ARR/FTR Capability and Value
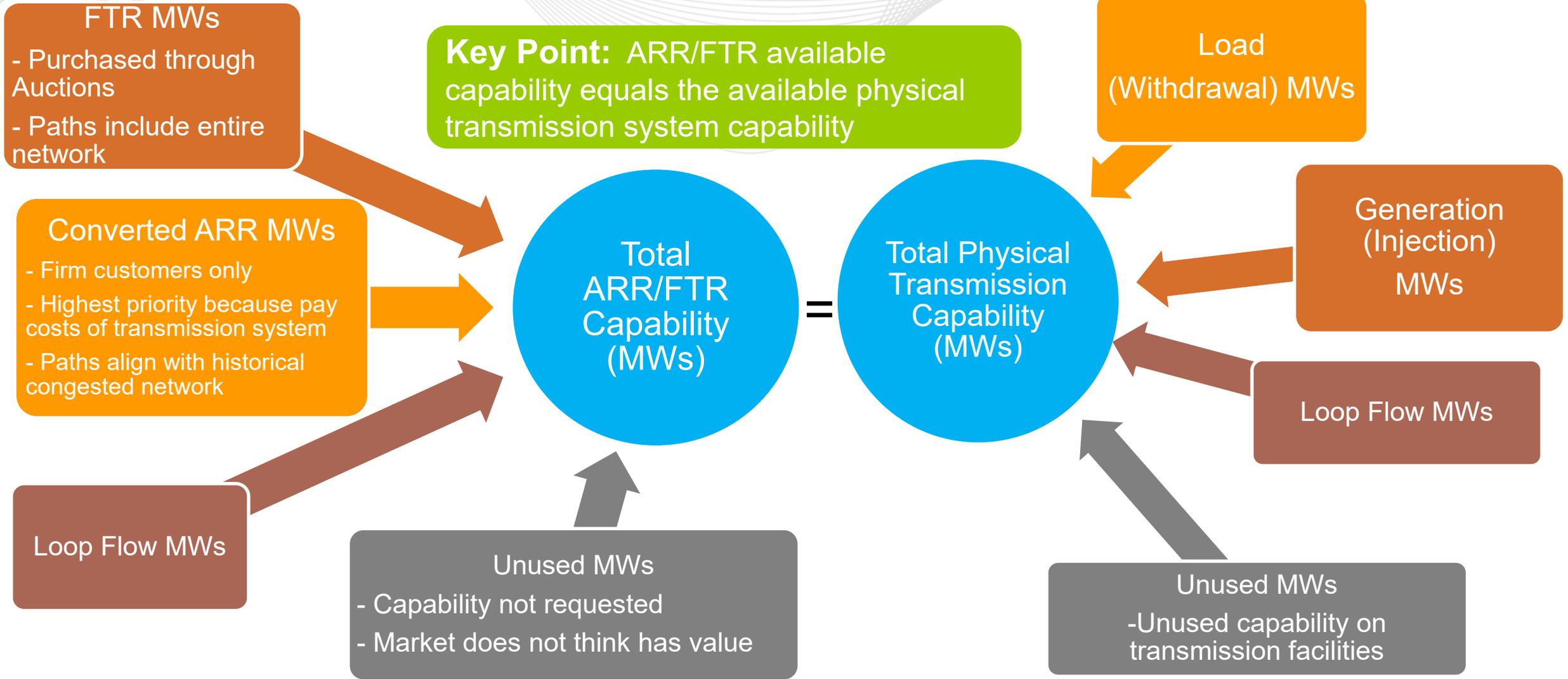
Tim Horger
Director – Market Operations

- Demonstrate how ARR/FTR modeled capability aligns with actual physical capability.

- Demonstrate how existing ARR/FTR market construct is intended to value 100% of the available capability and return that value to load.

