Filing Receipt

Received - 2022-12-14 01:07:57 PM
Control Number - 54335
ItemNumber - 44

In response to PUC Filing Receipt Control Number 54335

Dated 2022-November-10

Comments on the PCM Style of Electricity Market design

Respectfully submitted by John Lenihan

I have a master's degree in electrical engineering, 7 patents, and taught at the university level. I have an MBA from the University of Chicago and currently own a small business in Plano. My family and I have lived in Plano since 1995 and have watched the changes in the electrical marketplace over the years.

I studied every word of the document presented and believe I have a good understanding of the report.

My comments are detailed in the following manner.

1. Response to the report
2. Observations valuable, yet which are beyond the scope of this report
3. Proposal for a better free market model for electricity

Response to the Report

The authors have done a very nice job of considering many of the variables involved in a marketplace and presented them meaningfully. Although there seems to be a contradiction between description of Forward Reliability Market, FRM, on table 1, and FRM on table 38.

From their details I see their recommendation was for the Forward Reliability Market, FRM, and it will take 2 to 4 years to migrate to this method of marketplace.

There is a flaw in the entire discussion in treating the Load Serving Entity, LSE, as the consumer instead of the real consumer of electricity. There is no mention of the transmission to deliver the electricity to the consumer.

It is self-evident that going from a price only with no service level to a price plus service leve,l will increase the amount paid by consumers. The question is how to most efficiently allocate this payment to satisfy stakeholders.

a. Short Term of 2 to 4 years

There are two alternatives, Backstop and Dispatchable Energy Credits. These seem to be costly and provide only partial protection from the risk of missing the reliability of 1 day in 10 years. I agree with their conclusion that the Dispatchable Energy credits are better. I also agree that last year's winterization of generators if done properly, will protect us from problems over the 2 to 4 year implementation horizon of the LSERO or FRM or PCM options. I agree not to invest in the backstop short term options.

b. Longer Term over 4 years

The authors have concluded the market model that best fits the objectives is the FRM Forward Reliability Market model. ERCOT thinks PCM may be better. It appears that the difference is between a one-year horizon and a longer horizon. A horizon longer than one year is better for the market to put into place reliability options, which points to the FRM. Additionally, the reward or penalty for actual performance idea of Performance Credit Mechanism, PCM, is crucial to cause generators to enter the market with more reliable solutions. My recommendation is to take the reward structure of the PCM with the longer-term incentive structure of the FRM to get the closest to the objective.

However, I believe that neither of these will solve the ultimate objective of a competitive marketplace.

Observations

Facts from the report

a. Texas' electricity demand is going up.
b. Consumers have no service level guarantee for their electricity.
c. Generators have been incentivized to low cost and low reliability.
d. Many new generators are of the kind that are inherently low reliability such as wind and solar.

Facts from a consumer

In 27 years, I have lost my electricity power approximately 6 times a year which is more than 150 times. Twice it has been on the cold days which garner a lot of finger pointing and public uproar. Once it cost me a significant sum. But most of the time it is on clear sunny days or clear nights.

Unlike other vendors like the gas company, telephone company, cable company, water company, there is no single entity to hold accountable for all my electricity interruptions. I discovered this when I suffered consequential damages during the winter outage and discovered no one was responsible.

1. Not the generators (whom I have not access to)
2. Not my electricity billing company (the LSE)
3. Not the company that maintains the wires (Oncor)
4. Not ERCOT
5. Not the State of Texas

This is not a free market. I am a zealot for the free market system, but this is not it. In Texas we have the worst of the free market plus the worst of a monopoly. Consumers have no rights at all that come along with their purchase. There is nothing good about this set up compared to a free market system. This experiment of free market has caused a situation where providers waste money advertising electricity instead of trying to make it reliable. Where the LSE adds no value to me except as a billing convenience. These LSE's are incented to have low initial prices encouraging churn. No one is incented to do the best thing for my interest.

In addition, there is an overhead function of the Independent System Operator, ISO, which is ERCOT, to monitor and manage the loads. In a monopoly this is all part of the firm's responsibility.

