



PJM ARR and FTR Market Task Force

Dominion Energy Comments | February 23rd, 2020

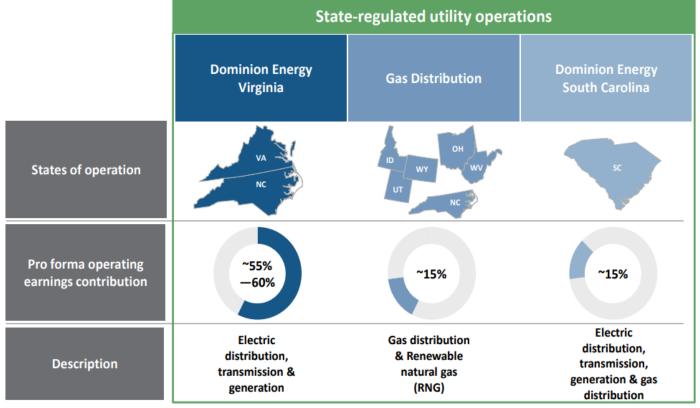
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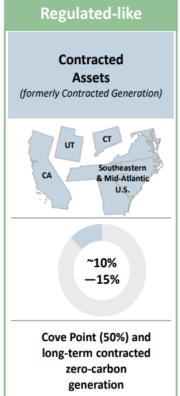
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Dominion Energy *Company Overview*



- Narrowed focus on regulated and regulated-like businesses
- Premier state-regulated utility operations
- Industry-leading clean energy profile
- Long-term earnings and dividend growth





Aggressively pursuing vision to be the most sustainable energy company in the country

London Economics ARR & FTR Market Analysis

Dual Purpose and Criteria

Purpose 1:

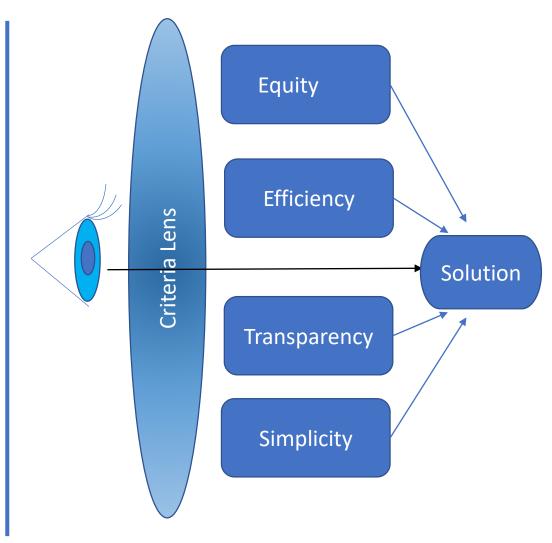
Facilitate the return of over payment in LMP (Congestion Charges) back to Load

- Payments made by all load serving entities exceed the payments to all generators when there is congestion.
- Over-payment should be returned to load because load paid for and continues to pay for the transmission system.

Purpose 2:

Enable hedging of the marginal costs of congestion in LMPs between different nodes and support forward market activity through the offer of FTRs.

- FTR auction results provide a granular understanding of expected network congestion, which helps market participants hedge congestion risk more effectively.
- Price discovery emanating from FTR auctions supports liquidity in forward markets and reduces the transaction costs of hedging and bilateral contracting.
- In the long run, load benefits from a liquid and efficient forward market through lower transaction costs, lower financing costs and optimal reallocation of risk.



^{*}Source: London Economics: PJM ARR/FTR Review Summary of findings and recommendations prepared for the PJM ARR/FTR Task Force

London Economics ARR & FTR Market Analysis

Key findings

Dominion Energy generally agrees with London Economics key findings...

- Majority of congestion charges collected in day-ahead energy market have been returned to load
- A path-based construct continues to be relevant in the present day due to significant amount to load that is contracted bilaterally or self-supplied.
- > FTR auctions are generally efficient and should be retained with minimal, incremental changes.
- > Dual system of property rights, encompassing ARRs and FTRs, creates value for load and should be preserved.
- ➤ Historical gen-to-load ARR allocation process and rules-based surplus allocation may be creating equity issues between LSEs.
 - ➤ Main takeaway: Congestion charges returned to load do not correlate with load, LMP paid, or transmission revenue requirements paid by zone.

London Economics ARR & FTR Market Analysis

Key findings

Dominion Energy shares concerns with the ARR Allocation process...

- Significant amount of network capacity is not allocated to load.
- > ARR paths available to load are not representative of network use/value.
 - Initial ARR target allocation is based on historical paths set when Dominion joined PJM (2005), but never adequately reflected how load was being served.
 - > Supply and demand conditions have significantly changed and ARR paths no longer reflect how load is being served.
 - As a result, some load cannot effectively hedge congestion risk using current ARR paths.

Dominion Energy would add...

- Even though the FERC 2016 Order replaces retired generation nodes with existing nodes, supply and demand conditions have significantly changed. ARRs still do not reflect how load is being served.
- > Incremental ARRs are not feasible for network upgrades made for generation interconnections.
 - ➤ Individual upgrades don't produce sufficient capacity in PJM models.
 - > Upgrades over a period can result in increased capacity and should result in allocation of IARR's to those generators paying for upgrades.

Dominion Energy's Recommendations

ARR and FTR Market

- ✓ Principles and purpose of ARR and FTRs should be clearly defined.
- Congestion Definition: Clearly define congestion costs incurred to load as well as vertically integrated utilities, such as Dominion Energy. True congestion for Dominion Energy is network congestion and is the difference between what load pays and what generation is paid.
- **Zonal Distribution and Congestion Costs:** Develop an objective definition of equity based on established principles and purposes and establish a more detailed understanding of zonal patterns of congestion. Address the mis-alignment between the zonal distribution of congestion revenue and congestion costs.
- Transmission Outages and Seasonal ARRs: Modify the treatment of transmission outages when allocating ARRs to firm and
 network transmission customers to accommodate short term outages. PJM should also offer seasonal ARR product to firm
 transmission customers to manage the effect of transmission outages.
- **Balancing Congestion:** Implement means for market participants to hedge balancing costs. Balancing costs have become a larger percentage of congestion costs, yet there is no means to hedge against it.
- Off Peak FTR products: Expand off-peak products to align more closely with commercial behavior and needs.
- **FTR Surplus:** Ensure that the ARR allocation is not overly conservative, thereby systematically creating an excess FTR surplus.

Inequitable ARR allocation

Drivers and Solutions

Stage 1A and Stage 1B

Limitation of source nodes to historical generation and Qualifying Replacement Resources (QRR).

Limited to qualifying nodes.

Ignores Imports

Stage 2

Limitation of sink nodes within zones.

Incremental ARRs

Awarded for transmission projects.

ARRs can be awarded for generation projects, but often deemed infeasible.

Possible Solutions

Explore aggregation of requested IARRs in model/SFT

Expand biddable points for ARRs including imports.

Ease limitations on QRR nodes and consider changes to SFT.

Consider allocation of excess FTR revenues to load falling short in recovery of congestion costs

*SFT = Simultaneous Feasibility Test

Summary

PJM and stakeholders should work together to...

- Cleary define ARR/FTR market principles/purposes using pre-established criteria
- Implement LEI's recommendations for ARR enhancements
- Develop incremental changes to FTR market
- Enhance network model transparency







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