- NOT a defense of or proposal for status quo

Transmission Capability of ARR/FTR vs. Physical system

FTR MWs
- Purchased through Auctions
- Paths include entire network

Key Point: ARR/FTR available capability equals the available physical transmission system capability

Load (Withdrawal) MWs

Converted ARR MWs
- Firm customers only
- Highest priority because pay costs of transmission system
- Paths align with historical congested network

Total ARR/FTR Capability (MWs) = **Total Physical Transmission Capability (MWs)**

Generation (Injection) MWs

Loop Flow MWs

Loop Flow MWs

Unused MWs
- Capability not requested
- Market does not think has value

Unused MWs
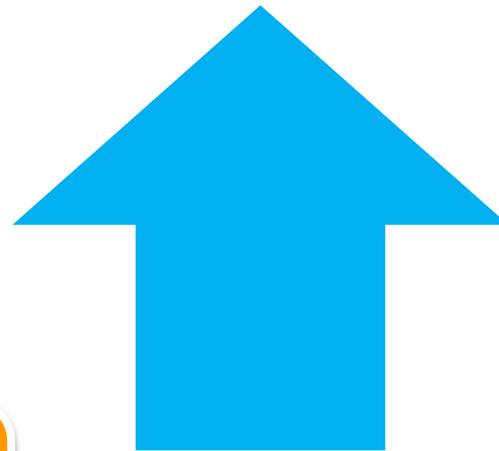-Unused capability on transmission facilities

Congestion Payments

Congestion payments made when transmission system cannot accommodate least cost resources
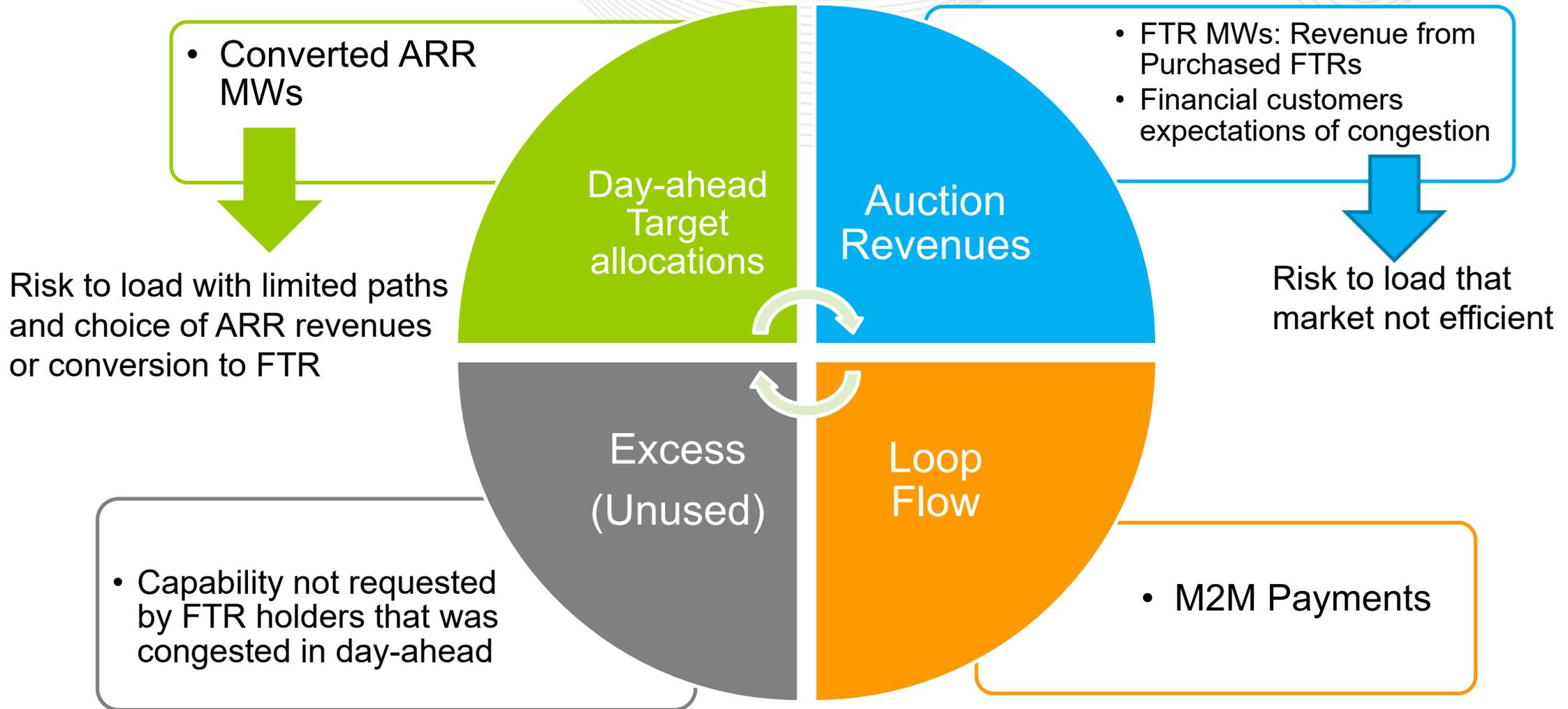
ARR/FTR Revenues

