NODAL AND DYNAMIC PRICING IN RETAIL RATES: POTENTIAL BENEFITS AND CONCERNS

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*These views are strictly my own and should not be attributed to my employer. They are also subject to change.
Q. If Demand Side Bids in the Energy Market Receive Nodal Prices, is that Problematic if there is No Coordination with Retail Pricing?

Yes. – The justification for treating demand resources (DR) as “supplies” in the energy market derives from the retail pricing tariff being mostly flat and non-dynamic, thus undervaluing DR.

- If the retail tariff is dynamic, then the customer could be overpaid for the same reduction in usage.
Lack of Coordination Problem, continued

- If you overpay DR due to a lack of coordination, you may get more DR than would be healthy for the system.

- Reliability depends on not going overboard with DR. Power plants tend to have a long life in comparison to DR, and the output of a power plant is easier to measure.

- On the other hand, externalities (environmental, transmission congestion) continue to exist that might justify a touch more DR than even otherwise ideal market signals might suggest.
Q. If Retail Tariffs are Flat, How Can We Motivate Customers to Engage in Demand Response?

- Without dynamic retail rates, your options are limited in spurring DR:
  - Inclining block rates (more EE than DR);
  - More demand charges (including for residential?).
  - Pay customers to take responsive actions or to buy smart appliances that can be cycled.
  - Provide capacity-only payments for DR by large customers that responds a few times a year in system emergencies.
Q. How can Retail Customers Receive Appropriate Compensation for DR (Nodal LMP)?

- Would seem to require advanced metering infrastructure with two-way communication.

- In theory, full dynamic pricing for all retail customers, including residents, would be a positive for customers as a class, as it would reduce overall costs.
Benefits of Using LMPs as the Retail Rate Tariffs

Using the LMP as the retail rate tariff would:

- eliminate the cost of the hedge or insurance that customers pay to get flat basic service rates;
- eliminate the profit margin of the middleman companies which aggregate the plants and then bid to provide basic service tranches;
- Charge customers with low load factors (peakier usage, central AC) more and customers with high load factors (no central AC) less, in a way that would be entirely appropriate, making electricity more affordable for those with least ability to pay; and
- Reduce/eliminate the complication of paying DR in the energy market
Difficulties in Using LMPs in Retail Rate Tariffs-Smart Meters (AMI)

- Assuming AMI is required, will the benefits outweigh the costs?
- Recent pilots project robust consumer response to dynamic pricing (including by some low-income consumers). However,
- Those pilots have not taken place in the midst of a possibly massive and potent ad campaign by competitive retail suppliers offering customers a return to flat rates.
In other words (key point):

- Justifying the cost of AMI might require assumptions of widespread adoption of dynamic retail rates; however

- Retailers might offer flat rates in response to a smart meter deployment program, perhaps destroying the benefit side of the cost/benefit analysis (cancelling reduced T&D costs, DRIPE effects, etc.) Flat rates will presumably prove attractive to heavy AC users, etc.

- Need to avoid, for example, customers taking flat rates in the summer and dynamic in the winter (arbitrage).
Possible Options for Resolving this Situation (AMI vs. Flat Rate Offers)

- Require that basic service rates and the rates of retailers have at least a certain level of “dynamism”?
- Establish through pilots and the experience of other states/nations that dynamic pricing will indeed likely be attractive enough to justify AMI expense?
- Will electric vehicles force a solution?
Difficulties in Using LMPs in Retail Rates-AMI, continued

- AMI proposals have suffered and will suffer from various complaints (some of dubious legitimacy), including meter accuracy, privacy, hackers, health issues.

- Dynamic pricing will likely have winners and losers. Winners might mistakenly perceive themselves as losers or potential losers and sign on to flat rates. True losers may be wealthier customers, some elderly, and some business customers, all well represented during elections.
Difficulties with LMPs in Retail Rates—Too Much Information?

- There is a felt need to avoid charging customers high prices without warnings in advance and an opportunity to respond.
- Will LMPs provide too much information? Information that is timely enough (Use day ahead market)?
- Can you get most of the benefits of AMI through critical peak pricing instead? How about peak-time rebates (no losers)?
How Might FERC Collaborate with PUCs to Assure Coordinated Price Signals?

- FERC could meet with EEI, NARUC and NASUCA, ISOs, and Generators to develop best practices for PUCs to encourage dynamic rates where practicable. (In exchange for reduced Installed Capacity Requirements?)

- Ultimate solution may have to come through Congress, perhaps as part of an electric vehicle push.
Will State EE programs be Enhanced by Fully Coordinating Retail and Wholesale Rates?

- Probably. Where customers see the benefit of reducing usage at peak times, they may well take actions that lead to reduced usage at all times.

- Dynamic pricing could increase the economic benefits of reduced usage for certain EE installations and programs, thus allowing the program to reach more customers through lower incentives.
The End

- Thanks for the invite!
- Questions welcome.