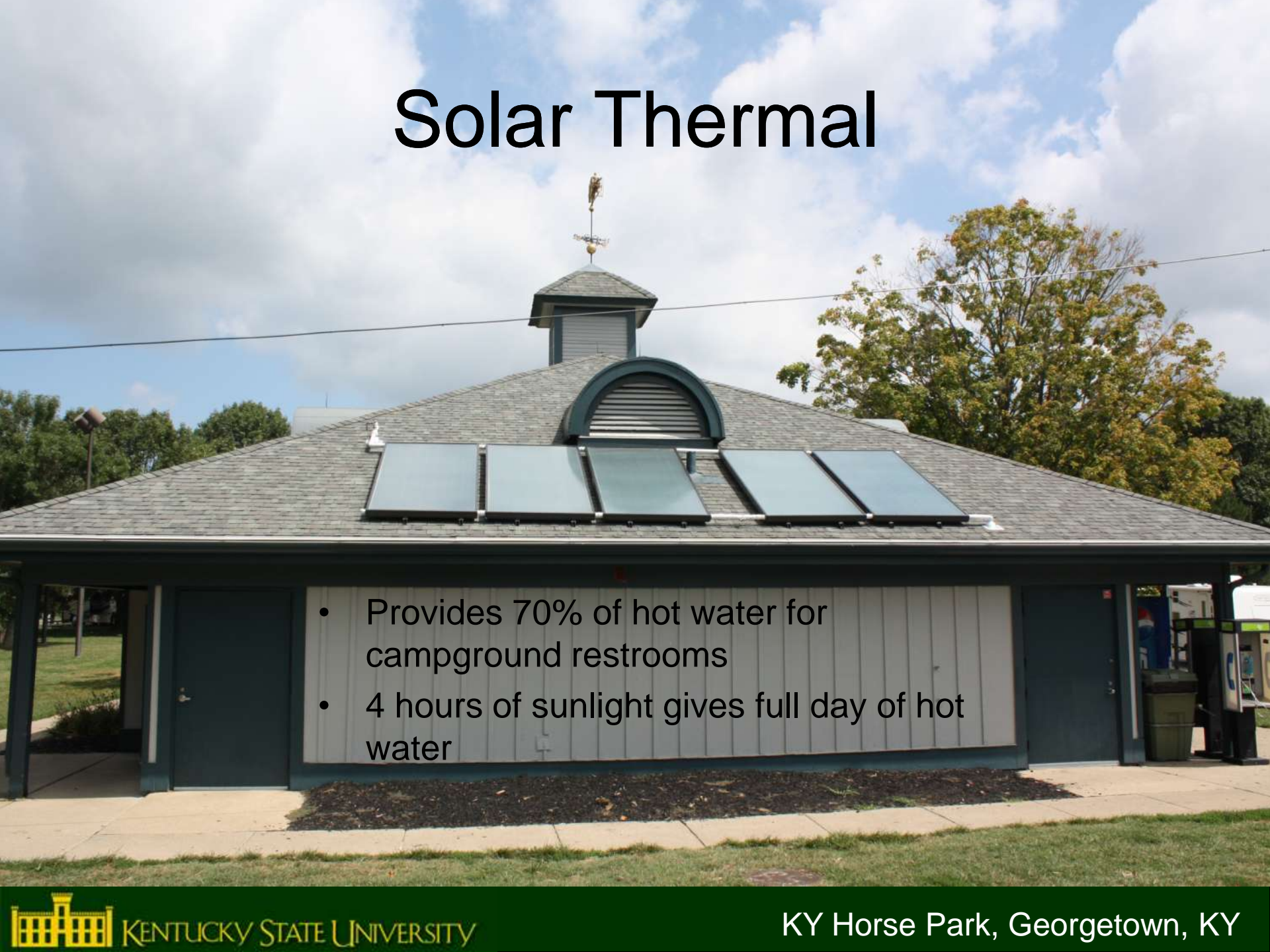


# Passive Solar





# Solar Thermal

- 
- Provides 70% of hot water for campground restrooms
  - 4 hours of sunlight gives full day of hot water

# Photovoltaic

