RETAIL ELECTRICITY MARKETS

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“It’s a sin to buy retail”
Attributed to Woody Allen

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"If you sin, then repent."
Attributed to Woody Allen

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WHAT DO RETAILERS DO IN OTHER INDUSTRIES?

- Convenient locations, times of operation, other services to make shopping more convenient (e.g. Amazon.com)

- Wide range of products and brands with deep inventories at a single convenient location

- Point-of-sale service to Customers

- Post-sale service and return privileges

- Pass along benefits of wholesale buying power (e.g. Walmart, Costco)

- Reputation for providing accurate product information and selling high quality products (Nordstrom)

- Credit, billing arrangements and other ancillary services

- Innovative retailing technologies and strategies which reduce retailing costs and these cost reductions are reflected in lower retail prices

  - Reduce layers of wholesale retail chain and bring customers closer to the wholesale market (e.g. Costco)
WHAT VALUE ADDED SERVICES CAN ELECTRICITY RETAILERS PROVIDE?

- Some traditional retail value added services do not have natural analogies in electricity, especially for residential and small commercial customers
  - Convenient locations and opening times
  - Multiple brands and complementary products
  - Inventory and reliability
  - Point-of-sale service, return privileges, etc.
  - Retailing commodity electricity *per se* is a primarily a set of financial relationships rather than physical production and delivery locations.

- It is easy (and cheap) to buy directly in the wholesale spot market using the UDC as a settlement and billing agent given current metering technology

- Current metering technology is poorly matched to take advantage of wholesale spot market opportunities

- Need to distinguish between “mass market” (residential) and “custom market” (large commercial and industrial)
  - Customer care and billing requirements are different
  - Relative costs of real-time metering, communications and control are different
  - Concerns about consumer exploitation and consumer protections are different. How do small customers get benefits of competition?
  - Opportunities to provide *economical* value added services are different
WHAT VALUE ADDED SERVICES CAN ELECTRICITY RETAILERS PROVIDE?

- Reduce the costs of retailing electricity through innovative sales and billing arrangements (e.g. essential.com, utility.com) and joint sales of electricity, gas, telecom, internet, etc.
  - UDC retailing costs are presently low, especially for large customer segment
  - Little advertising or promotion costs in current UDC cost structures
- Superior wholesale power procurement to offer lower prices
  - Large public competitive markets with transparent prices limit opportunities to use buyer power
- Installation of sophisticated metering, communications and control equipment
- Hedging market-price risk, including weather related impacts, for customers
  - Load profiling makes this harder for mass market
- Inside the fence services
  - Distributed/backup generation
  - Energy efficiency applications
  - Power quality services
- Total energy management/utility services
- Green Power
SOCIAL VALUE OF SUCCESSFUL RETAIL MARKET
AT LEAST FOR LARGE CUSTOMERS

- Having some price-responsive retail load that can actively participate in the wholesale spot market is important for improving performance of wholesale markets.
  - Inelastic spot market demand creates market power problems during very high load hours.
  - Wholesale prices are potentially unbounded during very high load hours.
  - Necessitates price caps and other regulatory interventions that can create other inefficiencies.
  - 10% to 20% of retail load should be in the wholesale market with ability to respond to day-ahead and real-time price spikes.

- Increasing number and diversity of buyers in the wholesale market increases competition, market liquidity, and provides more options for generators to lay off market risk.
  - Lower wholesale prices in the long run.
CHALLENGES FACED BY MASS MARKET RETAILERS

- Customers are sticky and price discounts modest
  - *Median* U.S. residential customer has about $25 in wholesale generation costs in bill ex stranded cost charges

- Limited set of economical value-added services

- Advertising and marketing are costly

- Good back-office billing and settlements operations are challenging and costly to create

- Good customer care and credit services are costly and challenging to create

- "Price to beat" includes little if any RCS costs

- Filtering "good" from "bad" residential customers raises public policy concerns (internet sign-on + internet billing + credit card)

- Scale is very important
WHAT CAN BE DONE?

- Unbundling T&D, Stranded Cost, DSM and unavoidable customer care costs from generation services and avoidable retailing costs

- UDC (as UDC) offers Basic Energy Service at least to residential and small commercial customers
  - Buy directly in wholesale spot market and pass through of wholesale spot market price
  - No hedging or other specialized products
  - Charge for avoidable customer service costs

- Rebalance allocation of RCS costs to reflect cost causality

Distribution Service Charge: \( P_{du} = T&D + S_g + DSM + R_m \)

Basic Electricity Service Charge: \( P_{bgu} = G_w + R_c \)

- Allow utility affiliates to compete as ESPs with appropriate conduct rules and intra-corporate separations
## TABLE 1

