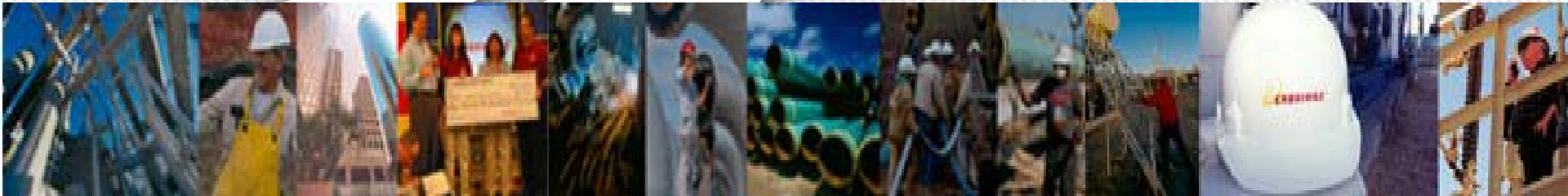




Up To Congestion (UTC)

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UTC: A Congestion Product

The Up To Congestion product is a **financial product** that allows for hedging of congestion and losses throughout the system.

There is no energy component associated with the product, and no physical delivery of energy.

Demonstrated in:

- PJM's descriptions of the product to FERC
- PJM's clearing of the product in the Day-Ahead market as a Virtual Transaction without expectation of physical delivery
- The fact that the UTC product is not modeled in Day-Ahead commitment, unlike an inc or a dec
- PJM Manual 11

Rather than comparing a UTC to an inc or dec, a UTC may be more appropriately compared to an FTR as it is a daily transmission product.

Why is this important?

EMU STF Phase 2 Matrix		
19b	Transactions in demand deviation category	Load, Exports, DEC's, IBT Sales
19c	Transactions in supply deviation category	Imports, INC's, IBT Purchases

A UTC cannot be broken down into a “demand” portion and a “supply” portion. By its very nature, it is financial product that arbitrages the *difference* between two points. As such, it is neither supply nor demand. It is a transmission product, not an energy product.

- It is entered into as a single transaction!

PJM's Definition of a UTC

A UTC is a bid in the Day-Ahead Energy Market **to purchase congestion and losses between two points**. UTC bids can be based on the prevailing flow direction where the UTC is buying a position on the Day-Ahead Energy Market congestion or they can be in the counterflow direction where they are paid to take a position. In either case, like INCs and DEC, UTCs are bids that impose flow on the transmission network in the Day-Ahead Energy Market that do not exist in real-time and therefore classify as a Virtual Transaction. A major difference between an INC or DEC and a UTC is that an INC or a DEC is a discrete injection or withdrawal at a location whereas a UTC is an injection at a source point and a withdrawal at another point.

Because a UTC is composed of an injection and a withdrawal, **they are energy neutral** and therefore, outside of their impact on losses, largely **only impact the commitment and dispatch of the system for transmission constraints**.

Source: Re: PJM Interconnection, L.L.C. Docket No. ER13-1654-000:
Attachment I Report on the Impact of Virtual Transactions

What are UTCs, Incs and Decs?

- An Inc (or incremental offer) is an offer to sell electricity in the Day-Ahead market at a stated price at a particular location (source only).
- A Dec (or decrement bid) is an offer to buy electricity in the Day-Ahead market at a stated price, at a particular location (sink only).
- A UTC (or up-to congestion transaction) is a bid to purchase transmission congestion in the Day-Ahead market at or below a stated price, between two points.

Incs and Decs clear based on the LMP of the specified point.

UTCs clear based on the difference between LMPs at two specified points, representing the cost of transmission congestion

Is a UTC the same as a paired Inc and Dec?

NO.

- Incs and Decs represent energy costs in the form of LMP (energy + congestion + losses), while UTCs represent congestion costs in the form of the difference in price between the source and sink.
- While an inc and a dec could be paired together, there is no guarantee both would clear. A UTC always clears as a single transaction.
- A UTC is a transmission product, while an inc/dec is an energy product.

PJM Settlements

PJM Settlements bills each participant a Spot Market Energy Charge based on Net Interchange MWh and PJM System Energy LMP.

