

Stimulating Energy Efficiency in Kentucky

Summary of Kentucky Electricity Price and Consumption Forecasts to 2035

Purpose: American Council for an Energy Efficient Economy (ACEEE) and DEDI modeled conservative price and consumption forecasts to inform dialogue about Kentucky’s energy future and support the SEE KY initiative.

Key findings:

- Market demand and consumption will **not** be the primary drivers of increasing energy prices in the future.
- Prices will largely be driven by the availability and cost of fuel inputs, such as coal and natural gas, as well as compliance with pending and proposed Environmental Protection Agency (EPA) air, water, and waste regulations.
- Projected average annual consumption growth rates (Figure 1 below):
 - Residential: 1.2%
 - Commercial: 1.1%
 - Industrial: 0.1%
 - All sectors: 0.7%
- Total average real prices (2010 dollars) forecast for 2035, by sector, are expected to reach (Figure 2 below):
 - Residential: \$0.12
 - Commercial: \$0.11
 - Industrial: \$0.07
 - All sectors: \$0.09

Figure 1. Kentucky Electricity Consumption by Sector, 1960-2035

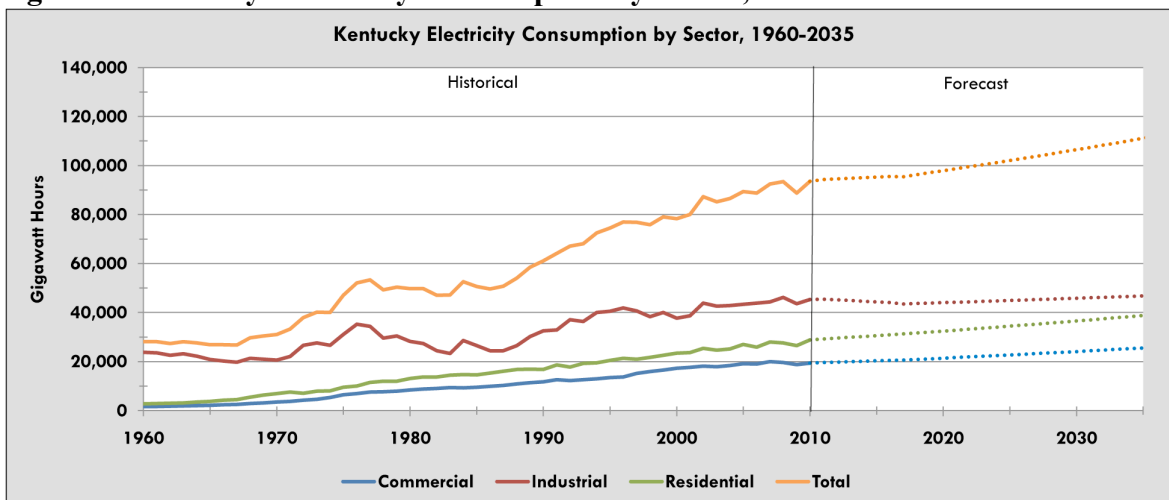
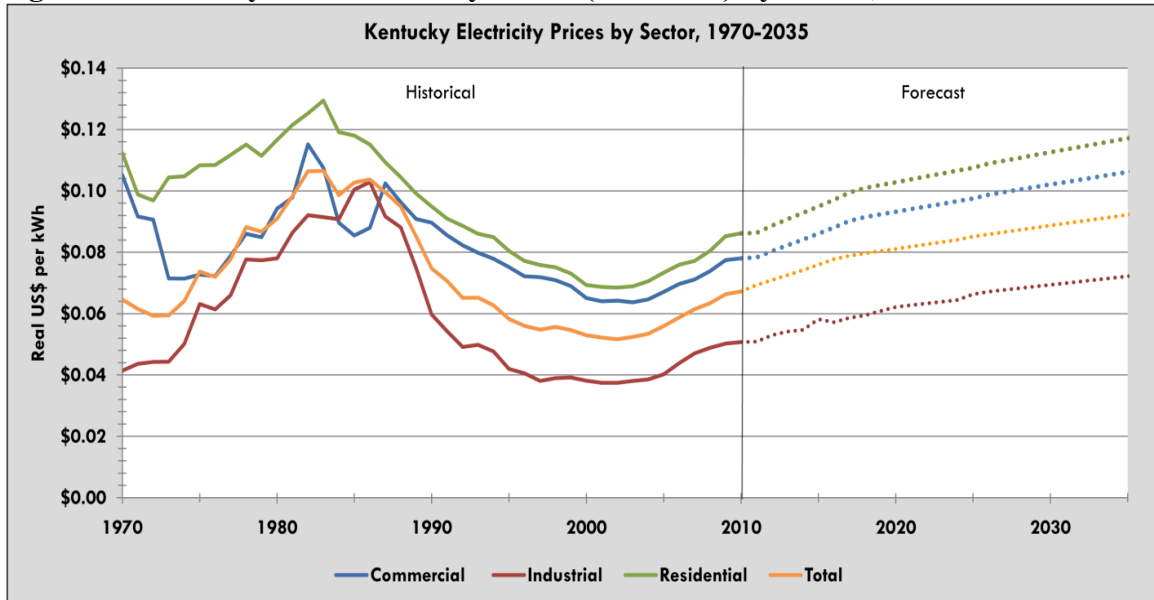


Figure 2. Kentucky Real Electricity Prices (2010 US\$) by Sector, 1970-2035



Summary comments:

- New or pending environmental federal regulations could potentially impact the economic viability of existing and future electric power generation facilities in Kentucky.
- Investment in energy efficiency can mitigate the impact of rising electricity prices.
- Energy efficiency is the least expensive, fastest, cleanest, and most reliable energy resource that can be deployed to meet future energy needs, achieve regulatory compliance, and curtail impending price growth.

Forecast assumptions:

- All assumptions are conservative.
- Prices of all fossil fuels remain low and stable.
- Kentucky continues to depend upon coal for over 92% of electricity generation.
- There are no major retirements in Kentucky’s coal generation fleet beyond those required in legally binding agreements (175 MW Shawnee Unit 10).
- New advanced coal-fired power plants are constructed to meet growing electricity demand.
- Environmental control systems, to include desulfurization equipment, are installed on all coal units by 2017.
- Alternate scenarios are presented in the full report.

Full report citation: Max Neubauer, R. Neal Elliott of ACEEE, and Aron Patrick of DEDI. August 2011. Kentucky Electricity and Natural Gas Price Consumption Forecasts to 2035.