### AVERAGE EMBEDDED RETAILING COSTS

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per Kwh</td>
<td>0.27 - 0.38 cents/Kwh</td>
</tr>
<tr>
<td>Per customer</td>
<td>$5.80 - $8.25 per month</td>
</tr>
</tbody>
</table>

**Average Electricity Prices (IOU):**

- Residential: 8.9 cents/Kwh
- Industrial: 4.7 cents/Kwh

**Average Electricity Bill:**

- Residential: $75.00/Month
- Industrial: $7,200.00/Month

## Table 2
### Alternative Retailing Cost Allocation Methods

<table>
<thead>
<tr>
<th>Per Kwh Allocation</th>
<th>Average Embedded RCS Cost/Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential:</td>
<td>$2.25 - $3.20/month</td>
</tr>
<tr>
<td>Commercial:</td>
<td>$15.30 - $21.75/month</td>
</tr>
<tr>
<td>Industrial:</td>
<td>$407.50 - $578.70/month</td>
</tr>
</tbody>
</table>

70% Customer/ 30% per kWh

<table>
<thead>
<tr>
<th>Per Kwh Allocation</th>
<th>Average Embedded RCS Cost/Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>$4.75 - $6.73/month</td>
</tr>
<tr>
<td>Commercial</td>
<td>$8.66 - $12.30/month</td>
</tr>
<tr>
<td>Industrial</td>
<td>$126.33 - $179.38</td>
</tr>
</tbody>
</table>

Retailing Costs Included: Meter reading, meter maintenance, meter carrying charges, billing costs, bad debts, customer services, advertising and promotion, A&G allocation.
**TABLE 3**
CUSTOMERS SWITCHING TO ESPs IN PENNSYLVANIA

PERCENTAGE OF LOAD SERVED BY ESPs

As Of 4/1/2000

(Choice started 1/1/99)

<table>
<thead>
<tr>
<th>UDC</th>
<th>RESIDENTIAL</th>
<th>COMMERCIAL</th>
<th>INDUSTRIAL</th>
<th>1999 RESIDENTIAL SHOPPING CREDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>PECO</td>
<td>17.4%</td>
<td>44.7%</td>
<td>63.5%</td>
<td>5.65 $/kWh</td>
</tr>
<tr>
<td>PP&amp;L</td>
<td>2.8</td>
<td>37.8</td>
<td>63.6</td>
<td>4.26 $/kWh</td>
</tr>
<tr>
<td>GPU ENERGY</td>
<td>6.6</td>
<td>58.7</td>
<td>69.2</td>
<td>4.53 $/kWh</td>
</tr>
<tr>
<td>DUQUESNE</td>
<td>24.7</td>
<td>41.0</td>
<td>13.2</td>
<td>4.75 $/kWh</td>
</tr>
<tr>
<td>ALLEGHENY</td>
<td>1.2</td>
<td>23.6</td>
<td>30.0</td>
<td>N/A</td>
</tr>
</tbody>
</table>

N/A: Comparable numbers are not available since transmission charges are treated differently for Allegheny. However, the comparable shopping credit for Allegheny is likely to be lower than those reported for the other utilities.

Source: Pennsylvania Office of Consumer Advocate
TABLE 4

RETAIL CUSTOMER SWITCHING TO ESPs IN CALIFORNIA
As of April 15, 2000
(Retail choice started 4/1/98)

<table>
<thead>
<tr>
<th></th>
<th>% of Demand</th>
<th>% of Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESIDENTIAL</td>
<td>2.3%</td>
<td>1.9%</td>
</tr>
<tr>
<td>COMMERCIAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 20kW</td>
<td>4.9%</td>
<td>3.9%</td>
</tr>
<tr>
<td>20 &lt; kW &lt; 500</td>
<td>14.9%</td>
<td>7.2%</td>
</tr>
<tr>
<td>INDUSTRIAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 500kW</td>
<td>32.6%</td>
<td>20.1%</td>
</tr>
</tbody>
</table>

### TABLE 5

**RETAIL CUSTOMER SWITCHING TO ESPs IN MASSACHUSETTS**

As of March 2000  
(Retail choice started 4/1/98)

<table>
<thead>
<tr>
<th>Category</th>
<th>% of Retail Sales</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential:</td>
<td>0.17%</td>
<td>[1,989 customers; 1 low-income customer]</td>
</tr>
<tr>
<td>Small Commercial:</td>
<td>0.83%</td>
<td></td>
</tr>
<tr>
<td>Medium Commercial:</td>
<td>3.82%</td>
<td></td>
</tr>
<tr>
<td>Large Commercial/Industrial:</td>
<td>18.37%</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Division of Energy Resources, Commonwealth of Massachusetts, May, 2000*