If this were the only option, it might be a more efficient system to go back to a monopoly that was regulated by a small government team and let the monopoly take care of generating, providing reliability, delivering, billing, and customer service for the electricity used by consumers.

But there is another option.

Proposal to create a truly free market system

The proposal is to allow the Consumer, both industrial and retail, to choose the electricity package from an LSE they want based on both:

1. Price and Commitment term
2. Service Level Guarantee, directly related to reliability

That is it. So simple, so perfectly free market.

The difference is the service level guarantee, not just price and commitment term. For a free market of a perishable service like electricity, one needs the option of price and the option of service level guarantee. Market equilibrium comes through each consumer voting by their choice of reliability that they want when they purchase the electricity.

This can easily work with the smart meters that we already have. They are installed in all delivery points. The smart meters today have the capability of monitoring electricity consumption per small unit of time. They also can meter whether electricity is even being delivered to this location. They can allow the electricity to be disconnected or connected at this point of delivery.

Let's picture these smart readers were being used not just for the convenience of the LSE, but for the benefit of the consumer.

The options for a retail consumer going to the Powertochoose.org would look something like these four offers potentially from the same LSE, or different LSE's.

Offer	Months	Price	Minutes of outage	Number of outage events	Compensation to for outage
1	12	$0.15 / kwh	1	1	None
2	12	$0.10/kwh	20	10	1 times previous months bill
3	12	$0.08/kwh	1000	50	None
4	12	$0.05/kwh	Unlimited	Unlimited	You may turn off my electricity to shed load

Offer 4 is the permission for the LSE to load shed an individual consumer by turning off electricity through the smart meter. There will be enough people choosing this option that there might never be a need to do rolling blackouts. Every single rolling blackout is a failure in the supply and demand system because the consumer has no choice. Some consumers have situations where it is extremely important to maintain electricity, like hospitals and the elderly. Some consumers would be willing to live with the risk of being inconvenienced with times of no electricity in return for a lower price.

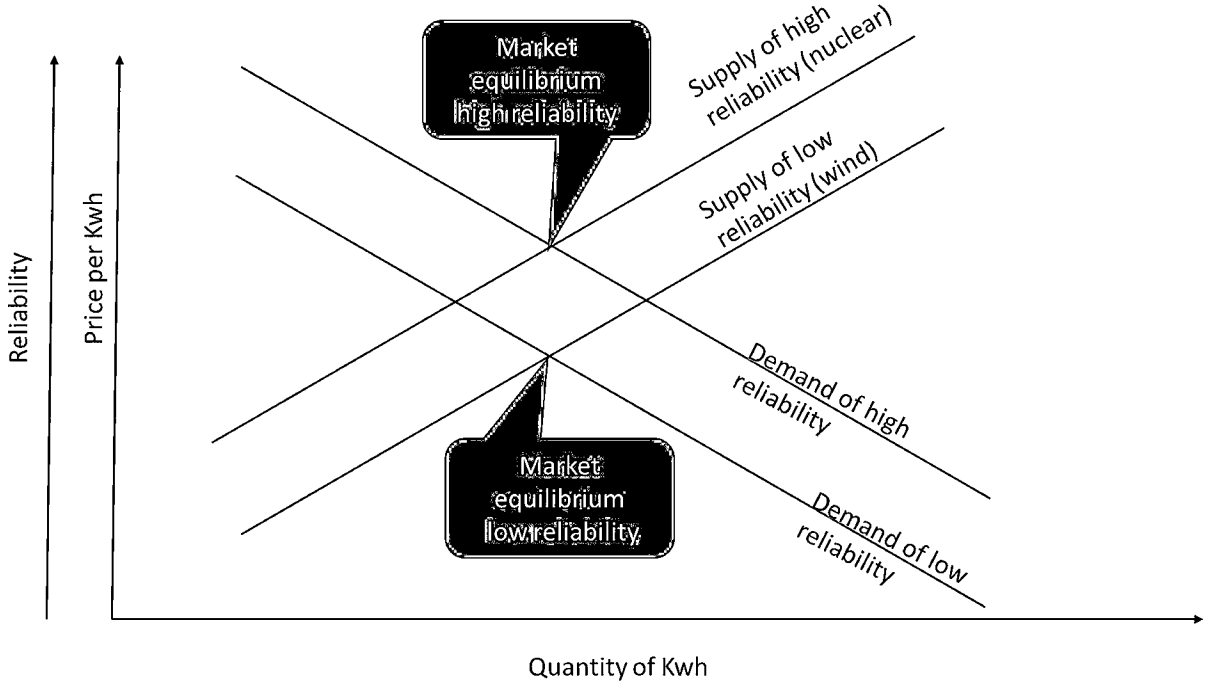
This utilizes the LSE structure already in place, but the LSE would begin to truly work for their consumer.

