955 Jefferson Ave.
Valley Forge Corporate Center
Norristown, PA 19403-2497

Steven R. Pincus
Senior Counsel
Phone 610.666.4370 | Fax 610.666.8211

ORIGINAL

October 31, 2005

Honorable Magalie Roman Salas
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E. Room 1A
Washington, D.C. 20426

Re: Midwest Independent Transmission System Operator, Inc. and PJM Interconnection, L.L.C., Dockets No. ER04-375-017, ER04-375-018

Dear Ms. Salas:

This informational filing is made in response to the Commission's order of March 3, 2005[1] ("March 3 Order") requiring the Midwest Independent Transmission System Operator ("Midwest ISO") and PJM Interconnection, L.L.C. ("PJM") (collectively the "RTOs") to file "a concrete plan and timeline . . . that provides substantive detail and narrative . . . of the elements necessary to comprise a common market, the impediments they anticipate having to overcome and the necessary tasks they expect to accomplish in order to commence common market operations."[2] The March 3 Order also required this filing to contain, among other things, an evaluation of the "expected costs and benefits associated with achieving" each common market element.[3]

---

[1] *Midwest Independent Transmission System Operator, Inc. and PJM Interconnection, L.L.C.*, 110 FERC ¶ 61,226 (2005).

[2] March 3 Order, ordering ¶ (C). This filing is the result of a full stakeholder process conducted by the two RTOs which included 8 regional meetings, 5 joint RTO meetings, and a survey to market participants to define their desires and needs concerning the joint and common market. The results of that process informed the two RTOs and provided overall support for the proposals set forth herein.

[3] *Id.*, at P. 76; *See also*, P. 47.

This filing also meets the requirements that the RTOs file a combined report on the implementation of the Joint Operating Agreement ("JOA") executed by the Midwest ISO and PJM, and progress towards a joint and common market, in accordance with the Commission's March 18, 2004, August 5, 2004, and March 3, 2005 orders in Docket No. ER04-375[4] and July 31, 2002 order in Docket Nos. EL02-65, *et al.*[5] As PJM and Midwest ISO state in the informational progress report filed in Docket Nos. ER04-375-000 and EL02-65-000 on August 31, 2005, Phase 3 of the JOA, the Joint and Common Market, is the last remaining issue of substance. The RTOs, therefore, will cease reporting on the categories as listed in earlier reports, and instead focus on current issues and progress reports related to the joint and common market. Accordingly, this report will discuss those matters required in the Commission's July 31 Order and the March 3 Order relating to progress on the joint and common market, combined into a single report.

I. Background

In an October 28, 2004 order denying requests for rehearing of Commonwealth Edison Company's integration into PJM's Open Access Transmission Tariff ("PJM Tariff") and markets, the Commission directed PJM and the Midwest ISO, as part of their upcoming compliance filing for Phase 2 of the JOA, "to include a detailed timeline of the steps they will take to achieve the joint and common market and a date certain on which they expect the commencement of the joint and common market to occur." [6]

---

[4] *See Midwest Independent Transmission System Operator, Inc.*, 106 FERC ¶ 61,251 (2004) ("March 18 Order"), 108 FERC ¶ 61,143 at PP 58, 59 (2004) ("August 5 Order"), and *Midwest Independent Transmission System Operator. Inc.*.110 FERC ¶ 61,226 at PP 75 (2005) ("March 3 Order").
[5] *See Southern Illinois Power Cooperative, et al.* 100 FERC ¶ 61,137 (2002) ("July 31 Order").
[6] *PJM Interconnection, L.L.C.*, 109 FERC ¶61,094, P.16 (2004).

In their December 30, 2004 filing in Docket Nos. ER04-375-000, et al. (the "Phase 2 Filing"), the Midwest ISO and PJM included an extensive discussion of the process and timeline to move beyond market-to-market coordination, towards the development of a joint and common market.

In the March 3 Order, the Commission agreed that future market development would benefit from allowing the RTOs to focus for several months on the market-to-market coordination protocols of Phase 2 of the JOA following implementation of the Midwest ISO energy market. Looking beyond that stabilization period, the Commission directed the Midwest ISO and PJM to initiate a specific market development stakeholder process based on a schedule, to be set forth in the next 60-day update report (subsequently filed May 2, 2005) that, "barring significant unforeseen events, facilitates the filing on October 31, 2005 of a more specific plan for continuing development of a joint and common market" ("October 31 Filing").[7]

Pursuant to the March 3 Order, the Midwest ISO and PJM convened a stakeholder process. The process focused first on defining the objectives of the joint and common market and next on identifying the prospective initiatives to achieve those objectives. Finally, the stakeholder process assessed each initiative by determining the cost to implement versus the benefit to be achieved from the initiative.

As discussed in the following sections of this filing, the concept of the joint and common market preceded the aggregation of 27 control areas into the Midwest ISO energy market, and the integration of an additional six large control areas into the existing PJM energy market. Through necessity, the world's two largest electricity markets have developed industry best practices that support their ability to operate their

[7] March 3 Order, at PP 74-75.

markets in an integrated fashion. The PJM-Midwest ISO JOA established the framework for managing congestion seamlessly between the two markets (and with neighboring non-market systems), exchanging critical operating data, coordinating outages and reactive power requirements, performing market-to-market redispatch, and responding to emergency conditions in a coordinated manner.

Significant benefits have been realized through the coordinated market operations of Midwest ISO and PJM. The Midwest ISO market was formed from 27 separate control areas with a total peak load of 112,000 MWs, using a security-constrained economic system dispatch and coordinated market settlements. Concurrently, PJM integrated six large companies into its energy market that now encompasses a 135,000 MW peak load region. Quantification studies are underway in each RTO to measure the substantial benefits resulting from the larger coordinated operations under each of the single markets. Importantly, price convergence at the borders between the two regions demonstrates that the markets work effectively together and that the coordinated operations largely achieve the objectives and benefits of a single market.

The next stage of the joint and common market, identified through the recent stakeholder process, consists of the various elements discussed in Section V of this filing. When implemented, these changes will meet the Commission's objective to minimize the impact of the operating seam between the two RTOs.

II. Defining the Joint and Common Market

The Commission has used the term "joint and common market" interchangeably with other terms such as "seamless trading area";[8] "single common market";[9] "functional

[8] *Illinois Power Company, et al.*, 95 FERC ¶ 61,183 (2001) ("May 8 Order").

common market";[10] and "common market".[11] The Commission appears to view the joint and common market as the means to achieve the goals, objectives and characteristics identified in Order 2000.[12] During the joint RTO stakeholder process which started in June 2005, most participants defined the term with reference to objectives, or improvements that could be cost effectively achieved in the operation of the contiguous markets.

The discussion of a joint and common market as a solution to seams issues began in the *Illinois Power Company* proceeding to determine whether Commonwealth Edison, Ameren, and Illinois Power Company could terminate their membership in Midwest ISO to join the Alliance RTO. In the May 8 Order the Commission approved a settlement between Midwest ISO and the Alliance RTO that rested on a commitment to de-pancake transmission rates between the two regions, and on the implementation of the Inter RTO Coordination Agreement (IRCA). The IRCA proposed to deal with various seams issues raised by intervenors in the *Illinois Power* docket by providing "One Stop Shopping" for transmission customers desiring to transmit across more than one RTO (Article X), and through the adoption of compatible business practices to facilitate "seamless markets." (Article XI).

Although the specific elements of a seamless market were not listed in the May 8 Order, that order did shed some light on the extent of market integration the Commission

---

[9] *Alliance Companies,* 100 FERC ¶ 61,137 (2002), *order on clarification,* 102 FERC ¶ 61,214, *order on rehearing and providing clarification,* 103 FERC ¶ 61,274, *order denying rehearing and granting clarification,* 105 FERC ¶ 61,215 (2003), *appeal docketed sub nom. American Electric Power Service Corp. v. FERC,* No. 03-1223 (D.C. Cir. Aug 1, 2003) ("July 31 Order" or "Alliance Companies Order").
[10] July 31 Order at P. 40; March 3 Order at P. 64.
[11] *Alliance Companies, order on rehearing and providing clarification,* 103 FERC ¶ 61,274 (June 4, 2003).
[12] July 31 Order at P. 38.

believed necessary to adequately address the anticipated seam between Midwest ISO and the Alliance RTO:

> Furthermore, the Commission will not require the development of joint energy imbalance and congestion management mechanisms at this time. While joint arrangements would appear desirable in the long run, we have no basis to find, at this time, that multiple, truly compatible energy imbalance and congestion management mechanisms are not consistent with Order No. 2000.[13]

The Commission also noted that it had said in Order 2000 that "an 'RTO may satisfy some of the minimum characteristics and functions ... through a strong cooperative agreement with neighboring RTOs to create a 'seamless trading area'."[14] Indeed, the Commission observed in the March 3 Order that "RTOs (do not) need to use identical software or a single dispatch system."[15]

In its subsequent December 20, 2001 order rejecting the Alliance RTO,[16] the Commission allowed the transmission owners to choose which RTO they would join. In the July 31 Order, the Commission concluded that a common market across the Midwest ISO and PJM would minimize seams issues created by the companies' choices and allow parties to manage seams issues more efficiently. As a condition of accepting those RTO choices, the Commission required Midwest ISO and PJM to form a "functional common market" across their combined regions by October 1, 2004.[17]

In a subsequent June 4, 2003 order on rehearing (June 4 Order), in which the new PJM companies challenged the necessity of the "functional common market" the

---

[13] May 8 Order, PP. 25 (emphasis added).
[14] *Id., citing Regional Organizations*, Order 2000, 65 *Fed. Reg.* 809 (January 6, 2000), FERC Stats. & Regs. P31,089 (1999), order on reh'g, Order 2000-A, 65 *Fed. Reg.*12,088 (March 8, 2000), FERC Stats. & Regs. P31,092 (2000), petitions for review pending sub nom., Public Utility District No. 1 of Snohomish County, Washington v. FERC, Nos. 00-1174, et al. (D.C.Cir).
[15] March 3 order at P. 48.
[16] *Alliance Companies* 97 FERC ¶ 61,327 (2001).
[17] July 31 Order at P. 40.

