PJM Co-located Load Show Cause Order Workshop

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Co-location of Large Loads and Generation

How do we address Co-location and Interconnection with the Power Grid?

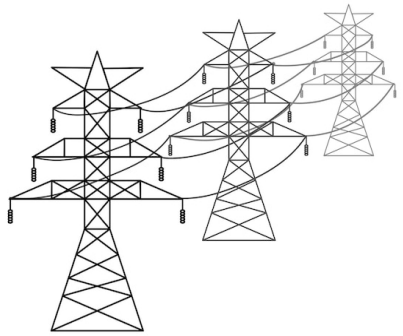
Guiding Principles

- **Transmission Rate Fairness** – Transmission rate tariffs should be designed such that there is rate parity between load connecting behind a generator meter versus connecting to the grid with a load meter.
- **Interconnection Process** – The Interconnection process for large loads should be:
  - Clearly documented
  - Transparent
  - Non-discriminatory, not preferential to any single class of customers
- **PJM Markets and Resource Adequacy** – Co-location arrangements should not negatively impact the PJM grid relative to conventional grid connection of similar size loads and similar timing needs.

What is Transmission Service and how do we pay for it?

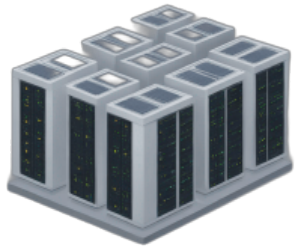
- **Transmission Service** is the cost of building, expanding, operating and maintaining the grid.

*These include RTEP upgrade costs and **<u>embedded</u>** costs of utilities associated with (not all-inclusive) the day-to-day running of the grid, such as round-the-clock operations, maintenance inspections, repairs to failed equipment, service calls, regulatory filings, compliance filings, accounting, customer billing, connecting new customers, staffing, and many recurring activities to study and plan the grid to meet [illegible]er needs.*



Who pays? Load Customers (NITS or PtP)

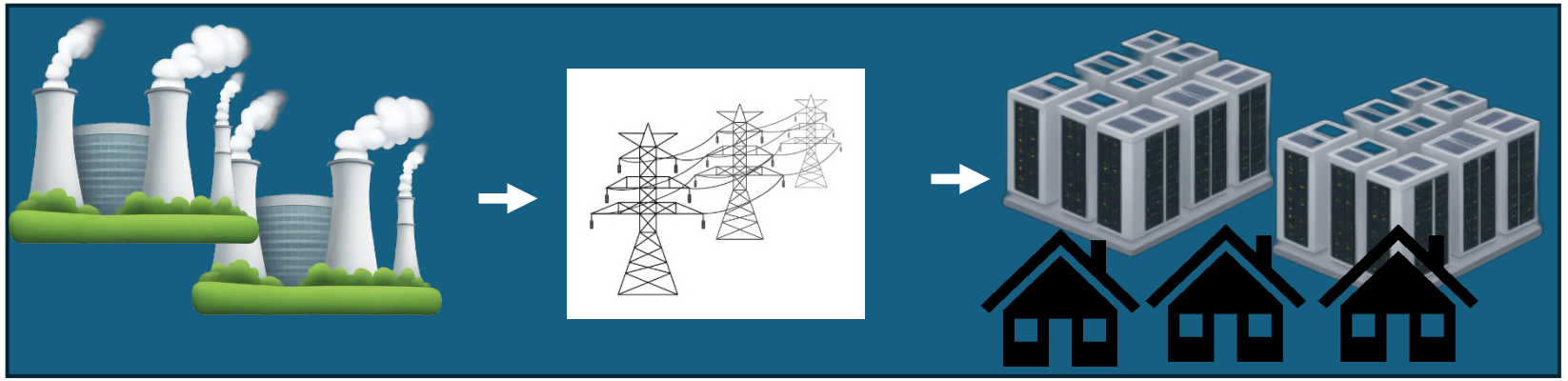
Embedded Transmission Costs (aka Transmission Service) are recovered only from NITS and PtP Load customers under the current Tariff. Because generators connect to the grid for the purpose of serving network load customers, they only pay for the "but for" cost to connect, and Load customer pay for the ongoing embedded cost of the grid.



Customer	Transmission Cost: NITS	Transmission Cost:- Point-to-Point	Transmission Cost: RTEP Upgrade Cost	Transmission Upgrades at time of Interconnection
Network Load	**Yes**	No	**Yes**	No
Short Term Point-to-Point Ser	No	**Yes**	No	No
Long Term Firm Point-to-Point Service	No	**Yes**	No	**Yes**
Retail Load	*Cost assignment per Retail Tariff of applicable LSE*			
Generator	No	No	No	**Yes**
Behind the Meter Generator	No	No	No	No
Co-location Generator + Load	?	?	?	?