The LSE's must be authorized to:

1. Own the relationship with the distribution company like Oncor and the generators. So, if my LSE detects I lost power for 50 minutes and it is now below my agreed upon service level, the LSE compensates me according to our agreement.
2. If they determine power was available during period, they can charge a penalty to Oncor.
3. If the LSE determines that the problem is their contracted generators are not producing enough for the sum of the LSE's needs, they can charge a penalty to the generator.

In other words, the LSE becomes my agent, looking out for my best interests as determined by me in advance. I will want to find an agent that does that well. They can hold their suppliers of generation and transmission accountable. The generators can hold their suppliers accountable. It is a closed loop system with the consumer back in control of their own variables.

The equilibrium is shown in the simple diagram of supply and demand. The x axis is qty of kwh. There are two y axis. One in pure dollars which is the combination of price plus the service level agreement and a parallel one in reliability.



Expected Results

If a consumer can choose their level of reliability and price, they have no motive to complain to the state of Texas for an outage. Some will choose low price and buy blankets or buy a generator. Some will choose a high service level and the commensurate price and be confident they can complain to their LSE if something goes awry. Consumers might invest more in their own solar panels or wind generators.

If an LSE must answer to their consumer's reliability as well as low price, it will increase its price to pay for those who choose higher reliability. It will lower the price to those who chose lower reliability. It will be responsive to the consumer. An LSE might encourage its consumers to become generators with solar and wind sources.

If the transmission firms of the state are held accountable for outages, they will be more responsive to the LSE instead of forcing consumers to contact the transmission firm about the outage.

If the generators must answer for reliability to their commitments with cash penalties, they will push on their suppliers for assurances. They will invest in high reliable sources like nuclear and natural gas.

If fuel suppliers have service level commitments, they will increase their price to pay for weatherizing their supply and determining a way of stockpiling.

ERCOT, will be able to remove itself from the critical path of the these generator-LSE relationships, and is able to focus on overseeing the LSE's and making sure they are capitalized enough for this additional responsibility. They respond to cases of the LSE not meeting its commitments to its consumers.

Each party in this arrangement becomes more responsible to the true needs of their individual customers. The outcome is the most efficient use of resources to provide the exact electricity today and in the future.

Implementation will require participation by the state legislative body. The instructions that have been given to the PUC have been narrowly focused, and left the real consumers out of definition of marketplace.

There are risks that this approach might fall short. Some ways include:

1. After the memory of severe weather fades people might choose the low reliability low cost option.
2. Consumers continue to complain about outages without mentioning that they chose the low reliability option.
3. Not enough high reliability option choices does not provide needed generator investments forcing the PUC to remove some or all of the low reliability options to consumers.
4. It becomes too burdensome for LSE's to keep track of all the consumer options and real time events and they stop offering them.
5. A consumer might choose a low reliability option and decide they are truly not prepared for the low reliability event when it happens.

It would be very wise for ERCOT to expand their response to the PUC and as for the Texas legislature to include the end consumer in the marketplace. Quite possibly using the smart meter and enhanced LSE role I have outlined.

It would be wise for our legislators to decide if they really want a free market or really want a controlled monopoly for the people of Texas.