Kentucky’s Energy Resources

James C. Cobb
State Geologist and Director
Kentucky Geological Survey
University of Kentucky

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Kentucky’s Fossil Fuel Resources

- Coal: EKCF 53 B/11 B, WKCF 36 B/20 B
- Natural Gas: 124 TCF
- Oil: 2.0 B
- Tar Sands: 3 billion barrels
- Coal Bed Methane: 1 TCF
- Oil Shale: 125 billion barrels
Kentucky Geology

Two major basins separated by an arch.
World Energy Consumption

[Graph showing world energy consumption from 1970 to 2020, with quadrillion btu on the y-axis and years on the x-axis. Lines represent different energy sources: Oil (green), Natural Gas (red), Coal (gray), Nuclear (yellow), and Other (purple).]

www.eia.doe.gov/oiaf/ieo/highlights.html
Kentucky Energy Consumption

- Fossil fuels: 98%
  - Coal: 50%
  - Oil: 36%
  - Gas: 12%
- Renewable: 1%
  - Hydro: 1%

1,868 trillion btu

www.eia.doe.gov/emeu/states/sep_use/total/use_tot_ky.html
Kentucky Electricity Generation

Coal: 74%

Fossil fuels: 95%

Hydro: 4%
Oil: <1%
Natural Gas: 11%
Dual Fired: 10%
Renewable: <1%

http://www.eia.doe.gov/cneaf/electricity/ipp/html1/t17p03.html
Kentucky Coal Fields

- $4.3 B Industry
- $184 M Sev. Tax
- 125 M tons
- $759 M wages

Western KY Coal Field

East KY Coal Field

50 mi
80 km
<table>
<thead>
<tr>
<th>Type</th>
<th>Quantity</th>
<th>Value</th>
<th>Taxes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil</td>
<td>2.5 Mb</td>
<td>$121 M</td>
<td>$5 M tx</td>
</tr>
<tr>
<td>Gas</td>
<td>93 Bcf</td>
<td>$600 M</td>
<td>$24 Mtx</td>
</tr>
<tr>
<td>Tot.</td>
<td></td>
<td>$721 M</td>
<td>$34 Mtx</td>
</tr>
</tbody>
</table>

The map above shows the production distribution across Kentucky, with colors indicating the production type:
- **None**: Light green
- **Oil**: Green
- **Gas**: Red
- **Both**: Magenta
Structure: Top Basement

Note the very deep basin in Western Kentucky.
Kentucky Power Plants

- Coal
- Fuel Oil
- Natural gas
- Hydro
Proposed Power Plants and Expansion

- Coal
- Gasified coal/biofuels
- Natural gas
- Waste coal
Historic Oil and Gas Production

With incentives and access to CO₂, Kentucky could double oil production by 2020.
Gas Potential of the Cambrian: North Edge Eastern Rough Creek Graben

- **Upper Section**
  - Mounded reflectors: fan deposits
  - reservoir facies
  - depth: 14,000 ft.
  - thickness: 2400 ft.

- **Lower Section**
  - fan deposits
  - depth: 21,000 ft
  - thickness: 3600 ft
Thank You!