

Q. Where can I find some historical PJM data on the amount of cleared virtual bids?

A. From the „Quarterly State of the Market Reports“, section of „Energy Market“, you should be able find the information. Examples shown below:

<http://www.pjm.com/documents/reports/state-of-market-reports/2009-state-of-market-report.aspx>

<http://www.pjm.com/documents/reports/state-of-market-reports/2010-state-of-market-report.aspx>

Q. Why was my unit picked up in day ahead when it didn't seem economical to do so?

A. This can be due to several reasons. The unit may have been “on the margin”, the decision to run a unit or not is based on the overall production cost of the entire system which can vary depending on all other system conditions. To elaborate further - In dayahead, a unit's LMP often can change depending on the constraints binding at the time. For instance, a unit that is currently generating, and is a hurt on a constraint sees a particular LMP. If this unit is then de-committed in our dayahead case, this LMP may rise significantly.

The decision to commit this unit or not in dayahead is based on the overall production cost of the entire system with or without this unit generating. It often can lead to units generating at LMPs below their bid and vice versa. Units with an LMP below their bid are made whole to their bid through operating reserves.

Q. When we submit load bids we are receiving an error similar to the following:

“Node 12345678 is invalid for Decrement bidding”

A. Virtual bidding is not permitted at interface points shown below:

CPLE IMP/EXP

DUKE IMP/EXP

NCMPA IMP/EXP

LMPs at these points are calculated via an alternative mechanism as stipulated by Section 2.6A of the PJM Tariff. They are determined after the economic dispatch is completed as they are a function of the highest and lowest price marginal generators included in the aggregate.

Q. What is the difference between the Daily LMP files and the Monthly files?

A. The difference is in granularity in terms of locational (nodal) prices. Daily LMP files reports LMP for every single node in PJM system (about 8000 nodes), while Monthly files have reported only prices for PJM RTO, (transmission) zones, aggregates, hubs etc (not as detailed as Daily files).

Q. I performed a virtual bid into a location that was in the money, and it didn't clear any megawatts – why?

A. You should first check to see if the location that you are bidding at has taken an outage. The eMKT system does not have an awareness of which locations are in an outage and therefore will allow bidding at those locations. However, day ahead will not clear anything at those locations. The line outage report can be found at the following:

<https://edart.pjm.com/reports/linesout.txt>

or

http://oasis.pjm.com/doc/linesout_new.txt

Q. What transmission elements make up an interface constraint?

A. <http://www.pjm.com/markets-and-operations/ptr/~media/markets-ops/ptr/network-model-monthly/pjm-interface-definitions-limits.ashx>

Q. The prices at a specific location seem very high the past couple of days. Any reason why we are suddenly seeing high prices at this location?

A. System conditions, outages, generation/load patterns, and bidding can change drastically from day-to-day and week-to-week. These changes can cause the price to change in different areas. You can look at oasis.pjm.com for transmission outage information and at the constraint postings on <http://www.pjm.com/markets-and-operations/energy/real-time.aspx> to determine the cause. We cannot elaborate further.

Q. When do the notification time and cold start times for a unit begin counting? Is it when a unit becomes "available", or when the DA schedule is first posted. For example, a unit comes off an outage at midnight, is picked up in day ahead, and has a 12-hour startup time (makes the math easy). Could it be called on as early as 4 AM (based on DA results posting at 4 PM), or at 12 PM (based on unit becoming "available" at 12 AM)?

A. The startup and notification times are added together to determine what time the unit can come on. And this time starts when the DA is posted at 4PM.

Q. Is there a cap for what I can bid into Day Ahead?

A. You can look at Section 2.3.2 and 2.3.3 of Manual 11 for demand, incs, decs and generation.

<http://www.pjm.com/~media/documents/manuals/m11.ashx>

- Price-sensitive demand bids, increment offers, and decrement bids must be consistent with the \$1000/MWh price cap.

- Generation offers may consist of startup, no-load, and incremental energy offer. A generation offer may not exceed \$1000/MWh.

Q. For an intermittent wind resource, I want to fully understand the potential operating reserves (day-ahead and balancing) for a unit that schedules on a day-ahead basis versus a unit that generates in the real-time without a day-ahead schedule. Is there a training manual or set of rules available to explain this?

A. Capacity resources are required to bid into the Day Ahead market, but they are allowed to self-schedule or Must-Run in the Day Ahead Market.

<http://www.pjm.com/training/~media/training/core-curriculum/v-wind-ops/wind-operations-dispatching-training-slides.ashx>

Q. I have been looking through the manuals and tariff but I have not found anything which clearly explains what bidding a unit in the day ahead as emergency technically means can you please shed some light on this?

A. The emergency option is supposed to be used in day ahead market when the unit is ONLY available for max emergency. The procedures for max emergency are outlined in Manual 11 on page 51.

Q. There is a financial impact to clearing in the day-ahead market but not scheduling in the real-time. Aside from this, is the real-time schedule a requirement?

A. A real-time schedule is not required.

Q. What happens in terms of schedule and meeting must-offer requirements if a price-based schedule from an external resource in MISO does not clear (MISO day-ahead market) as a MISO export from MISO but does clear as an import (PJM day-ahead market) to PJM?

A. A real-time schedule must accompany the PJM day-ahead import to avoid Operating Reserve deviation charges, regardless of how it cleared in MISO.

Q. What happens in terms of schedule and meeting must offer requirements if a price based schedule from an external resource in MISO clears (MISO day-ahead market) as a MISO export from MISO but does not clear (PJM day-ahead market) as an import to PJM?