Commission explained that without this condition, the new seam created scope and configuration problems:

> Order No. 2000 specifically requires . . . that an RTO be of adequate scope and configuration to perform its functions effectively. It also sets out factors that the Commission would consider in determining whether a proposed RTO reflects adequate scope and configuration. These factors include, among others, the ability to: (1) resolve loop flow issues by internalizing loop flows and addressing loop flow problems over a larger region; (2) effectively manage transmission congestion; (3) offer transmission service at non-pancaked rates within the largest possible energy trading area; (4) maintain and enhance reliability; and (5) promote overall operational efficiency.[18]

The two RTOs responded to the July 31 Order in an August 15 filing accepting this condition by stating certain assumptions that supported the start of such a market by the 2004 deadline. Because the start of the Midwest ISO's energy market was postponed until 2005 the necessary predicate for a joint and common market, i.e., two LMP based markets, did not exist in time to meet the 2004 deadline.

In addressing the joint filing made by the Midwest ISO and PJM on December 30, 2004 (the "December 30 Filing"), the Commission noted: "Assuming that Midwest ISO's energy market starts March 1, 2005, the RTOs project that a functional common market would start September 1, 2007."[19] The Commission then went on to state that the "December 30 Filing provides a general explanation of the process and timeline that the RTOs intend to use to move beyond market-to-market coordination and toward the joint and common market referenced by the JOA and prior Commission orders."[20] The Commission, therefore, appears to use the terms "functional common market" and "joint and common market" interchangeably.

---

[18] *Alliance Companies, et al., Order on rehearing and providing clarification*, 103 FERC ¶ 61,274 (2003), P. 24.
[19] March 3 Order at P. 64.
[20] March 3 Order at P. 73.

Although there was no detailed discussion of the elements that comprise a "functional common market" in the July 31 Order, the Commission had issued its SMD NOPR[21] the same day providing several clues as to what might be expected.

In its Preamble discussing the need for a standard market design, the Commission noted the reliability and financial problems created by operating seams--between control areas and between RTOs:

> Seams issues include differences in transmission rules as well as differences in power market rules. They include such diverse matters as different operating rules (e.g., rules for recalling firm transmission capacity; coordination of generation and transmission maintenance schedules; how parallel path flows are determined to affect other regions); different market rules (e.g., bidding rules; market product definitions); different market designs (e.g., congestion management procedures; demand response rules; market price intervention practices); different business practices (e.g., scheduling practices; reservation practices; OASIS designs; processes to verify transactions between ISOs and market participants; transmission and generation outage information dissemination, compensation, and coordination rules; generation interconnection practices; liability provisions); and different electronic and telephonic communications protocols.
>
> SMD NOPR, Preamble, P. 81.[22]

By the following April, with the issuance of its Wholesale Power Market Platform White Paper ("White Paper") the Commission appeared to acknowledge that elimination of seams issues did not require identical market rules, observing: "Varying approaches to FTR allocation need not create "seams" with neighboring regions" according to the White

---

[21] *Remedying Undue Discrimination through Open Access Transmission Service and Standard Electricity Market Design, Notice of Proposed Rulemaking*, 67 Fed. Reg. 55, 452 (Aug. 29, 2002), FERC Stats. & Regs., ¶ 32, 563 (2002) ("SMD NOPR").

[22] *See* also, SMD NOPR, Appendix C, for additional discussion of seams problems, including different ramp rates in the Northeast, and market mitigation during the California energy crisis.

Paper; and "Regions may differ on the extent to which they want to rely on participant funded expansions; this difference need not create "seams" with neighboring regions."[23]

The Commission also acknowledged that some flexibility was appropriate in deciding whether ISOs had sufficient scope and configuration given that "RTOs and ISOs are developing methods of interregional coordination that allow separate control, but a single market from the customer's perspective."[24] On the subject of multiple markets, the Commission clarified that "[t]he RTO or ISO in each region will develop the detailed market rules that will be included in its Commission-filed tariff. An RTO or ISO must also introduce a day-ahead market and a market for various ancillary services when the market is ready for those steps."[25]

When the Commission recently terminated the SMD docket, it concluded: "that the SMD NOPR has been overtaken by events."[26] Similarly, the RTOs believe that the need for a single market between them to address seams issues and Order 2000 scope and configuration requirements has been overtaken by the benefits already achieved through interregional coordination in their individual markets.

III. Joint and Common Market Objectives and Elements Achieved Through Phase 1 and 2 of the JOA.

At the time of the July 31 Order, significant problems presented themselves with the creation of the seam separating AEP and Commonwealth Edison from the rest of the Midwest ISO.

---

[23] White Paper, pages 5-6.
[24] *Id.* at page 7.
[25] *Id.* at page 9.

[26] Order Terminating Proceeding, 112 FERC ¶ 61, 073, (2005) P. 7.

With regard to operating reliability across the seam, Midwest ISO and PJM developed a groundbreaking method to deal with the market to non-market relationship that existed before the recent start-up of the Midwest ISO markets. Approved by NERC, the Congestion Management Process ("CMP") required market-based operating entities to report their market flows to the IDC[27] so that when TLRs were issued, both market entities and non-market entities would assist in reducing the congestion. It also initiated a method to manage loops flows by allocating capacity on critical flowgates to each RTO based on historic flows. This was the first time that any RTO had successfully managed parallel path flows through regional coordination as required by Order No. 2000. 18 CFR § 35.34 (k)(3).

The congestion management obligations of the CMP were incorporated into the JOA, which also obligates the RTOs to exchange critical operating and planning data, to coordinate outages and voltage problems, improve communications, perform market-to-market redispatch and establish emergency procedures.

The JOA between the Midwest ISO and PJM implemented many initiatives that are essential elements of the joint and common market. The significant improvements in coordination achieved by the JOA include:

Phase 1 Market to Non-Market (Reliability Coordination):

(a) Congestion Management Process - The market to non-market congestion management process was successfully implemented on May 1, 2004, concurrently with the integration of ComEd into the PJM market. This process enhanced the existing IDC TLR process by coordinating transmission

[27] The IDC is the NERC Interchange Distribution Calculator used to determine the reduction in transmission transactions necessary to relieve transmission congestion.

service on flowgates as well as coordinating market flow on flowgates to manage congestion in real time.

(b) Exchange and Integration of EMS Models - Midwest ISO and PJM have enhanced and integrated their modeling capabilities by exchanging, and incorporating details from, each other's EMS models.

(c) Improved Coordination of SCADA Data - The RTOs established a redundant network until NERCnet could be redundant to share real-time data. The number of data points being exchanged between the Midwest ISO and PJM was also increased significantly.

(d) Outage Coordination - The RTOs established policies and procedures to improve coordination of planned and unplanned generation and transmission outages.

(e) Enhanced Emergency Operating Procedures between Midwest ISO and PJM - Midwest ISO and PJM have implemented closer coordination of real-time operational procedures.

(f) Improved Scheduling Checkout Procedures - The RTOs eliminated a major seams issue by coordinating the processes to approve transmission schedules and perform checkouts for transactions across their mutual border.

(g) Improved/Enhanced/Standardized Data Exchange - Since the implementation of Phase 1 of the JOA, the RTOs have continually improved, enhanced, and standardized the exchange of critical operating and planning data in the following categories:

i. Unit Commitment/Merit Order
ii. Models (EMS and Planning Models)

iii. Outages (Planned and Unplanned)
iv. Congestion Management Data (Allocations, Flowgates, Designated Network Resources, Load Forecast, Allocation Sharing, Jointly Owned Units)
v. AFC/ATC data
vi. Transmission Reservations
vii. SCADA Data

(h) Joint Transmission Expansion Planning – The JOA contains the framework for joint RTO coordinated regional transmission expansion planning including an obligation to assign costs for Network Upgrades identified in the Coordinated System Plan on an equitable basis. The JOA also includes a methodology and process for allocating to the customers in each RTO the costs of new transmission facilities that are built in one RTO but provide benefits to customers in the other RTO.