ARR/FTR Revenues used to offset congestion costs ideally on same paths of congestion

- Path based support self-supply and bilateral contracts (Majority of how load is served)
- Perfect hedge for individual load arrangements is most desirable
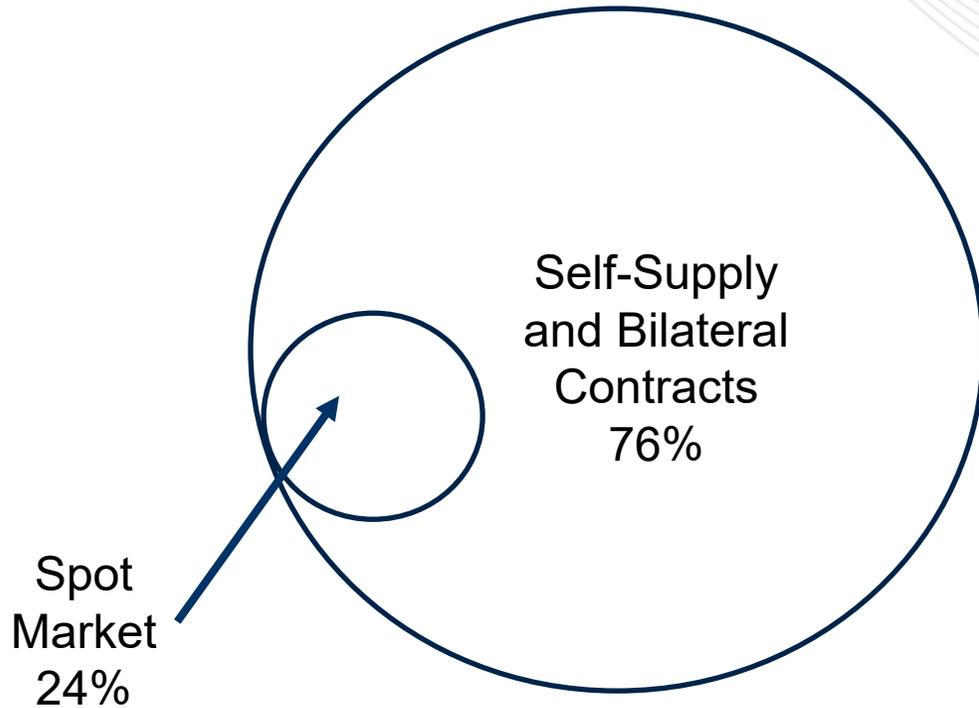
Key Point:
ARR/FTR market designed so that ARR/FTR revenues offset congestion charges in alignment with how load is actually served.