- › Increment offers and decrement bids are netted against each other.
- › For example: 100 MWh increment and 100 MWh decrement for same hour = 0 MWh Net Interchange, and does not receive an Energy Charge.
- › Up To *Congestion* transactions have no *energy* component, and therefore do not contribute to Net Interchange.
- › INC's and DEC's are charged a deviation rate for each MWh, which are not netted against each other.

PJM MANUALS

Manual 11, section 2.3.4 states: “The following business rules apply to Transmission Customers: In the Day-ahead Market, a transaction shall indicate willingness to pay congestion charges by submitting the transaction as an ‘up to’ congestion bid.”

Manual 11, Section 2.3.8: Modeling states “Fixed transactions, including increment offers and decrement bids, are modeled in the Resource Commitment. Up-to congestion transactions are not modeled in the commitment, but are handled in the day-ahead dispatch. PJM does not commit additional generation to support up-to congestion transactions.”

Manual 28, Section 8.2.2 states: “Explicit Transmission Congestion Charges are the congestion charges for moving energy across the Transmission System during a constraint. Explicit congestion charges equal the difference between the source and sink Congestion Prices of a transaction. ”

UTCs are billed under *Explicit Congestion Charges and Explicit Loss Charges* PJM Settlement reports.

Any Fee Must Be Supported By Cost Causation Principles and May Have Profound Market Effects

Hogan Study: cost causation principles are particularly important to Virtual Transactions since any fees can cause profound market effects.

The problem is especially important in dealing with transactions like FTRs, virtual trades, and UTC transactions, By design and construction, these financial contracts will be settled at prices determined in the spot market, but the observed quantity will always be zero in the real-time physical flows. The underlying economics of the financial contract are driven by the expected value of the real-time price that will apply to the financial settlement of the contract. By design, the deviation between day-ahead and real-time for the financial contract is the full quantity, and for a competitive bidder there is no connection between this deviation and the appropriate economic analysis of the bid. Hence, **allocating costs to these virtual contracts based on deviations does not have a foundation in the economics of a competitive bid and creates perverse incentives to avoid virtual transactions.** Any added charge to the virtual contract creates a wedge between the expected real-time price and the day-ahead price, reducing the incentive and the ability to promote convergence of the prices. **Uplift allocation to any virtual contracts has material consequences that work at cross purposes to good electricity market design.**

Electricity Market Design: Financial Transmission Rights, Up To Congestion Transactions and Multi-Settlement Systems, William W. Hogan July 16, 2012.

<http://www.whogan.com>

MISO Has Performed More Granular Cost Causation Studies

MISO looked at the elements contributing to its RSG Make-Whole Payment (MWP) and determined more granular contributions to the costs:

- These results indicate that levels of RSG contributed by various factors vary substantially.
- Load contributes approximately 23% of RSG MWP over the whole period.
- Generators contribute approximately 39% to RSG MWP over the whole period.
- Changes in NSI (net schedule interchange) contribute approximately 30% to RSG MWP over the entire period.
- **Virtual supply contributes approximately 1.3%.**
- Factors outside MP's control contribute the remainder.

From Econometric Analysis of RSG at the Midwest ISO, Presentation to the MISO RSG TF (July 8, 2009), available at <https://www.misoenergy.org/Library/Repository/Meeting%20Material/Stakeholder/RSGTF/2009/20090708/20090708%20RSGTF%20Item%2004%20DC%20Energy%20Economic%20Analysis%20of%20RSG.pdf>

The EMU Charter Requires Consideration of Cost Causation

Energy Market Uplift Senior Task Force Charter:

The Energy Market Uplift Senior Task Force stakeholder group will conduct the following key work activities and produce the stated deliverables as described in the Issue Charge: ...

4. Explore new methodologies for the allocation of make-whole payments that may include, but are not limited to, methodologies where Operating Reserve make-whole costs are netted with other out-of-market costs and payments (e.g. such as balancing congestion, Marginal Loss Surplus, etc.), **that are consistent with cost causation/benefit principles**
5. Explore and determine appropriate methodologies for the allocation of make-whole payments that may include, but are not limited to, methodologies that create variable and fixed charge rates, with the objective of minimizing the variability of such charges, **that are consistent with cost causation/benefit principles.**

Financial Marketers Coalition hereby requests that PJM perform a cost causation study which would determine the relative impacts of various transaction types on uplift.

We recognize that PJM has done some cost causation studies previously, but we request greater granularity.