Economic Impact of Retail Electric Competition in Alabama

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Executive Summary

A comprehensive analysis of the economic impact of retail electric competition in Alabama indicates that electricity prices will rise 6%, consumer surplus will fall, and gross state product will decline. This analysis is the outcome of a joint study by Professors of Economics at Auburn University and the University of Alabama. The study concludes that Alabama should not rush headlong into retail competition because the state has low electricity prices.

Restructuring will raise the price of electricity for most Alabama consumers as retail competition in higher priced states increases demand for Alabama electricity. Higher prices will raise revenue for electricity producers, but at the expense of lower consumer surplus and reduced output in Alabama. Consumers in high priced states are pushing for retail competition, but there is a definite first mover disadvantage for early adoption of retail competition by low price states.

For Alabama, there is also value in learning from the experience and mistakes of other states regarding workable market structures and efficient engineering systems consistent with retail competition. The state is best served by delaying retail competition for the foreseeable future.

There are various possible scenarios for restructuring the electricity industry. The four stages of electricity production and delivery are generation, transmission, distribution, and retail sales. Conventional wisdom is that free entry and competition in transmission and distribution
would be inefficient because of duplication of wires. These two stages of the industry will remain regulated monopolies. Restructuring plans for the electricity industry focus on making generation and retail sales competitive. Generation is already somewhat competitive at the wholesale level. With retail competition, consumers have choice between suppliers.

Competitive retail involves retailers directly competing with each other for individual customers. Distributors would be paid fees based on costs. The analogy is the existing market for long distance telephone service. As states move toward retail competition, some are requiring utilities to divest generation from transmission to avoid conflicts of interest.

The move toward retail competition in the national electricity industry will lead to increased exports from relatively low price states to higher price states. Alabama is a low price state that currently exports about one third of its generation to other states. Importing states in the region are Florida, Mississippi, Louisiana, North Carolina, and Virginia. Alabama is one of the most export-oriented states in the country.

With retail competition in the region, consumers in other states will have direct access to Alabama electricity. This higher export demand will raise the price of electricity in Alabama. Increased exports will be the predominant story in Alabama’s electricity industry over the coming years as retail electric competition evolves.

The Energy Information Agency of the Department of Energy projects the average price of electricity in the US will decline as competition evolves over the next 20 years. The average price in the US is predicted to fall to about the level in Alabama. The average in the US is $.069, the projected average price with retail competition is $.055 for the year 2020, and the current average price in Alabama is $.053.
With continued wholesale competition, downward pressure on prices can be expected. Electricity prices will fall with the entry of competition or the threat of entry into a competitive generation industry. The situation for Alabama is very different from the nation as a whole. The price of electricity in Alabama will rise over the next few years with exports, then begin to fall back toward its existing level.

Coal is the major fuel in Alabama. There is a move toward the use of natural gas, stimulated largely by tightening pollution controls. Nevertheless, coal is likely to remain the dominant fuel for at least another 10 years.

Entry of new generation firms could be difficult for a number of reasons. In restructured states, the existing utilities may be able to set prices to discourage entry. Further, environmental restrictions make it easier to refurbish older generation sites rather than to build new ones. Southern Company owns and controls much of the transmission system, making entry more difficult. Transmission bottlenecks put limits on interstate trade and new generation.

Phase II Clean Air regulations will apparently force generators using coal throughout the eastern US to switch to lower sulfur coal, install scrubbers, or use emission credits. New rules on nitrogen oxide emission will further increase pollution control expenditure by generators. If the commitments for carbon dioxide emissions of the Kyoto environmental summit are implemented, pollution abatement expenditures will rise substantially.

Tightening pollution control requirements will raise the cost of electricity generation. Simultaneously, increased export demand for Alabama electricity will put upward pressure on prices in the state. Some
industrial customers may be able to bargain for reduced rates. In fact, low rates for long-term contracts are already being offered to some industrial customers in anticipation of retail competition. Lower industrial prices will put upward pressure on residential prices.

With retail competition, retail sales can be separated from distribution. Retailers could compete for individual customers inside traditional distribution areas. Regulated “wire companies” would sell wire services to competitive retailers. It is likely that there will be less competition for rural customers, implying rural rates will increase relative to urban rates. Studies of Kentucky and Kansas predict higher rural residential rates.

The role of regulation in the evolving regime is unsettled. There are different forces at work, including state regulators, federal regulators, changing environmental laws, uncertain enforcement of environmental regulations, interstate vertically integrated utilities, traditional utilities, independent power producers, co-generators, federal generation, and regional retail competition. These forces are at odds in many respects, and the outcome will be as much political as economic.

Firms that both generate and transmit are now forced to transmit the electricity of their competitors. A regional transmission system will require regional coordination. There are calls for independent system operators and divestiture of transmission from generation, but planning an efficient system will be difficult. The economies of scope that occur between generation and transmission would be lost with divestiture, and costs of each activity will be higher than for an integrated firm. The move to competition might more than make up for these lost economies of scope, but at this point that is only speculation.
The Alabama Econometric Model (AEM) projects the effects of changes in electricity prices on the state economy and industrial outputs in the state. Three basic scenarios are examined in the AEM up to the year 2003, namely steady electricity prices, falling prices with continued wholesale competition, and higher prices with retail competition. Projected effects on existing industry are small.

The AEM makes specific predictions about the pattern of industrial adjustment up to 2003. With the modest projected decline of 3% in the price of electricity due to wholesale competition, electricity revenue falls by less than 2%. There is a miniscule increase in state output compared to the base case with a steady price of electricity. Consumers pay lower electricity prices, but their yearly gains average only $19 per person over the five years.

This report projects the average price of electricity in Alabama will rise with retail competition from $.053 to the regional average of $.058, then begin a slow decline to $.056 up to 2003, the price predicted by the Department of Energy. The quantity of electricity demanded would be lower in the state than with a steady price of electricity at $.053.

AEM does not speculate on the evolving pattern of investment with a deregulated electricity industry. Investment is the ultimate driving force behind output. The price of electricity is an important determinant of location for many industries. Traditional electric utilities have worked with state and local government on recruiting industry. Investment patterns with a restructured electricity industry may be different than they would have been. Investment changes due to restructuring will have larger effects on output, but they are difficult to forecast.

With retail competition between now and 2003, electricity revenue is projected by AEM to increase slightly, by about 2%. Consumers suffer with
the higher price of electricity, their losses in consumer surplus averaging $77 per capita over the five years. Output declines across all industries due to the higher price of electricity. The industries suffering the largest declines in revenue with retail competition compared to continued wholesale competition are

<table>
<thead>
<tr>
<th>Industry</th>
<th>Percent Change</th>
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<tbody>
<tr>
<td>Miscellaneous Durable Goods</td>
<td>-4.5%</td>
</tr>
<tr>
<td>Textile Mill Products</td>
<td>-1.5%</td>
</tr>
<tr>
<td>Furniture &amp; Fixtures</td>
<td>-1.3%</td>
</tr>
<tr>
<td>Mining</td>
<td>-1.2%</td>
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</tbody>
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Industries with losses over half of one percent are

<table>
<thead>
<tr>
<th>Industry</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fabricated Metal Products</td>
<td>-0.8%</td>
</tr>
<tr>
<td>Chemicals &amp; Allied Products</td>
<td>-0.7%</td>
</tr>
<tr>
<td>Lumber &amp; Wood Products</td>
<td>-0.7%</td>
</tr>
<tr>
<td>Stone, Clay, &amp; Glass Products</td>
<td>-0.6%</td>
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