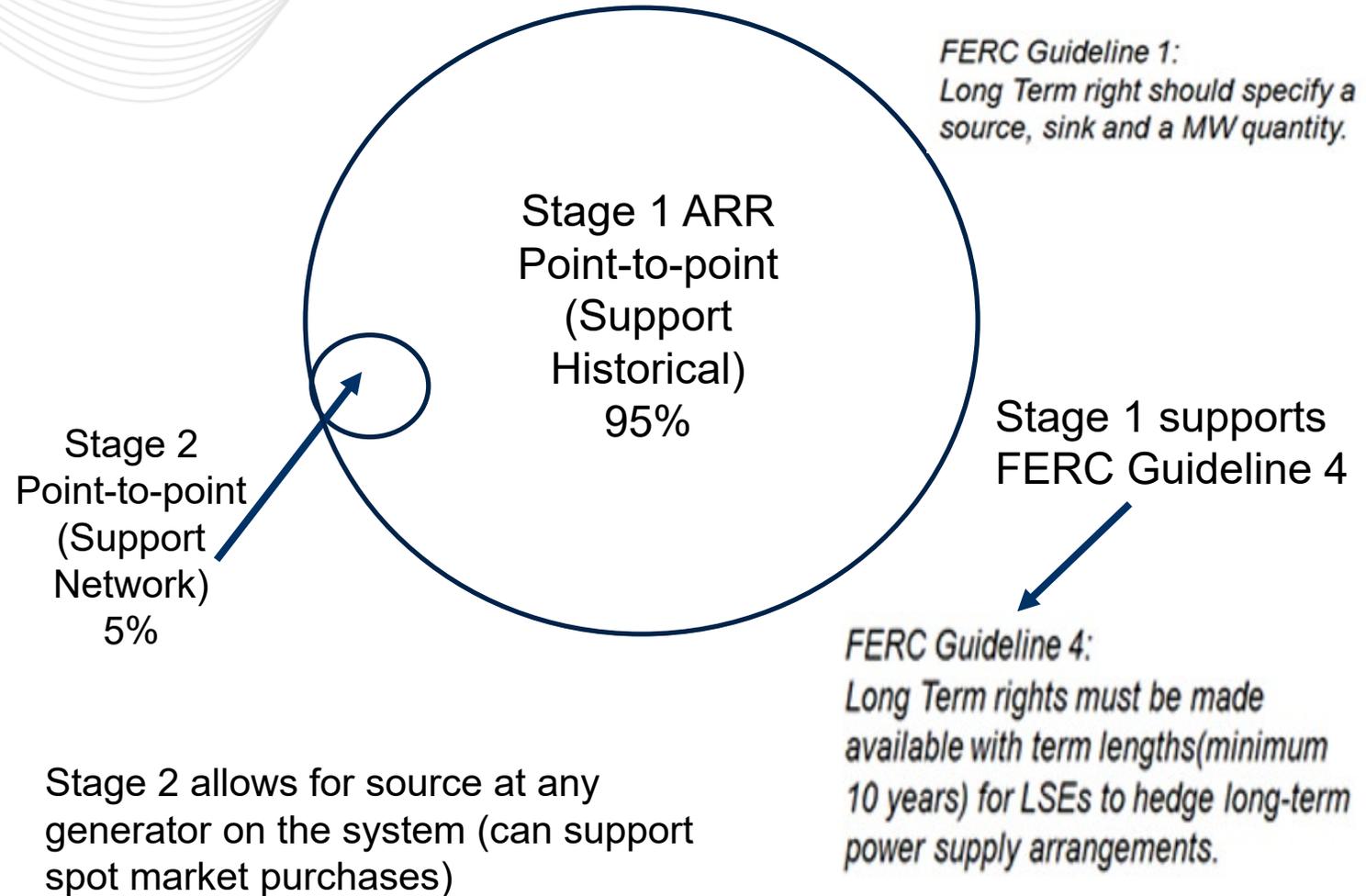# How does Load receive revenue for 100% of available capability?

- Converted ARR MWs

Risk to load with limited paths and choice of ARR revenues or conversion to FTR

- FTR MWs: Revenue from Purchased FTRs
- Financial customers expectations of congestion

Risk to load that market not efficient

Day-ahead Target allocations

Auction Revenues

Excess (Unused)

Loop Flow

- Capability not requested by FTR holders that was congested in day-ahead

- M2M Payments

Key Point: Load receives revenue for 100% of available capability but value may not be optimal.

How is PJM Load Served?