(i) Established Standard Protocols for Other Seams Agreements - Since the Commission's approval of the JOA, Midwest ISO and PJM have met with other regional entities that share a common seam with one or both of the RTOs. The result has been to develop a common agreement on the need to exchange critical operating data, and on the use of the CMP as a superior method of addressing transmission congestion between reliability regions. Signatories to such agreements include Southwest Power Pool ("SPP"), Tennessee Valley Authority ("TVA"), Progress Energy Carolinas and the Mid-Continent Area Power Pool ("MAPP") (through its contractor, MAPPCOR).

Phase 2 Market to Market

Phase 2 of the JOA continued the reliability aspects of Phase 1, but added a new facet to regional coordination by introducing the opportunity for one market-based RTO to request redispatch from the other market-based RTO when that option proved more economic than redispatching internally to solve a transmission constraint. Since the beginning of the Midwest ISO market in April 2005, this market-to-market coordination has satisfied many of the objectives which, in 2002, were identified as elements of a joint and common market.

Under the market-to-market rules, the RTOs coordinate pricing at their borders. Each RTO's market software calculates LMPs for its interface with the other RTO, in the form of a "proxy bus" that serves as a composite of its neighbor's physical load and generation busses near the border. Under the RTOs' market-to-market coordination, PJM and Midwest ISO interface prices converged and are tracking very closely to each other as demonstrated in Appendix 1. This information demonstrates that on average PJM and Midwest ISO interface prices are tracking very close to each other and correlation of interface prices has been increasing month to month (*See* spread sheet summary of the correlation data for the PJM and the Midwest ISO proxy buses attached hereto as Appendix 2). The convergence of prices at the border demonstrates that the PJM and Midwest ISO market rules are sufficiently compatible (*i.e.* common) and that trading across the border between the two markets can be accomplished efficiently. It can therefore be reasonably concluded that the two markets are operating in such close coordination that the vast majority of the benefits of implementing a single market over the combined area have already been achieved.

Under Phase 2 of the JOA, the allocation and auction of Financial Transmission Rights in both Midwest ISO and PJM have been enhanced to respect transmission limitations on each other's systems. In addition, PJM modified its annual FTR auction process in 2005 such that Firm Point-to-Point transmission service customers may have access to an allocation of stage 1 Auction Revenue Rights in a parallel fashion to the access that Network customers have from the resources that historically served load in their transmission zone. The RTOs have also developed procedures by which unused flowgate capability may be transferred between the RTOs in the operation of their day-ahead markets such that the combined system is more effectively utilized, and they have extended these agreements to the other members of the Congestion Management Council (TVA, SPP, and MAPP). Midwest ISO and PJM have significantly increased the data exchanged in both real time for transmission constraint control and after-the-fact to support Market to Market settlement for coordinated flowgates, including:

- Real time constraint shadow prices;
- Real time constraint market flows;
- Hourly integrated constraint shadow prices;
- Hourly integrated constraint market flows; and
- Hourly integrated firm flow entitlements.

Through implementation of the JOA, the associated procedures were included in the reliability coordination plans for both the PJM and the Midwest ISO. These plans were approved by the NERC.

Phase 1, Market to Non-Market, and Phase 2, Market to Market, implementation of the JOA has been accomplished at a total cost of approximately $28 million between the two RTOs. While the benefits of Phase 1 were primarily reliability-related, Phase 2 has yielded considerable benefits from the standpoint of increasing the efficiency with

which the combined market region operates. PJM and Midwest ISO have estimated the total, annualized benefits of the enhanced coordination made possible by Phase 2 to be $50.5 million dollars. These benefits have accrued due to the following impacts resulting from coordinated market operations over the combined area:

- Increased market efficiency as evidenced by reduced price separation between the PJM and Midwest ISO market areas;
- Avoided redispatch cost to PJM as a result of Midwest ISO redispatching for PJM constraints under Market to Market coordination; and
- Avoided redispatch cost to Midwest ISO as a result of PJM redispatching for Midwest ISO constraints under Market to Market coordination.

The increase in market efficiency resulting from Market to Market coordination was calculated by examining price differentials at representative locations and interchange transaction volumes between PJM and Midwest ISO before and after Phase 2 of the JOA was implemented. For the time period prior to Phase 2 implementation, the Cinergy Hub and the PJM Western Hub were utilized, and the price separation at these locations was compared to the price separation at the PJM and Midwest ISO interfaces following Phase 2 implementation. The hourly change in price separation between the two regions for the two time periods was then multiplied times the increase in hourly transaction volume between the two regions in order to determine the increase in market efficiency. The total annual efficiency gain calculated was $1.8 million.

The avoided redispatch cost to both RTOs was determined by calculating what redispatch for coordinated flowgates would have cost each RTO had the other RTO not reduced the flow on the flowgate during times when Market to Market coordination was activated. In each instance, the MWh for which the monitoring RTO compensated the non-monitoring RTO was multiplied times the estimated shadow price that the monitoring RTO would have experienced had it been required to redispatch unilaterally

to control flow on the coordinated flowgate. The sum of the hourly results represents the total avoided redispatch cost for the period. The annual avoided redispatch cost for PJM and Midwest ISO was calculated to be $48.7 million.

IV. The Stakeholder Process Leading to This Filing

In their Phase 2 Filing, the RTOs presented their initial views of the elements of a joint and common market. Following the stakeholder process conducted during this past summer, the RTOs believe that the elements of a common market presented in the Phase 2 Filing are, with the additions noted below, consistent with the needs of market participants and their willingness to bear the costs. To comply with the March 3 Order, PJM and the Midwest ISO sponsored an initial joint stakeholder meeting on June 2, 2005 in Wilmington, Delaware. Subsequent stakeholder meetings were held at the following times and locations:

June 30, 2005	Carmel, Indiana
July 27, 2005	Wilmington, Delaware
August 25, 2005	Carmel, Indiana
September 21, 2005	Wilmington, Delaware

In addition, stakeholders of each RTO had the opportunity to provide input into the development of today's filing at the following committee meetings:

September 14, 2005	PJM Electricity Markets Committee
September 27, 2005	PJM Market Implementation Committee
September 29, 2005	PJM Members Committee
October 17, 2005	Midwest ISO Market Subcommittee
October 18, 2005	Midwest ISO Transmission Owners
October 19, 2005	Midwest ISO Advisory Committee
October 20, 2005	Midwest ISO Board of Directors
October 26, 2005	PJM Electricity Markets Committee

The RTOs employed an open and inclusive stakeholder process. Participants in the meetings initiated discussion of the objectives to be achieved by further market

coordination. The discussion of areas for further coordination included issues previously identified by stakeholders and highlighted in the March 3 Order and all other ideas proposed by the stakeholders. The objectives to be achieved in a joint and common market were identified, and it was agreed that all proposed initiatives would be evaluated for cost effectiveness in achieving those objectives. Thus, the early stakeholder meetings were primarily focused on identifying potential elements of the joint and common market while later meetings focused on reviewing the costs and benefits of those proposals.

The RTOs relied on stakeholder input to help identify what might make the markets work better together, and to help the RTOs quantify the benefits of particular proposals for greater coordination. In addition to the stakeholder meetings, in July 2005, a survey was conducted to permit others not actively participating to suggest initiatives and assist the RTOs in gauging the depth of commitment to various elements of the Joint and Common Market, and the perceived value of those elements to the survey respondents. Once the overall objectives and participant-desired changes were identified, and the benefits of those changes quantified (to the degree possible), the RTOs determined the costs of implementing those objectives. (*See* section VI below for an explanation of the cost/benefit methodology).

The RTOs investigated and more fully developed proposals made during the joint stakeholder meetings and the costs associated with those proposals. The RTOs and their consultants also investigated, further developed, and quantified the stakeholder-identified benefits of potential coordination mechanisms, and advanced the process of approximating the costs (both to the RTOs and market participants) to implement such mechanisms. Prior to the September joint stakeholder meeting, the RTO staffs

distributed analyses regarding the details of the identified proposals, including analyses, to the extent completed, of their benefits and costs. The RTOs provided that work product and held discussions at later meetings of their individual stakeholder groups. The material provided to the stakeholders was generally cumulative, and detail requested by stakeholders was added for each meeting. The RTOs continuously encouraged participants to provide additional input both during and between meetings, and the analysis provided reflected this input.

The survey was aimed at market participants and it provided the RTOs with key findings concerning the respondents' views and priorities regarding the objectives and initiatives associated with the joint and common market and the various options and proposals discussed as additional elements of the joint and common market.