A. PJM will not see this transaction at all.

Q. Does PJM publish a list of daily tradable pricing nodes (pnodes)?

A. The [LMP Bus Model](#) is one location. In eMkt there is also a Node List report on the Public page that lists the biddable zones, hubs, and interfaces.

The date is linked to the date on the Reports page, so if they want to see those biddable for a certain date, they have to put that date into that Reports tab.

Additionally, virtual Bids (Inc or Dec) can be made at any pricing location that PJM posts a price for (e.g. [Day-ahead LMP Data](#) and [Real-time LMP Data](#) postings), with the exception of the following locations:

- Only Incs are permitted at SOUTHIMP Interface
- Only Decs are permitted at SOUTHEXP Interface
- Neither Inc nor Dec are allowed at the following aggregate locations - VP KERR DAM 1-7, GORSUCH, SOUTHEAST, SOUTHWEST, RICHMOND, JOLIET 7, KENDALL 3 CC, KENDALL CT3, ELGIN EC3, ZION 1, and AURORA CT 1-4. Interfaces "SOUTHEAST, SOUTHWEST" are for FTR purpose only, while the others are generator aggregates. For the generator aggregates, users can bid on individual generators which can be found based on the [aggregates definition](#).
- Neither Inc or Dec are allowed at the following interface locations: CPLE IMP/EXP, DUKE IMP/EXP, nor NCMIPA IMP/EXP. Please see further above in this document for explanation.

Q. When a participant bids an Up-to Congestion path at a specific price, do the prices from the Up-to Congestion cleared transactions ever set the DA LMP Price at one or both of the nodes participating in the spread?

A. Yes, in the same way that when generation and load cross a price at a node is established in the DA, are the Up-to Congestion transactions evaluated in the DA model runs similarly to Load, Gen, Demand Response, Inc/Dec, etc.

Q. Pertaining to the Southeast and Southwest aggregates and how they are used as interface pricing points as related to Up-to Congestion transactions. Can Southwest and Southeast be used in Up-to transactions, even though they're classified as Aggregates and not Interfaces?

A. No

Q. Are we able to sell Up To Congestion transaction paths?

A. No – Up to paths are free.

Q. My question is around real time operating reserves.

Example... We plan to flow physical power from PJM to MISO. We create a decrement bid in the virtual market at the MISO interface. Our power flows real time. We should have no real time operating reserve on this flow. My question is around the use of the MISO interface pricing point. Can we create a decrement bid at a different point within PJM, and net it against our physical flow and have no operating reserve obligation?

A. Based on the new rule regarding balancing operation reserve charges, the decrement bid and real time export have to all target the same zone, hub or interface. In the scenario he described below, the decrement bid at a different point within PJM other than the MISO interface will violate this rule described above.

Details on this rule could be found from the below training materials, slide 68.

<http://pjm.com/markets-and-operations/energy/~media/markets-ops/energy/op-reserves/20081202-training-changes-to-operating-reserve-oct-2008-revised.ashx>

Q. We were informed that our unit would be cost capped. It was unclear which offer schedule was then used to dispatch the unit. Which offer schedule should be used in this case?

A. When members are informed that the unit is cost capped the unit should be run on its cheapest schedule. The actual schedule name that PJM has selected or determined that is the cheapest available schedule is located on the Dispatch Lambda page in Emkt.

Q. I have a few questions about binding constraints in PJM...in several constraints, I could not identify either the monitored or the contingent line. Is there a way that I can do that?

A. Please refer to the below equipment information page for details.

<http://www.pjm.com/markets-and-operations/etools/oasis/~media/etools/oasis/equip-info.ashx>

Q. I was wondering if you could give us advice regarding a question about the calculation of "UDS basepoint MWh" in PJM settlements. We have been trying to estimate this settlement value using data collected in real-time operation.

A. The UDS dispatch basepoint calculation is a time-weighted average based upon actual duration of the UDS dispatch time. As well as the Ramp Limited Desired(RPLD) MWs calculation.

Here's a quick example:

Unit initial output = 100 MW

Bid in ramp rate = 5 MW/min

UDS look ahead time = 15 mins

Base point sent = 130 MW

Looking at this info we can say that although the unit bid a ramp rate of 5 MW/min, PJM only asked it to ramp at 2 MW/min ($130 - 100 = 30$ MW, 30 MW / 15 min = 2 MW/min). At this point we know the ramp requested for a particular UDS case. The next piece of information we need is how long the UDS case actually lasted. In other words, how long did we ask for the 2 MW/min ramp before approving a new case. Let's say that this case lasted for 5 minutes before the next one was approved. Now that we know the duration of the case, we can calculate the RL Desired MW for this specific case as...

100 MW initial output + (2 MW/min ramp request * 5 mins) = 110 MW

So for this case 110 MW is the RL Desired MW. The UDS basepoint would just be the basepoint itself of 130 MW. In general, if the unit is between or within 10 % of these numbers, they're considered following dispatch.

To get this number for the whole hour, you'd have to do the same calculation for each UDS case in an hour and time weight the RL Desired and UDS basepoint numbers based on the duration of each case.

For more details of these calculations please reference this link below:

<http://www.pjm.com/sitecore/content/Globals/Training/Courses/ol-bor.aspx>

Q. Is there a reason that PJM would not commit a CT earlier in the day that a market seller has self committed (must run) in the day ahead market? For instance, if I self commit my unit for HE 15-17, PJM's day ahead market won't clear the unit in earlier hours, but has extended the unit's run later in the day.

A. Day Ahead market clears based on total bid production cost of the system. Startup costs, no-load costs, offer curves, and all other unit parameters are all considered, as well as transmission congestion and losses.