

Rates and energy resources: The regulatory process in Kentucky

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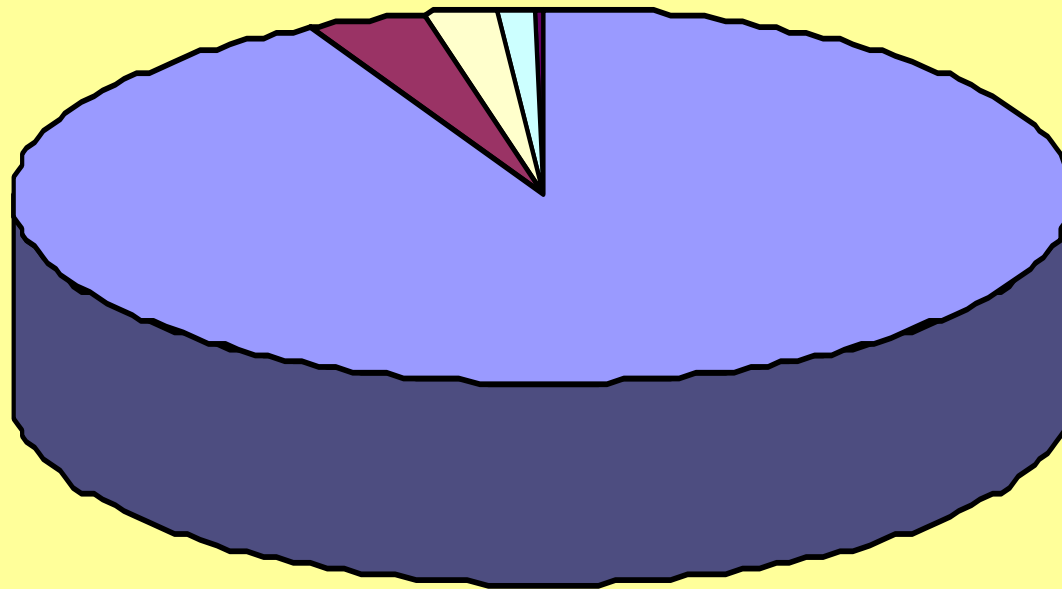
Kentucky: electric generation

20,160 MW generating capacity

72% of capacity is coal-fired

90 million MW-hours (2009)

Kentucky Actual Electric Generation by Fuel - 2009



Coal – 92.7%

Kentucky: inexpensive electricity

“all-in” prices as of March 2011
(cents per kwh)

	KY	US
All customers	6.81 (5)	9.66
Residential	9.15 (12)	11.64

Applicable regulatory mechanisms:

- Integrated resource plans (IRPs) - 807 KAR 5:058
- Certificate of public convenience and necessity (CPCN) - KRS 278.020 (1)
- Ratemaking authority - KRS 278.030 and others
- Demand-side management – KRS 278.285

Operation of all mechanisms is determined by statute, regulation and legal precedent

Integrated resource plans:

- Applies to all jurisdictional electric utilities with generating facilities
- Requires filing of IRPs every three years
- Plans include load forecasts, resource needs and plans for meeting those needs
- Supply-side and demand-side solutions must be included
- PSC staff evaluates plans and issues reports, but the Commission does not approve or deny IRPs

The CPCN process:

- Construction of generation/transmission facilities requires a CPCN
- Statute is general – parameters of PSC decision have evolved over time through legal precedents
- Applicant must show a need for proposed facility
- Utility must show it has considered reasonable options
- Wasteful duplication is not allowed
- “Least cost” principle flows from absence of wasteful duplication
- Grant of a CPCN leads to a presumption of future cost recovery

Ratemaking:

- **Kentucky is non-restructured**
- **Jurisdictional electric utilities are vertically integrated and fully regulated as to rates and service**
- **Rates must be “fair, just and reasonable”**
- **Cost-based ratemaking**
- **Fuel costs, environmental compliance costs and demand-side management programs are separated from base rates and assessed separately**
- **Statutes set forth not only PSC authority, but the process itself**

Ratemaking:

- Notice of intent is required (KRS 278.180)
- Public notice to customers (807 KAR 5:001(10))
- 10-month deadline for PSC decision (KRS 278.190)
- Test year requirement – test year may be historic or prospective (KRS 278.192)
- PSC may suspend proposed rates for five or six months, depending on type of test year (KRS 278.190)
- After suspension, rates may be placed into effect by utility, subject to refund (KRS 278.190)

Demand-side management:

- Utilities may propose plans
- PSC has no authority to require DSM
- Programs may include smart meters, home energy assistance programs
- Cost-effectiveness
 - PSC evaluates a variety of factors**
 - “California” tests**
- Consistency with IRP

Demand-side management:

- **Recovery of program costs, including incentives**
- **Recovery of DSM costs includes foregone revenue**
- **All investor-owned utilities have DSM programs – all are expanding**
- **Electric cooperatives DSM programs are somewhat less extensive than IOU programs**
- **Several utilities have pilot programs to test smart grid technologies in combination with time-of-day or demand-based variable rate structures**

Demand-Side Management and Energy Efficiency Programs - Objectives

- Defer or eliminate need for additional capacity
- Provide opportunities for customer to reduce usage / bills
- Reduce output of highest cost generation / fuel costs
- Reduce level of emissions
- Free-up capacity to make off-system sales