Respondents indicated that through the joint and common market initiative they will derive the intangible benefits of (i) market opportunities; (ii) operational consistency; and (iii) increased market efficiency. Respondents indicated that they expected little or no value to be derived from a reduction of their tangible costs (*i.e.* respondents do not believe they will be able to reduce information technology infrastructure costs, etc. based on the development of a PJM/Midwest ISO joint and common market). Seventy-four percent (74%) of respondents indicated that expenditures on the joint and common market effort should be less than $10 million. Moreover, the survey indicated respondents supported pursuit of only those initiatives that have a demonstrated net benefit. In discussions held with an independent consultant that PJM and Midwest ISO retained in order to assist with the cost/benefit calculations, however, some respondents

indicated they might support higher spending levels if the benefits could be clearly demonstrated.

PJM and Midwest ISO used the input from its stakeholders received during the joint stakeholder meetings and derived from the survey results to identify the additional elements of the joint and common market that the RTOs should pursue based on the objectives to be achieved and the cost and benefits of the options available to achieve those objectives. The two large and successful markets, coordinated by the JOA including the market-to-market coordination already implemented by the RTOs, combined with the additional elements that will be implemented, obviate the need for a single market operating under a single unit commitment and dispatch. The cost of this solution, for now, cannot be justified by the marginal benefits it would produce above those already achieved with Phase 2 of the JOA and the initiatives that the RTOs will pursue going forward.

V. Additional Elements of the Joint and Common Market

In the March 3 Order, the Commission directed the RTOs to file a concrete plan to identify and provide narrative descriptions of each specific element of a joint and common market, the tasks necessary for them to complete the elements, impediments to overcome, and the resulting changes necessary to their tariffs, rules and procedures. The narrative descriptions are to include for each element: (i) a specific timeline for accomplishing the tasks and (ii) an evaluation of the expected costs and benefits associated with each element.[28]

[28] *See* March 3 Order at P. 76.

As discussed above, PJM and Midwest ISO used the input from its stakeholders to identify the additional elements of the joint and common market that the RTOs can pursue as determined by the common market objectives as well as the cost and benefits of options available to achieve those objectives. A wide range of options was considered in the process and the decisions to implement certain initiatives and not implement others were based on an assessment of a cost/benefit analysis and full stakeholder discussions. This decision making process identified several initiatives that, inclusive of the previous market decisions and implementations, will achieve the overarching objectives of the joint and common market. These objectives are as follows:

- Provide the highest level of inter-regional reliability.
- Deliver the lowest cost energy and ancillary services to load across the combined regions.
- Plan, build and operate the combined Midwest ISO and PJM transmission facilities for maximum joint benefit across the region.

Adding to the elements of a joint and common market that have already been achieved through the success of the JOA and the market-to-market coordination already implemented by the RTOs will initiate the processes and take the steps necessary to implement the additional elements of a joint and common market identified and discussed below in the timeline identified for each initiative ("Committed Initiatives"). In addition, the RTOs will discuss certain initiatives that require further cost/benefit studies, investigation, or overcoming of obstacles that prevent the RTOs from committing at this time to a definitive implementation plan and schedule. For these initiatives, the RTOs will present their findings to stakeholders for discussions at a later date ("Further Action

Needed Initiatives").[29] Finally, certain initiatives did not receive stakeholder support and/or cannot be justified under current conditions and will not be pursued at the present time ("No Action Initiatives").

Attachment A to this filing is a matrix that identifies for each initiative considered by the RTOs and their stakeholders, the RTOs designation as either (i) a Committed Initiative (referred to as a "Green" initiative in the stakeholder presentations); (ii) a Further Action Needed Initiative (referred to as a "Yellow" initiative in the stakeholder presentations); or (iii) a No Action Initiative (referred to as a "Red" initiative in the stakeholder presentations).[30] This matrix also shows the overall implementation costs and the net 3 year benefits, if applicable.

A. Committed Initiatives

In this filing, the Midwest ISO and PJM commit to pursue the steps necessary to implement the following additional joint and common market element initiatives:

1. Alignment of FTR Timelines and Products.

(a) Narrative Description:

In order to achieve FTR market convergence between PJM and the Midwest ISO, the RTOs propose to align their FTR timelines and products. In order to accomplish this initiative the Midwest ISO plans to align its FTR products with PJM's FTR products and its FTR allocation and auction timeframes with PJM's FTR allocation and auction timeframes.

(b) Tasks/Timeline:

See Attachment B-1a.

[29] The initiatives may also require RTO board level approval and/or FERC approval.

[30] The original color matrix used in the stakeholder process has been converted into a readable grayscale document for this filing.

(c) Impediments to Overcome:

The current PJM and Midwest ISO FTR processes are significantly different. In order to implement this initiative, the Midwest ISO must review the proposed changes to the Midwest ISO policies, procedures, applications and systems with its stakeholders and obtain stakeholder agreement on such changes. Following Midwest ISO stakeholder approval, Commission approval of the Midwest ISO changes to FTR timelines and products will be required.

(d) Resulting Changes to Tariffs, Rules, Systems and Procedures:

Module C of the Midwest ISO Open Access Transmission and Energy Markets Tariff ("Midwest ISO Tariff"), Sections 42 through 46, will be modified to implement the FTR changes.

(e) Evaluation of Cost/Benefits:

The information provided in Attachment B-1b demonstrate that the overall $600,000 cost of implementing this initiative (all Midwest ISO costs) is significantly outweighed by the annual net benefits which reflect market efficiency gains and participant staff and training time savings. Moreover, the alignment of the Midwest ISO and PJM FTR timelines and products will provide value for market participants through greater certainty with regard to hedging congestion costs when transferring energy between the PJM and Midwest ISO markets.

2. PJM Move to Marginal Losses.

(a) Narrative Description:

Midwest ISO presently includes the impact of marginal losses in its dispatch of energy and Locational Marginal Price calculations while PJM does not. This distinction

has the potential to increase the level of price separation at the RTOs' borders. PJM has already begun discussions through its stakeholder process regarding the implementation of Marginal Losses, and that implementation has the potential to further reduce this component of price divergence.

(b) Tasks/Timeline:

See Attachment B-2a.

(c) Impediments to Overcome:

As stated above, the current methodologies to account for transmission losses used by PJM and Midwest ISO differ and PJM must obtain stakeholder approval of the proposal by PJM to move to a system to account for marginal losses in the dispatch of energy and the calculation of Locational Marginal Prices. According to the most recent schedule, PJM stakeholders will vote on whether to implement Marginal Losses at the PJM Markets Implementation Committee ("MIC") on November 10, 2005. A second vote on this subject will occur at the PJM Electricity Markets Committee ("EMC") on January 10, 2006. If implementation of Marginal Losses is approved by these two committees, then it is likely to occur during the first half of 2007. In the meantime, the PJM stakeholders would develop the required PJM Tariff and the Amended and Restated Operating Agreement of PJM ("PJM Operating Agreement") language to support the actual implementation. The most significant issue that must be resolved through the PJM stakeholder process is that of allocating the over-collection that would result from implementation of Marginal Losses. Although the PJM Tariff provides for this implementation when the necessary software and hardware is available, the over-

collection allocation must be designed and the necessary Tariff revisions filed prior to that implementation occurring.

Following PJM's stakeholder approval, Commission approval of the PJM Tariff and PJM Operating Agreement changes will be necessary.

(d) Resulting Changes to Tariffs, Rules, Systems and Procedures:

Section 3.2.5 to Attachment K of PJM's Tariff and Section 3.2.5 to Schedule 1 of PJM's Operating Agreement will need to be revised to provide for the process and procedures to account for Marginal losses in PJM's dispatch of energy and the calculation of Locational Marginal Price.

(e) Evaluation of Cost/Benefits:

A cost benefit analysis was not performed for this initiative because PJM has already begun taking steps to implement this initiative. The benefit of this initiative is that it will eliminate a potential price discrepancy at the border between PJM and the Midwest ISO.

3. Alignment of Operating Reserves/Revenue Sufficiency Guarantee Products.

(a) Narrative Description:

In order to reduce the hurdle rates for through-and-out point-to-point transactions between PJM and Midwest ISO, this initiative will align PJM's Operating Reserves and Midwest ISO's Revenue Sufficiency Guarantee products so that charges are allocated similarly. Both Midwest ISO and PJM provide payments to generators that are committed/scheduled by the RTO in the Day Ahead and Real Time Markets when necessary to cover as-offered costs. There are differences, however, in allocation details between PJM and Midwest ISO in two major areas. First, PJM allocates Balancing

Operating Reserve charges across an entire 24-hour periods while Midwest ISO allocates its similar charges on an hourly basis. Second, PJM nets deviations from individual transactions to determine deviations from Day Ahead schedules while Midwest ISO calculates deviations based on each individual schedule change.

Because hourly allocations increase Revenue Sufficiency Guarantee volatility and lack of netting increases the cost of scheduling transactions in Real Time, the Midwest ISO will propose to its stakeholders the changes that better align these allocation rules.