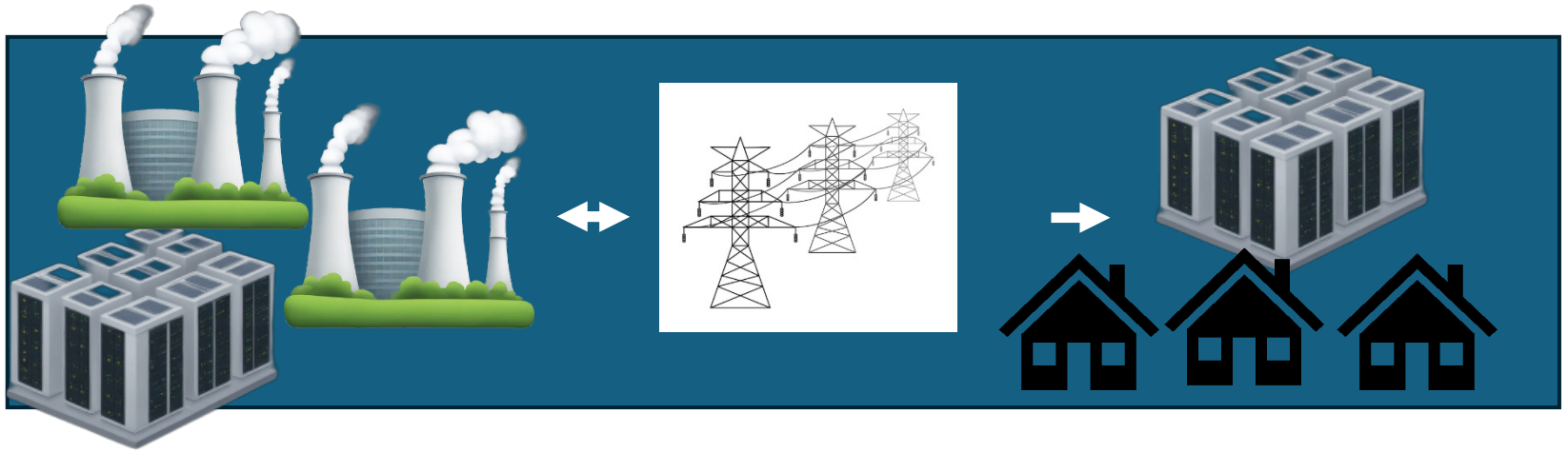
Current PJM Tariff – Assigns transmission costs to existing wholesale Load Customers identified as Network Integration Service (NITS) or Point to Point (PtP) customers.

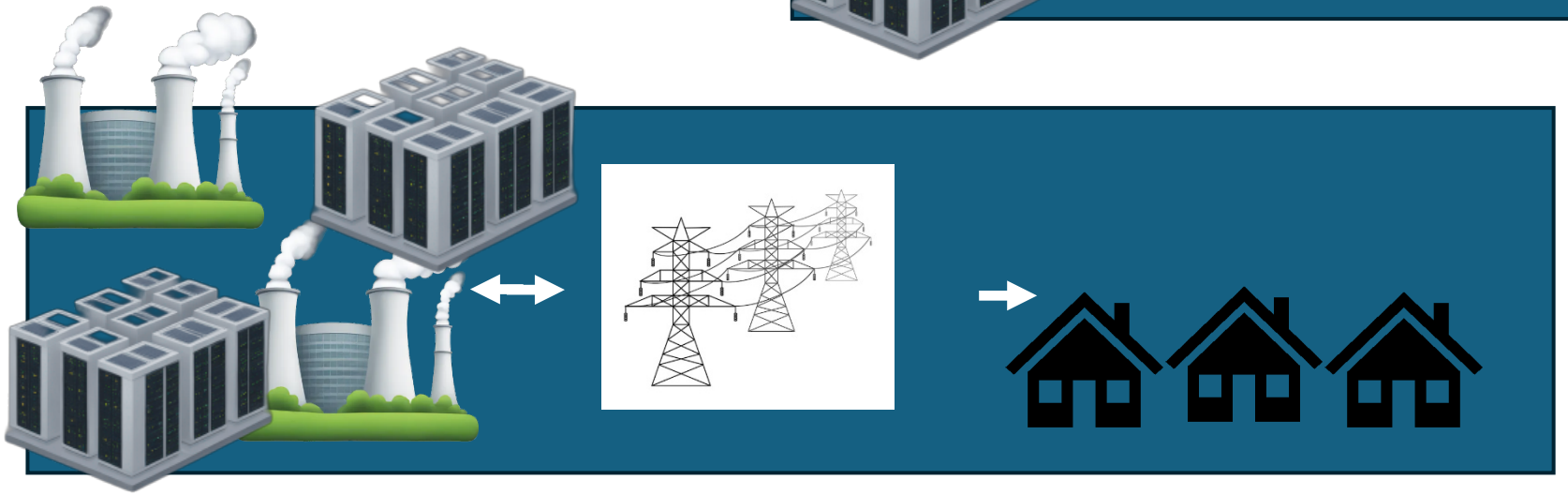
- Retail service for load customers is addressed in distribution rate filings, which are subject to state regulatory proceedings – not FERC jurisdictional wholesale tariffs
- Co-located arrangement is not defined in the PJM Tariff



No Co-location
All Load Customers pay for Transmission Service. All generators provide energy to Load customers.