Self-Supply and Bilateral Contracts
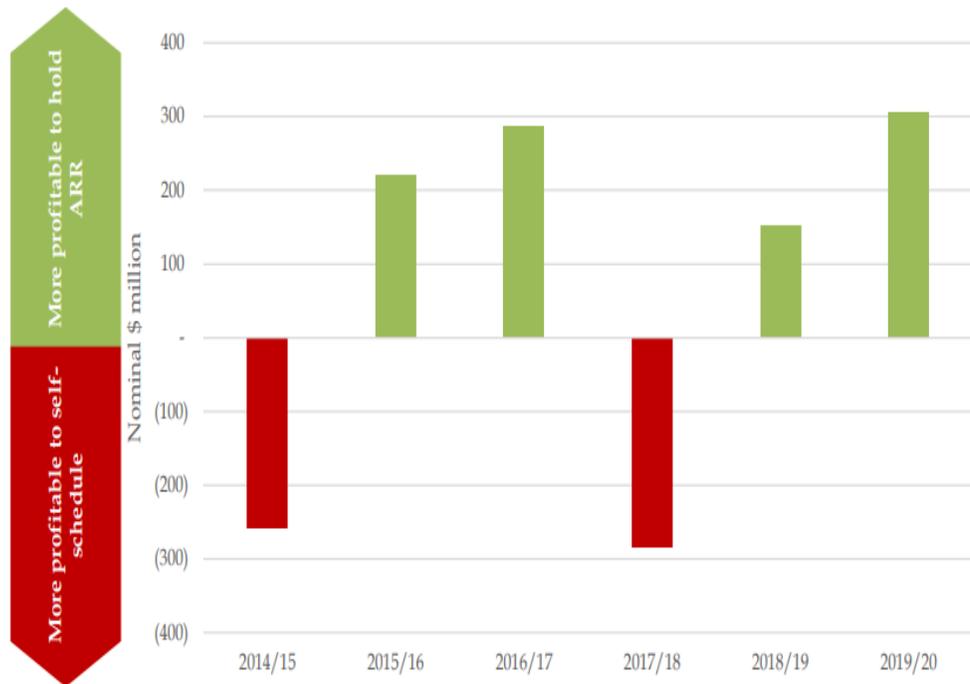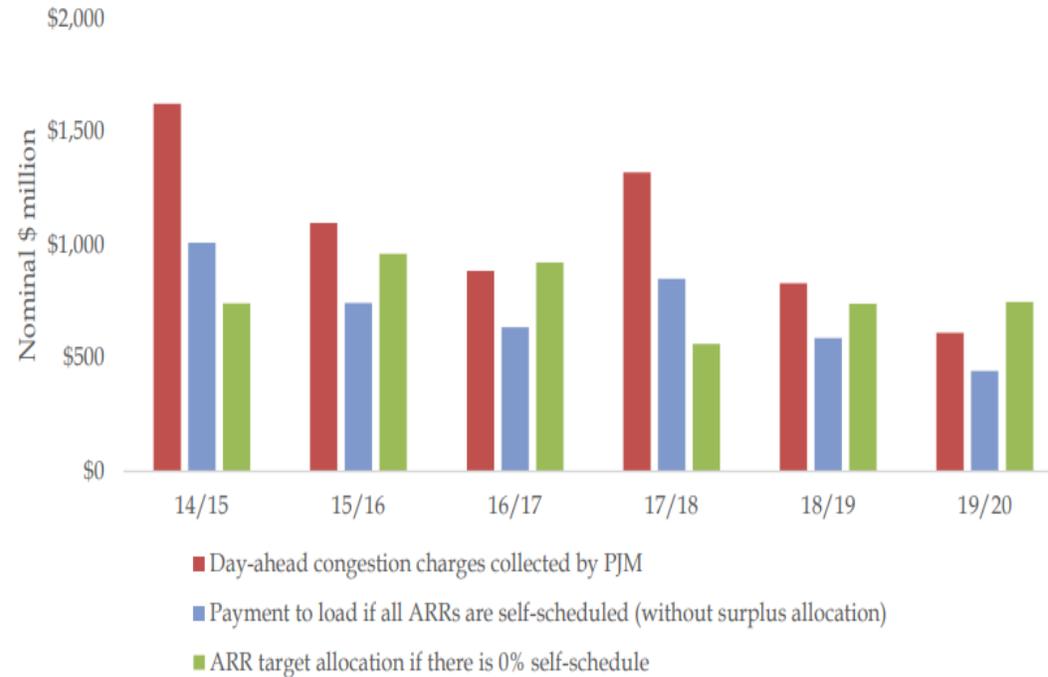76%

Spot Market
24%

How does PJM allocate ARR?

Stage 1 ARR Point-to-point (Support Historical)
95%

Stage 2 Point-to-point (Support Network)
5%

FERC Guideline 1:
Long Term right should specify a source, sink and a MW quantity.

Stage 1 supports FERC Guideline 4

FERC Guideline 4:
Long Term rights must be made available with term lengths(minimum 10 years) for LSEs to hedge long-term power supply arrangements.

Key Point: *Existing Allocation of ARRs was designed to support the method by which Load is served*

Stage 2 allows for source at any generator on the system (can support spot market purchases)

Figure 7. Payouts from holding ARRs or self-scheduling (hypothetical example)

Note: This analysis intentionally does not include surplus allocation and balancing congestion charges. For a more detailed discussion of this analysis, please refer to Section 6.7.

Figure 29. Congestion returned to load if all ARRs are self-scheduled (before surplus allocation) or none of the ARRs self-scheduled

- Day-ahead congestion charges collected by PJM
- Payment to load if all ARRs are self-scheduled (without surplus allocation)
- ARR target allocation if there is 0% self-schedule

Source: LEI analysis based on data provided by PJM.

Key Point: Load choice impacts congestion hedge

*Data from LEI Report available at following link: https://www.pjm.com/-/media/committees-groups/task-forces/afmtf/postings/lei-review-of-pjm-arrs-and-ftrs-report.ashx