(b) Tasks/Timeline:

See Attachment B-3a.

(c) Impediments to Overcome:

As stated above, in order to implement this initiative the Midwest ISO must review the proposed changes to the Midwest ISO policies, procedures, applications and systems with its stakeholders and obtain stakeholder agreement on such changes. Following Midwest ISO stakeholder approval, Commission approval of the Midwest ISO changes will be required. Another obstacle is the difficulty in quantifying the benefits of reduced hurdle rates and the correlation to RTO border prices.

(d) Resulting Changes to Tariffs, Rules, Systems and Procedures:

Module C of the Midwest ISO Tariff will be modified to implement the RSG changes.

(e) Evaluation of Cost/Benefits:

Reconciliation of the differences between PJM's Operating Reserves and the Midwest ISO's Revenue Sufficiency Guarantee products will reduce transaction hurdle rates and increase market participants' ability to schedule between Midwest ISO and

PJM. The information provided in Attachment B-3b demonstrates that the overall $600,000 cost of implementing this initiative (all Midwest ISO costs) is significantly outweighed by the annual net benefits which reflect market efficiency gains.

4. Common Search Capabilities.

(a) Narrative Description:

This is the first of three initiatives that fall under the broader category of Broader Price Transparency and Common Reporting. This initiative will implement one search engine that searches both the PJM and Midwest ISO's public websites.

(b) Tasks/Timeline:

See Attachment B-4a.

(c) Impediments to Overcome:

There are no significant obstacles to overcome in order to implement this initiative.

(d) Resulting Changes to Tariffs, Rules, Systems and Procedures:

At this time the RTOs do not anticipate any changes to their respective Tariffs. PJM and the Midwest ISO shall implement a common search engine that is accessible from either of their existing websites. This search engine will scan the contents of both existing websites and return results of queries as if only one site was in existence.

(e) Evaluation of Cost/Benefits:

The information provided in Attachment B-4b demonstrates that the overall $200,000 cost of implementing this initiative plus annual maintenance expense of $50,000 (total cost over three years of $350,000) is outweighed by the three year estimated accrued benefits of $1,125,000 which reflect participant staff and training time

savings. Moreover, there is the somewhat intangible value achieved through this initiative of increasing coordination and collaboration between the RTOs.

5. Link Existing eData/PTP Sites.

(a) Narrative Description:

This is the second of three initiatives that fall under the broader category of Broader Price Transparency and Common Reporting. This initiative will link the existing PJM eData and Midwest ISO Price Transparency Portal (PTP) sites together allowing for the exchange of data between the two sites (*e.g.* LMP, Instantaneous Load, Tie Flows, etc.) and make it available for display and download.

(b) Tasks/Timeline:

See Attachment B-5a.

(c) Impediments to Overcome:

The RTOs will need to identify differences in the synchronization of data delivery timeframes and in the way data is calculated and used and work around those differences. Stakeholder approvals will be required to implement this initiative.

(d) Resulting Changes to Tariffs, Rules, Systems and Procedures:

At this time the RTOs do not anticipate any changes to their respective Tariffs. PJM shall modify its exiting eData application to accept and display Midwest ISO:

- LMPs
- Instantaneous Load
- Tie Flows.

The Midwest ISO shall modify its PTP to accept and display PJM:

- LMPs
- Instantaneous Load
- Tie Flows

(e) Evaluation of Cost/Benefits:

The information provided in Attachment B-5b demonstrates that the overall $500,000 cost of implementing this initiative plus annual maintenance expense of $100,000 (total cost over three years of $800,000) is outweighed by the three year total estimated accrued benefits of $1,952,165 which reflect participant staff and training time savings and market efficiency gains.

6. Joint Website.

(a) Narrative Description:

Under this third Broader Price Transparency and Common Reporting initiative, the Midwest ISO and PJM will create one new joint website that hosts PJM and Midwest ISO' common information (*e.g.* joint meetings, event calendars, joint documents and reports, etc.).

(b) Tasks/Timeline:

See Attachment B-6a.

(c) Impediments to Overcome:

There are no significant obstacles to overcome in order to implement this initiative. PJM and Midwest ISO, however, must develop a process to maintain the joint website in order to keep it current and determine what information must be included, changed, added or deleted and by whom.

(d) Resulting Changes to Tariffs, Rules, Systems and Procedures:

At this time the RTOs do not anticipate any changes to their respective Tariffs. PJM and the Midwest ISO shall modify the existing joint website by implementing:

- A Joint meetings notifications capability
- A joint events calendar capability

- A more robust joint document storage, retrieval, and retention capability
- A more robust joint reporting capability

(e) Evaluation of Cost/Benefits:

The information provided in Attachment B-6b demonstrates that the overall $600,000 cost of implementing this initiative plus annual maintenance expense of $100,000 (total cost over three years of $900,000) is outweighed by the three year total estimated accrued benefits of $1,125,000 which reflect participant staff and training time savings.

7. Moving Joint-Owned Units ("JOUs") Between Markets.

(a) Narrative Description:

The RTOs will develop a joint approach using best practices to provide market participants who own joint-owned units (JOUs are generation assets jointly owned by PJM and Midwest ISO market participants) with the ability to sell their share of generation into the Day-Ahead and Real-Time market in either the market where the JOU owner is a market participant or the market where the JOU physically exists.

(b) Tasks/Timeline:

See Attachment B-7a.

(c) Impediments to Overcome:

There are no significant obstacles to overcome in order to implement this initiative. There may be issues that need to be resolved to provide the ultimate flexibility that this initiative is designed to address and which stakeholders have requested.

(d) Resulting Changes to Tariffs, Rules, Systems and Procedures:

At this time the RTOs do not anticipate any changes to their respective Tariffs. Both Midwest ISO and PJM will need to make other changes based on the analysis of treatment of these units. These include changes to procedures, manuals, and systems to

accommodate the modifications found in the analysis and include items such as accommodating treatment of JOUs in the calculation of ramp, reserves, etc.

(e) Evaluation of Cost/Benefits:

The information provided in Attachment B-7b shows the overall $100,000 cost of implementing this initiative. This initiative was introduced by the stakeholders. Aligning the treatment of JOUs between RTOs makes sense regardless of the JCM stakeholder process and the costs are not significant. The ability of market participants to choose into which markets the output of their units is sold and take advantage of any price differentials that may exist at these units' buses will benefit both the participants and the markets as a whole.[31]

8. Common Long-Term Transmission Queue.

(a) Narrative Description:

This is the first of six initiatives which will be pursued by the RTO that fall under the broader category of Operational Consistency. Under this initiative, Midwest ISO and PJM will create a common long-term transmission service queue. This initiative will only impact annual cross-border firm transmission service requests. Through this initiative, the Midwest ISO and PJM will eliminate the potential for customers obtaining long-term "uscless" partial path service reservations through a joint study of matched partial paths and will provide a single response to cross-border long-term transmission service requests. These studies will be performed either by Midwest ISO or PJM and will evaluate the request on behalf of both transmission providers. The customer will be given the flexibility

[31] As the prices at the RTOs' borders converge, this value to the market participants and the market will decrease.

of selecting a joint study for a cross-border request or have two separate studies as is done today.

(b) Tasks/Timeline:

See Attachment B-8a.

(c) Impediments to Overcome:

It will be necessary to determine differences in existing PJM and Midwest ISO processes and define a common long-term transmission queue process. PJM and the Midwest ISO will need to obtain agreement among their respective stakeholders if there are changes to the long-term transmission queue process. Regulatory approvals will also be required to implement this initiative.

(d) Resulting Changes to Tariffs, Rules, Systems and Procedures:

The PJM Tariff and the Midwest ISO Tariff may need modifications to allow either RTO to take action on a request for service based on evaluation made by the other RTO. Business practice documentation, including the PJM Manual for Transmission Service (M-2), the PJM Regional practices, and Midwest ISO Tariff Business Practices, Module B, would be updated to describe (a) the process by which transmission customers could elect a joint study and (b) the revised process for the study of long-term service. No system modifications are anticipated.

(e) Evaluation of Cost/Benefits:

The information provided in Attachment B-8b demonstrates that the overall $200,000 cost of implementing this initiative is significantly outweighed by the annual net benefits which reflect both market efficiency gains and participant staff and training time savings. This initiative will eliminate the cost of performing two separate request

evaluations. This initiative will also eliminate uncertainty for cross-border transmission service customers and the overhead cost associated with maintaining two applications (customers must learn and train on two systems and enter two reservations for on-path requests). Therefore, there is additional value received in the elimination of this uncertainty.

9. Midwest ISO Ramp Viewer.

(a) Narrative Description:

This is the second Operational Consistency initiative. Midwest ISO has already initiated a project to give its market participants the ability to reserve ramp and view available ramp in the Midwest ISO Region which will give participants the ability to reserve ramp prior to purchasing transmission and arranging energy deals and to view information on changes in net interchange needed to make economic decisions.