Demand-Side Management (“DSM”) Statute – KRS 278.285

- Enacted in 1994
- Major Features –
 - Stand-alone applications
 - Industrial opt out
 - Surcharge mechanism
 - Class specific
 - Program costs
 - Lost revenues
 - Financial rewards

DSM/Energy Efficiency Programs Delivered by Utilities in Kentucky

Residential Programs

Energy Audits/Analysis

Compact Fluorescent Bulbs

Comprehensive Energy Education

Direct Load Control of Air Conditioners / Water Heaters

Geothermal Cooling and Heating Incentives

New Home Construction – Energy Star

High Efficiency -

High Efficiency -

Heat Pumps

Clothes Dryers – Energy Star

Refrigerators – Energy Star

Air Conditioners – Energy Star

Lighting

Water Heaters

Mobile Homes – New Construction

Heat Pump – Mobile Home Retrofit

Programmable Thermostats

Low-Income Weatherization

Low-Income Energy Assistance

Pilot on-bill financing program for energy efficiency improvements

DSM/Energy Efficiency Programs Delivered by Utilities in Kentucky (continued)

Commercial Programs

New Construction

Efficient Refrigeration

Efficient Heating, Ventilation, and Air Conditioning (“HVAC”)

Efficient Lighting

HVAC Diagnostics and Tune-Up

Direct Load Control of Air Conditioners / Water Heaters

Demand Response

Industrial Programs

Demand Response (Load Shedding)

Demand response (Supply Generation)

High Efficiency Motors

Variable Speed Drive Motors

Combine Heat and Power (“CHP”) Projects

DSM/Energy Efficiency Programs in Kentucky (Examples)

Air conditioner load control (LG&E/Kentucky Utilities)

Similar programs in place at most
jurisdictional electric utilities

- Radio-controlled device mounted on outside AC unit
- Allows AC compressor (not interior ventilation fan) to be turned off remotely for 10 minutes per hour during times of peak demand – weekdays only
- Customer receives \$5 monthly credit during four-month heating season (June-Sept.) for \$20 total
- Capacity to reduce loads by 220 MW during peak times

DSM/Energy Efficiency Programs in Kentucky (Examples)

Smart meter pilot program (LG&E)

- **Testing whether residential customers will modify electric usage in response to price signals**
- **Pairs “smart meters” with in-home devices that display usage and rates**
- **Tiered rates that rise as overall system demand rises**
- **Expanded to include appliances that automatically respond to price signals**

DSM/Energy Efficiency Programs in Kentucky (Examples)

Energy efficiency rebates (East Kentucky Power Cooperative/member distribution cooperatives)

Heating and cooling systems

- **Old system must be at least 10 years old**
- **New system must meet certain efficiency standards**
- **Rebate of up to \$500**

Insulation

- **Sealing of homes to reduce heating/cooling losses**
- **Incentives of up to \$410**

New home incentives

- **Incentives of up to \$250 for purchasers who choose to purchase new homes meeting certain energy efficiency standards**

Recent DSM cases

Duke Energy Kentucky 2010-00445

Kentucky Power 2011-00055

- Both largely renewal of existing programs
- Some expansion of residential programs
- Reduction of residential surcharges
- Neither raised substantial regulatory issues

Recent cases involving renewable energy

Kentucky Power wind energy 2009-00545

- Company proposed 20-year contract to purchase 100 MW of wind power
- KP said purchase would position company for future compliance with renewable mandates or carbon constraints
- Purchase opposed by AG and KIUC
- PSC rejected on grounds of no immediate need for power; higher cost

Recent cases involving renewable energy

KU/LG&E wind power contracts and surcharge 2009-00353

- Joint purchase of 110 MW
- Proposed surcharge for cost recovery (71¢/mo for LG&E, 92¢/mo for KU)
- PSC rejected surcharge request on procedural grounds – said costs should be considered in general rate case
- Case closed in April 2010 when companies withdrew request

Future of energy efficiency in Kentucky

- Kentucky lags in energy efficiency
- Low electric costs are a barrier to energy efficiency programs
- Financial incentives to consumers can help overcome lack of economic imperatives, but are not as persuasive as high energy costs
- Attractiveness of energy efficiency will increase as electric costs rise
- Kentucky already has abundance of “low-hanging fruit”
- Governor’s comprehensive energy plan has major focus on improving efficiency, increasing conservation

Kentucky's electric costs will increase

- **More stringent Clean Air Act standards for SO_x, NO_x, particulates and mercury; new water quality regulations related to ash and scrubber wastes and cooling water**
- **Added controls on newer coal units; old units retired and replaced with natural gas; more emphasis on DSM**
- **Utilities expect total electric costs to rise 20-25%**
- **Additional increases if coal ash declared a hazardous waste**
- **Possible carbon constraints not yet factored in**

Opportunities for increasing energy efficiency in Kentucky

- Residential sector has lagged behind commercial and industrial users
- High proportion of older and substandard housing – small investments in weatherization and other improvements can have big returns
- Recent base rate increases have increased interest in energy efficiency
- With expected rate impacts over next 5 years, demand for energy efficiency programs, especially at residential level, expected to increase

QUESTIONS