Some Co-location
Most, but not all, Load Customers pay for Transmission Service. All grid generators continue to provide energy to Load customers.





Widespread Co-location
Fewer Load Customers pay for Transmission Service, but the cost to operate the grid remains. All grid generators provide energy to Load customers.

Transmission Rate Fairness

- **Co-location Arrangements**, regardless of administrative contractual arrangements for energy purchases, are using the grid and benefiting from the grid.
- The issue before us is a matter of **rate design**
- PJM Transmission Owners have this responsibility to propose a rate that will meet the Just and Reasonable Standard and mitigate the risk of free ridership

Ancillary or Other Wholesale Services

- Like Transmission Service, Co-location arrangements that are serving end-use customer load are benefiting from Black Start services, and other ancillary services, such as regulation and frequency response.

- Co-location Arrangements should pay some portion of Ancillary and Wholesale Services that are incurred to support the round the clock operation of the grid.

Interconnection Process

- There are no provisions in the PJM Tariff that provide for interconnecting retail customer load

- The PJM Tariff does not have a pro forma agreement for the purpose of interconnecting retail customer load.

How should PJM accommodate entities that wish to co-locate?

The Necessary Study Proces is not the answer.

Necessary Study and Co-location

- The Necessary Study Process is intended to address routine modifications to a generator project, such as equipment failure/replacements or changes to planned projects due to obsolescence.
- The Necessary Study Process is not a generation deactivation study, yet colocation with an existing generator is effectively the removal of generation, in part or whole, to serve load that is not NITS or PtP load.
- The pro forma ISA (or GIA) does not have any provisions that address the interconnection of retail load.
- By using a single study process to reduce CIRs and interconnect new retail load, the impacts to reliability, resource adequacy and rates cannot be clearly determined, nor can they be properly assigned to the interconnecting entities
- The Necessary Study Process is not transparent

Interconnection Process – Option A
Create a new category of Customer: Co-location of Generation and Load
Integrate into the RTEP Process

1. Establish a new customer category: Co-location of Generation and Load
2. Develop new transparent procedures for generation customers to request co-location arrangements that will be included into the annual planning process
3. Develop an applicable rate tariff that will apply to co-location arrangements, such as transmission service, wholesale services, ancillary services and any other applicable state jurisdictional rates.
4. Develop a pro forma agreement that clearly defines the terms and conditions of the co-location arrangement

**Additional measures may also be needed to protect other rate payers from cost impacts if the load does not materialize as forecasted.*

Interconnection Process – Option B
Create a new category of Customer: Co-location of Generation and Load
Integrate into the Interconnection Queue Study Process

1. Establish a new customer category: Co-location of Generation and Load
2. Develop new transparent procedures for co-location customers to request to interconnect via the PJM Interconnection Queue Study Process.
3. Develop an applicable cost allocation rules that will apply to Co-location Customers (Consider Merchant Transmission as an example.)
4. Develop a pro forma agreement that clearly defines the terms and conditions of the Co-location Arrangement

**Additional measures may also be needed to protect other rate payers from cost impacts if the load does not materialize as forecasted.*

Interconnection Process – Option C
Require Co-location arrangement to be treated as a Load Connection

1. Require generators requesting to operate in a co-location arrangement to convert to a load interconnection with behind-the-meter (BTM) generation.
2. Develop and implement transparent procedures for generation customers to request the change to a load connection with BTM generation such that the new configuration will be incorporated into the annual RTEP planning process.
3. Develop procedures for a generation customer to amend its GIA or ISA to be recognized as BTM generation behind a load customer POI.

**The customer at the point of interconnection would be subject to the applicable retail tariff of the PJM TO zone that the customer is located in.*

Closing Thought

It is the mark of an educated mind to rest satisfied with the degree of precision which the nature of the subject admits and not to seek exactness where only an approximation is possible.

- Aristotle

Translating this wisdom for our job at hand.....

We should aim to be **APPROXIMATELY RIGHT** rather than **ABSOLUTELY WRONG**.

Additional Information and Contact Info

Additional details can be found in Post-Technical Conference Comments submitted by Suzanne Glatz and Abraham Silverman in FERC Docket AD24-11

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