(b) Tasks/Timeline:

See Attachment B-9a.

(c) Impediments to Overcome:

There are no significant obstacles to overcome in order to implement this initiative.

(d) Resulting Changes to Tariffs, Rules, Systems and Procedures:

There are no tariff changes or procedures that require modification. The Midwest ISO system providing the viewer will be modified as described.

(e) Evaluation of Cost/Benefits:

The information provided in Attachment B-9b demonstrates that the overall $150,000 cost of implementing this initiative plus annual maintenance expense of $10,000 (total cost over three years of $180,000) is outweighed by the annual net benefits which

reflect both market efficiency gains and participant staff and training time savings. As stated above, this is an ongoing Midwest ISO project which will be completed in the second quarter of 2006.

10. Central Location to View Both Ramp Viewers.

(a) Narrative Description:

For this third Operational Consistency initiative Midwest ISO and PJM will develop a central location where both the Midwest ISO and PJM ramp reservations and viewers can be accessed.

(b) Tasks/Timeline:

See Attachment B-10a.

(c) Impediments to Overcome:

There are no significant obstacles to overcome in order to implement this initiative; however, there may be security issues associated with posting dynamic information to a common website. PJM and Midwest ISO's security teams will need to develop a strategy to address this concern.

(d) Resulting Changes to Tariffs, Rules, Systems and Procedures:

Midwest ISO and PJM will need to make system changes to display both RTOs' ramp data in a common area. The system changes will create a common data area and establish data interfaces to keep the ramp data current. Midwest ISO and PJM will also coordinate to bring the RTOs' business rules in alignment and make the appropriate manual changes. No changes to the PJM Tariff or Midwest ISO Tariff are envisioned.

(e) Evaluation of Cost/Benefits:

The information provided in Attachment B-10b demonstrates that the overall $100,000 cost of implementing this initiative plus annual maintenance expense of $10,000 (total cost over three years of $130,000) is significantly outweighed by the annual net benefits which reflect participant staff and training time savings. Moreover, market efficiency gains include the avoidance by market participants of the need to navigate back and forth between multiple websites to view both RTOs' ramp information needed to make economic decisions.

11. Common Ramp Portal.

(a) Narrative Description:

The fourth Operational Consistency initiative will take the above initiative a step further. The Midwest ISO and PJM will develop a common portal to allow market participants to view and reserve ramp in both RTOs simultaneously.

(b) Tasks/Timeline:

See Attachment B-11a.

(c) Impediments to Overcome:

Obstacles that must be overcome include additional security concerns with transferring information from a central location. PJM and Midwest ISO's security teams will need to develop a strategy to address this concern. Also, the RTOs' stakeholders will need to approve the development of this moderately expensive tool.

(d) Resulting Changes to Tariffs, Rules, Systems and Procedures:

The Midwest ISO and PJM will need to make significant system changes to allow for the reserving of ramp in both RTOs from the same interface. The system

changes will enhance the common ramp viewer and establish data interfaces to keep the ramp data current. Midwest ISO and PJM will need to make the appropriate manual changes to reflect the updated procedures for market participants. No additional changes to either of the RTOs' tariffs are envisioned.

(e) Evaluation of Cost/Benefits:

The information provided in Attachment B-11b demonstrates that the overall $750,000 cost of implementing this initiative plus annual maintenance of $50,000 (total cost over three years of $900,00) is outweighed by the three year net benefits which reflect participant staff and training time savings and market efficiency gains.

12. Alignment of OASIS Business Practices.

(a) Narrative Description:

This project (the fifth of six Operational Consistency initiatives which the RTOs will initiate) would align the timing requirements associated with transmission service requests on each node. By aligning the timing requirements associated with submitting transmission service requests this will accommodate the near simultaneous submission of cross-border transmission requests on both the Midwest ISO and PJM OASIS. The common long-term transmission service queue initiative aligns the timing requirements for long-term firm requests. This initiative aligns the timing requirements for other transmission service requests. This project will require identification of the policies, procedures and terminology which comprise the Midwest ISO's and PJM's OASIS business practices and, to the extent possible, aligns such policies, procedure and business practices.

(b) Tasks/Timeline:

See Attachment B-12a.

(c) Impediments to Overcome:

It will be necessary to obtain the RTOs' stakeholders' approvals and file for Commission approval of necessary PJM and Midwest ISO tariff revisions. Moreover, it will be necessary to modify applications and systems to implement this initiative.

(d) Resulting Changes to Tariffs, Rules, Systems and Procedures:

PJM and Midwest ISO will seek stakeholder consensus on best practices. Section 1.6, "Table Summary: Transmission Service Submittals," of the PJM Regional Practices (posted at http://oasis.pjm.com/rpdoc.html) and Appendix A of the Midwest ISO Tariff Business Practices, Module B of the EMT must be updated to reflect the revised timing requirements for the submittal of transmission service requests. The Midwest ISO and PJM manuals may also require updates. Tariff changes are anticipated for both RTOs.

(e) Evaluation of Cost/Benefits:

The information provided in Attachment B-12b demonstrates that the overall $500,000 cost of implementing this initiative is outweighed by the three year net benefits which reflect participant staff and training time savings and market efficiency gains.

13. Common Treatment of Dynamic Schedules/Pseudo-ties.

(a) Narrative Description:

The sixth Operational Consistency initiative will provide market participants with flexibility to allow their existing dynamically scheduled generating units to participate in their current market configuration and to align the treatment of these entities identically in each region.

(b) Tasks/Timeline:

See Attachment B-13a.

(c) Impediments to Overcome:

There are no significant obstacles to overcome in order to implement this initiative; however, it will be necessary to determine the efforts required by stakeholders to modify their systems to accommodate the changes to PJM and Midwest ISO's procedures, applications and systems which are related to dynamic schedules.

(d) Resulting Changes to Tariffs, Rules, Systems and Procedures:

The Midwest ISO and PJM will need to make business rule and procedural changes to accommodate a common treatment of Dynamic Schedules/Pseudo-ties and make the appropriate manual changes to reflect the updated procedures for market participants. Midwest ISO and PJM will also need to make some minor system changes to accommodate this treatment in ramp, interchange, etc. No additional changes to the RTOs' tariffs are anticipated.

(e) Evaluation of Cost/Benefits:

The information provided in Attachment B-13b demonstrates that the overall $200,000 cost of implementing this initiative is outweighed by the three year net benefits which reflect participant staff and training time savings and market efficiency gains.

14. Emergency Energy Agreement.

(a) Narrative Description:

Under this Reliability Initiative, the Midwest ISO and PJM need to replace existing emergency energy agreements between former control area operators of PJM and Midwest ISO with an emergency energy agreement between the RTOs. These agreements were in

place to facilitate the sale of energy during emergency conditions. While these agreements existed prior to RTO development, PJM and Midwest ISO may not be legal parties to them. The new emergency energy agreements will be closely aligned with existing PJM agreements and with former control area to control area agreements.

(b) Tasks/Timeline:

See Attachment B-14a.

(c) Impediments to Overcome:

Legal, regulatory and corporate structure issues associated with replacing the prior emergency energy agreements with new RTO agreements may be an obstacle to complete these agreements in the short term. There will be regulatory and stakeholder approvals required.

(d) Resulting Changes to Tariffs, Rules, Systems and Procedures:

Section 40.2.17.f of the Midwest ISO Tariff provides a mechanism to purchase emergency energy from PJM and other neighboring control areas, but the ability to implement a direct sale of emergency energy is unclear. Midwest ISO will file new tariff language in Module C to provide for the sale of emergency energy from market resources to neighboring control areas and RTOs. Section 3.2.6 of the PJM Tariff provides a mechanism to sell and purchase emergency energy to/from other neighboring control areas. PJM and Midwest ISO will need to execute and file an agreement to provide for the sale of emergency energy from market resources to / from PJM and Midwest ISO.

(e) Evaluation of Cost/Benefits:

The cost benefit analysis for this initiative assumes that the net benefits are seen primarily through increased system reliability. Moreover, the implementation of emergency

energy agreements between PJM and Midwest ISO was underway prior to the recent efforts to quantify JCM benefits. Therefore no specific benefits were identified for this filing. The overall cost of implementing this initiative is $100,000.

15. Black Start and Restoration.

(a) Narrative Description:

Under this Reliability Initiative, the Midwest ISO is developing a cost-based structure very similar to the current PJM cost-based black start procurement process included in Schedule 6A of the PJM Tariff. Future coordination could potentially include joint restoration system plans leading to joint evaluation of critical black start resources.

(b) Tasks/Timeline:

See Attachment B-15a.

(c) Impediments to Overcome:

Impediments to overcome for this initiative include stakeholder approvals and regulatory filings associated with tariff changes. An obstacle to this initiative is the potentially low number of actual units which may reasonably qualify for black start in both PJM and Midwest ISO. The RTOs will need to determine the actual number of units which reasonably qualify for black start in both regions.

