



Joint and Common Market Initiative
PJM Move to EST
April 10, 2006

The Proposal: To convert PJM systems to Eastern Standard Time (EST) to align with the Midwest ISO (MISO).

Reason for the change: Midwest ISO systems are currently on EST. PJM systems operate on Eastern Prevailing Time (EPT). The recommendation is to convert PJM systems to EST to align with the MISO system.

Background: Section 110 of the Energy Policy Act of 2005 (EPA 2005) alters the start and end dates for implementation of a Daylight Saving Time (DST) program. The new act does not alter the rights of states and territories to choose not to observe daylight saving time. However, if a state or territory chooses to observe, or continue to observe daylight saving time, the act states that it must be implemented uniformly. The act states that DST shall begin at 2:00 a.m. on the second Sunday in March and end at 2:00 a.m. on the first Sunday in November effective in the year 2007.

PJM systems including Markets and Operations have observed the seasonal changes from EST to DST in the spring and from DST to EST in the fall, since the Uniform Time Act of 1966. A change to any other time standard will require a significant work effort to accomplish since EPT is so ingrained in all computer systems and processes.

Benefits:

- Premise: Ongoing Information Technology Services (ITS) costs would be reduced due to simplification of system requirements between PJM and MISO (both RTO and Participants)
- Premise: Reduced confusion when scheduling and interacting in both RTOs
- Premise: Potential elimination of costly mistakes by participants if they misinterpret or incorrectly convert time from one RTO to the other.
- Premise: Increased efficiency between Market and System Operators.
- Increased efficiency for market participants dealing in both markets.

Drawbacks:

- Significant cost for PJM to convert all existing systems from using Eastern Prevailing time to Eastern Standard Time.
- Significant cost for the Transmission and Generation Owners to make requisite changes.
- The time to convert all PJM systems to EST is expected to exceed 11 months. PJM must therefore convert systems to EPA 2005 time standard by March 2007 before converting to EST.
- Time zone differences would be introduced into interactions with NYPP, ISO NE, and other Eastern Time Zone entities with which PJM routinely interacts.
- Historical systems (application code versions and data) would not be converted to EST thus introducing confusion when analyzing historical data.

Financial impact:

Assumptions:

- (1) A basic assumption for the financial analysis is that PJM must first convert its existing infrastructure to EPA 2005 before a conversion to EST could be performed. It is estimated that the effort to convert PJM systems to EST will take considerably longer than the time left until March 7, 2007.
- (2) Solving a problem on one border will create problems on other borders of PJM (NYISO, CPL, etc).
- (3) Use PJM Stage System for EST testing. No additional hardware is required.
- (4) There is no easy approach to combining DST and EST solutions into a single effort in order to reduce costs.

Data:

Category	Description	DST Cost	EST Cost
Contract Labor	Project and Admin support	\$221,000	\$441,000
PJM Labor	Development, testing, documentation, process change, migration through PJM systems.	\$661,000	\$1,198,980
Vendor Costs	Predicted to be less than \$100,000	\$100,000	\$100,000
Total Cost*		\$982,000	\$1,739,980

*The total cost for PJM to comply with EPA 2005 and then to convert to EST is the sum of \$982,000 + \$1,739,980, or \$2,721,980.

Analysis: The forecasted cost to convert to EST for those TO and GO systems that interact with PJM is unknown at this time. The incremental cost to convert PJM systems to EST is forecasted at about \$1.7 million, or 1.7 times the cost of the conversion to EPA 2005.

The cost for the Transmission and Generations Owners to modify their systems for conversion to EST is recognized as potentially being a multiple of the PJM cost, and is not included in this analysis.

Assessment: The cost – benefit does not justify the conversion.

Discussion:

PJM has observed the seasonal changes to and from Daylight Saving Time since the original DST legislation was enacted as part of the Uniform Time Act of 1966. PJM systems have been developed and enhanced over the years to include special processes to account for the two cross over hours in the spring and fall. PJM experiences very few problems as a result of the annual changes to DST. All issues are minor and are generally cleared up in a matter of a few hours.

There may well be some modest savings achieved with the Markets and other PJM systems that interact with MISO (refer to the MISO – PJM Filing

<http://www.pjm.com/documents/ferc/documents/2005/20051031-er04-375-017.pdf>), but systems that interact with other neighbors of PJM would likely require additional support as a result of differences in the time standard. Using a similar train of thought, the reduced uncertainty when scheduling and interacting between PJM and MISO would be more than offset by additional uncertainty encountered when interacting with other neighbors of PJM.

Discussions with company representatives serving on the System Operations Subcommittee (SOS), the System Information Subcommittee (SIS), and with the PJM Chief System Operator on behalf of the PJM Dispatchers indicated a strong desire to remain on EPT for the following reasons:

- The large cost for PJM to convert systems to EST versus the perceived limited reliability benefit attained.
- The potential large cost for the Transmission and Generation Owners to convert systems to EST that interact with PJM.
- As a result of automated systems and years of experience, PJM has had very few problems on the two cross over days.
- PJM would be resolving a problem on the MISO seam while creating a similar problem between PJM and its other neighbors who are currently in the same time zone.
- Difficulty communicating with operations people in the field. The issue of communications within PJM was highlighted as a significant concern by the SOS and the OC as it relates to outage and switching coordination, event response, and potentially safety concerns. This new issue would be at least as significant as the additional seam with RTO level neighbors, as noted in the bullet above.
- PJM has participants with only a reliability function and no market or scheduling function. Therefore, the significant cost that will most likely total some multiple of the PJM costs will have no offsetting benefit to these participants whatsoever.

Both the SOS and SIS voted to remain on EPT. The proposal has been discussed with the PJM Dispatchers and they foresee many communications issues with people in the field. The PJM Dispatchers have also expressed a strong desire to remain on EPT.

To date, the DST Team has not quantified the impact of participant's converting time from one RTO system to another. While conversion to EST could eliminate the possibility of confusion between PJM and MISO, the probability of a significant error would increase between PJM and its other neighbors as a result of the difference in DST time standard.

Conclusion: The DST Team has concluded that the proposed Joint and Common Market proposal to convert to EST year round would:

- Be costly for PJM and the Transmission Owners and Generation Owners to implement
- Provide some benefit to PJM in dealings with MISO although not enough to justify the significant expenditure to implement the change.
- Create many problems between PJM and its other neighbors, most of which are in the Eastern Time Zone and observe DST.
- Create communications issues internal to PJM.
- Ongoing ITS technology costs would increase overall.

Recommendation: The Daylight Saving Time Team at PJM recommends that PJM not convert to EST since the cost to convert is high and the perceived benefit is low. The System Operating Subcommittee, the System Information Subcommittee, and the PJM Dispatchers have all recommended that PJM remain on EPT because of communications issues that would arise as a result of a change to EST.

Appendix I

An EST work schedule reflecting PJM work only.

Task Name	2006				2007				2008		
	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3
Convert PJM Systems to EST											
Assign Team and Create Detailed Project Plan											
Identify policies, procedures, applications, and systems											
Determine effort and cost required to conform to the timing requirements in the federal legislation and the incremental effort required to change to EST											
Determine the effort required by stakeholders to modify their systems to accommodate a change											
Review results with Stakeholders and make Go / No-go decision											
Conversion of PJM systems to EST, assuming approval to proceed											