(d) Resulting Changes to Tariffs, Rules, Systems and Procedures:

A new tariff Schedule will be proposed for the Midwest ISO Tariff to compensate generators for Black Start services. The PJM Tariff will need to be changed to reflect black start units identified in both RTOs. These changes would reflect black start compensation, etc. In addition, the Midwest ISO and PJM systems will need to

change to reflect this coordination as well as make the appropriate manual changes to reflect the updated procedures for market participants.

(e) Evaluation of Cost/Benefits:

The information provided in Attachment B-15b demonstrates that the overall $500,000 cost of implementing this initiative plus on-going annual operating costs of $100,000 (total cost over three years of $800,00) is outweighed by the three year net benefits. There is also intangible befits of increased system reliability which adds to the overall net benefits.

16. Joint Expansion Planning and Common Deliverability Studies.

(a) Narrative Description:

This initiative consists of: (i) the joint expansion planning process through which the RTOs will develop the Coordinated System Plan (CSP) as provided for in the JOA to evaluate impacts on the other RTO's facilities and require facilities upgrades; and (ii) the use of common generation deliverability studies which will include common criteria and study to obtain results which demonstrate if units are deliverable in both RTOs and if they are not deliverable in both RTOs what system constraints limit the deliverability.

(b) Tasks/Timeline:

See Attachment B-16a.

(c) Impediments to Overcome:

In addition to the challenges in establishing joint expansion plan study criteria and coordination, there will be regulatory and stakeholder approvals required to implement the common deliverability studies.

(d) Resulting Changes to Tariffs, Rules, Systems and Procedures:

The Midwest ISO and PJM have made previous filings with the Commission to reflect the Joint Expansion Planning. On May 17, 2005, in compliance with the Commission's November 18, 2004 Order in separate but related proceedings,[32] the PJM and the Midwest ISO filed with the Commission revisions to the JOA, the Midwest ISO Tariff, the PJM Tariff and the PJM Operating Agreement. These revisions complied with the Commission's directive to file a proposal for allocating to the customers in each RTO the cost of new transmission facilities that are built in one RTO but provide benefits to customers in the other RTO.[33] Midwest ISO and PJM will need to make business rule and procedural changes as well as make appropriate manual changes to reflect the updated planning coordination. No additional tariff or procedural changes are required to implement the development of the CSP.

The common deliverability studies to be completed in 2006 will be for informational purposes. If Midwest ISO and PJM decide to implement a common deliverability process, modification would be required of the Midwest ISO (Attachment X), the PJM Tariff and the PJM Operating Agreement, as well as internal Midwest ISO and PJM deliverability study procedures.

(e) Evaluation of Cost/Benefits:

The overall cost for implementing the Joint Expansion Planning initiative is $20,000 plus ongoing annual costs equal to $100,000 (total cost over three years of $320,000) for queue and study coordination between PJM and Midwest ISO. The overall cost for implementing the Common Deliverability Study initiative is $100,000 plus

[32] Midwest Independent Transmission System Operator, Inc., et al., 109 FERC ¶ 61,168 (2004) ("November 18 Order").
[33] November 18 Order at P 60.

ongoing annual costs equal to $50,000 (total cost over three years of $250,000) for study coordination between PJM and Midwest ISO. The cost benefit analysis for this initiative assumes that the net benefits are seen primarily through increased system reliability. There is potential for market efficiency gains but they can not be quantified until the first joint expansion plan is completed.

B. Further Action Needed Initiatives

In addition to the above Committed Initiatives, the following, while under consideration for possible implementation, require further cost/benefit studies, investigation, or overcoming of obstacles that prevent the RTOs from committing at this time to a definitive implementation plan and schedule. Each of these initiatives will be reported back to the stakeholders for implementation decisions on the specified timeline:

1. Cross Border FTRs in the Allocations.

As a potential additional step to converge the PJM and Midwest ISO FTR markets, the Midwest ISO and PJM are studying an initiative to align the processes by which FTRs/ARRs are allocated in the two markets. This initiative is dependent on the implementation of the initiative to align PJM and Midwest ISO FTR timelines and products (*See* section V.A.1. above). Attachment C-1, identifies the activities and the timelines for completion of those activities before this proposed initiative is reported back to the stakeholders for implementation decisions.

2. Alternative Border Pricing Point Calculations.

PJM and the Midwest ISO are evaluating the suggestion to add additional pricing point options for transactions between PJM and the Midwest ISO by allowing market participants to submit transactions based on physical flow effects on localized

transactions. Stakeholders believe that this would provide greater flexibility and a greater opportunity to trade between PJM and Midwest ISO than only one proxy for each RTO.

PJM and Midwest ISO are concerned that this proposal may create gaming opportunities because of the difficulty (if not impossibility) in verifying that the physical MWs associated with a particular transaction are actually source/sinking in the physical location represented by more specific pricing points. An alternative still under consideration would be to weigh the individual nodes that are combined to constitute the single interface pricing point currently used by each RTO (*i.e.* real time weighting of proxy bus components). Such an approach, would provide a better indication of the impact of transmission constraints on trade between the two RTOs, and achieve the greatest level of price transparency between PJM and Midwest ISO as well as the greatest level of price transparency possible with regard to trade between the regions. Attachment C-2 identifies the activities and the timelines for completion of those activities before this proposed initiative is reported back to the stakeholders for implementation decisions.

3. Shared Regulation Market.

PJM and the Midwest ISO recognize that this proposal would create a larger area over which a market is operated and thus, a more efficient market. The implementation of a shared Regulation Market between PJM and the Midwest ISO would require real time, two-second exchange of energy between the two regions. Before this initiative can be evaluated and implemented, however, it is necessary for control area consolidation and reserve market issues in the Midwest ISO to be resolved. Attachment C-3 identifies the activities and the timelines for completion of those activities before this proposed initiative is reported back to the stakeholders for implementation decisions.

4. Common Time Zones (Modify PJM Systems to Eastern Standard Time).

This proposal would move PJM's systems to Eastern Standard Time ("EST") to align with the Midwest ISO. PJM and Midwest ISO recognize that such a change would reduce ongoing IT costs (for both RTOs and market participants), reduce confusion when scheduling and interacting with both RTOs, and increase efficiency between market and system operators. Attachment C-4 identifies the activities and the timelines for completion of those activities before this proposed initiative is reported back to the stakeholders for implementation decisions.

5. Coordinated OASIS.

This proposal would link the PJM OASIS and the Midwest ISO OASIS nodes so there is single logon to both nodes simultaneously thus allowing a single request to be submitted. Midwest ISO and PJM recognize that there are efficiencies created by this recommendation in that market participants would not need to learn two separate nodes and it would allow transmission service requests to be submitted once. There are, however, significant obstacles which require further evaluation. The obstacles include the limitation of OASIS Standards and Communications Protocol ("S&CP") (standard) templates. This will limit the functionality of the approach. Also, the benefits of this initiative will not allow requests to be linked for evaluation purposes.

This initiative was introduced after a cost/benefit analysis moved the Single OASIS initiative to a No Action category. The late introduction of this option did not permit time for the completion of a strong cost/benefit analysis or sufficient stakeholder input. Further investigation is required. In addition, the initiative to align OASIS business practices (*See* section V.A.12. above) may result in enough significant benefits

which may negate the value of this initiative. Attachment C-5, identifies the activities and the timelines for completion of those activities before this proposed initiative is reported back to the stakeholders for implementation decisions.

C. **No Action Initiatives**

As stated above, the RTOs and their stakeholders evaluated certain No Action Initiatives. Those initiatives do not have stakeholder support and/or cannot be justified under current conditions. In fact, certain of these initiatives, such as a single market encompassing an area with a peak load of over 247,000 MWs, may not be technologically feasible at this time. As a result, these initiatives are not recommended for further consideration at this time. The No Action Initiatives are as follows:

1. Cross Border FTR Auctions.

This proposal would implement a process to either include cross-border FTRs in the individual Midwest ISO and PJM FTR auctions or create a singe FTR auction that spans the two RTOs. This initiative is not recommended for further consideration at this time because the addition of cross-border FTR products in the auctions may not be technically feasible at this time due to the size of the combined model, the complexity of the optimization required, and current models are at technological limits.

2. Depancaking of Point-to-Point Ancillary Services.

This proposal would eliminate pancaked rates for scheduling and other ancillary services (*i. e.* scheduling, system control and dispatch, black start, and reactive power and voltage control) for through-and-out point-to-point transactions between the Midwest ISO and PJM. The Commission directed PJM and the Midwest ISO to address the

elimination of rate pancaking for scheduling and other ancillary services.[34] The RTOs initially complied with this directive in the Phase 2 filing completed on December 30, 2004. In that filing, PJM and Midwest ISO said that the RTOs planned on initiating a stakeholder process in 2005 to resolve this issue.

In 2005 the RTOs initiated the Stakeholder process to address the issue of depancaking ancillary service rates. PJM presented this issue to the PJM Transmission Owners Administrative Committee on September 15, 2005. The Midwest ISO initiated its stakeholder review of this issue in meetings with its Markets Subcommittee, its Transmission Owners Committee and its Advisory Committee. While this issue is still undecided by the PJM stakeholders, the Midwest ISO stakeholders did not indicate support for this proposal. Therefore, this initiative will not be pursued at this time.

3. Standard Data Exchange (Web Services).

Under this proposed Broader Price Transparency and Common Reporting initiative, the Midwest ISO and PJM would develop a standard architecture (*e.g.* Broker engine) and mechanism for exchanging data between Midwest ISO and PJM and make it available to participants (this would apply to new exchanges of data only). This initiative is not recommended for further consideration at this time because, as shown in Attachment D-1, the costs of this initiative (total cost over three years equals $3,600,000) significantly outweigh the benefits.

4. Single Midwest ISO and PJM Website.

This is a proposal to develop and implement a single joint Midwest ISO/PJM website and eliminate the existing PJM and Midwest ISO websites. This initiative is not

[34] *See Midwest Independent Transmission System Operator, Inc.*, 109 FERC ¶ 61,168 (2004) ("November 18 Order")

recommended for further consideration at this time because a joint PJM/Midwest ISO website has already been created and is being used for joint activities. The existing PJM and Midwest ISO websites already provide sufficient information for the stakeholders and they are being aligned through a number of other joint and common market initiatives described herein. Market participants have already invested in the acquisition and development of customized software needed to use the individual RTO websites and they would incur additional costs to re-write their customized software to utilize a joint PJM/Midwest ISO website. Thus, stakeholder investment in a single comprehensive website is not justified at the present time.

5. Standard Data, Visualization and Reporting Portal.

This proposal would implement a single redundant data and report portal and supporting architecture that have backup capability shared between PJM and the Midwest ISO. This initiative is not recommended for further consideration at this time because, as shown in Attachment D-2, the costs of this initiative (total cost over three years equals $10,000,000) significantly outweigh the benefits.

6. Single Resource Adequacy Solution.

There are differences between the resource adequacy constructs of the two RTOs. PJM presently operates a capacity market for the PJM Region and Midwest ISO is still discussing the potential implementation of a resource adequacy construct for the Midwest ISO Region.[35] Differences between the adopted resource adequacy constructs of the two RTOs, however, would have only limited implications (*e.g.* operations during scarcity conditions, reserve sharing, etc.). Moreover, PJM and Midwest ISO are confident that

[35] PJM has proposed the Reliability Pricing Model as its future resource adequacy construct. (*See* FERC Docket Nos. ER05-1410-000 and EL05-148-000)

they can effectively manage these differences and implications. Nevertheless, because resource adequacy is still an issue in both PJM and Midwest ISO and resolution in the individual RTOs is still far from being achieved, the adoption of a common construct cannot be pursued at the present time.

7. Reserve Sharing.

This proposal would provide for the consistent treatment and administration of reserve sharing agreements that cross RTO borders. This initiative is not recommended for further consideration at this time because there is uncertainty as to how the Large Regional Reliability Organization, ReliabilityFirst Corporation, will implement reserve sharing agreements. Moreover, while some reserve sharing agreements exist currently, PJM and the Midwest ISO do not have the authority under their respective tariffs to globally implement reserve sharing agreements on behalf of their members.

8. Single OASIS.

For cross-border transmission service requests between Midwest ISO and PJM, the current practice is to have the customer submit separate requests on Midwest ISO and PJM OASIS and then have separate reviews performed on whether the service can be granted. Efficiency gains could be achieved in both the entry process and the evaluation process if there were a single request entry process for cross-border requests and if there were a single evaluation of the complete path. This proposal would implement a single OASIS user interface that appears to the customer as if they are making a single OASIS request and they are receiving a single evaluation. In reality, the interface would send transmission requests to the two separate OASIS nodes and receive results back from two separate evaluations. This initiative is not recommended for further consideration at this

time because, as shown in Attachment D-3, the costs of this initiative (total cost over three years equals $9,500,000) significantly outweigh the benefits.

9. Market Portal/Single Market Implementation.

To the extent possible provide a single data entry point and results distribution capability for the Midwest ISO and PJM market and ancillary service application systems to emulate "one-stop-shopping" for the Day-Ahead Market, Real-Time Market and Ancillary Services Markets. This proposal is envisioned as a Year 1-Rule Alignment and Market Portal Design initiative, Year 2-Initial Market Portal Implementation initiative and a Years 3-5 Implementation of Single Market initiative. In Year 1 this initiative would entail rule alignment and market portal design. In Year 2, the RTOs would implement a common market portal. Finally, in Years 3-5, the RTOs would focus on the construction, testing and implementation of applications and systems associated with the management of a single market.

As mentioned above, the cost of implementing these three interrelated initiatives is not justified by the incremental benefits that a single market would create. The enormous cost to implement these initiatives would total approximately $105,000,000, plus ongoing operating costs of $7,000,000. Attachment D-4 demonstrates that the incremental benefits of a single market are overwhelmingly outweighed by these costs. Also, the technological feasibility of implementing the entire package of applications to support a 247,000 MW market is unproven.

VI. Cost/Benefit Methodology

As stated above, once the overall objectives of the joint and common market were determined and participant-desired changes were identified, the benefits of those changes

were quantified (to the degree possible) and the costs calculated. The RTOs hired a consultant to perform the cost/benefit analysis for the joint and common market initiatives. This consultant performed the cost/benefit methodology for the Midwest ISO and PJM which is described in detail below.

In order to avoid overstating benefits in this study, a conservative yet reasonable approach was designed to examine two types of economic benefit associated with each initiative: (i) Market efficiency gains representing the overall market savings (estimated reduction in production cost using a proxy) associated with the implementation of each initiative, and (ii) Market participant savings representing estimated cost savings to market participant organizations associated with the implementation of each initiative. Market participant cost savings were split between reductions in staff time required to perform specific tasks and reductions in training costs associated with learning to use multiple processes, procedures and technologies.

Market participant cost savings are an estimate of the direct costs that can be saved or avoided by the market participants as a result of a particular joint and common market initiative. During the stakeholder process, Midwest ISO and PJM implemented an electronic survey that allowed respondents to rank the value and importance of each initiative to their interests. These surveys provided feedback regarding the perceived benefits and types of initiatives considered important by respondents. The results provided insight into initiatives respondents felt would create cost savings opportunities or market efficiencies. The surveys were followed by phone interviews with representative respondents to validate assumptions regarding the potential magnitude of savings associated with specific initiatives. The phone interviews validated that certain

initiatives would provide benefits, but no concrete estimates of these benefits were provided by any market participant. The data collected was used as a basis to estimate the staff time-savings and training savings.

Within the context of this analysis, market efficiency gains represent the estimated production cost savings associated with enabling more efficient trade across the interfaces between PJM and the Midwest ISO. The market efficiency gain estimates were not calculated through a detailed production cost modeling analysis but were estimated based upon increased Midwest ISO/PJM transaction volume assumptions and actual hourly differences between the PJM proxy bus price utilized for pricing transactions to Midwest ISO and the Midwest ISO proxy bus price utilized for pricing transactions to PJM. Since increasing transaction volume across the Midwest ISO/PJM border has a direct impact on actual production cost for the combined market footprint, this calculation methodology provides a proxy for the expected reduction in production cost as both PJM and Midwest ISO energy markets approach a pseudo single market operation (i.e. the proxy bus prices at the border converge) through the result of increased transaction volumes.

The market efficiency gain benefits analysis for each joint and common market initiative was performed in two steps. In the first step, the analysis focused on developing an estimated market efficiency gain for the combined market footprint assuming a pseudo single market operation. The second step reviewed the relative impact each joint and common market initiative would have on improving the efficiency of transactions moving across the inter-RTO border and assigned a relative benefit to

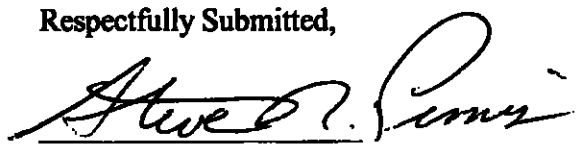
each based on an assigned weighting factor with the single market initiative capturing 100% of the estimated market efficiency gain.

The participant staff/training savings and market efficiency gains benefits calculations and the results of those calculations are attached hereto as Appendix 3.

VII. Conclusion

The information contained in this filing provides the Commission with a plan, timeline, and substantive details of the elements (both achieved and proposed) which comprise a joint and common market. This information includes the expected costs and benefits associated with achieving each market element. The RTOs have also identified the impediments they anticipate having to overcome and the necessary tasks they expect to accomplish in order to achieve each of the additional joint and common market initiatives. The RTOs describe the extensive stakeholder input and participation in the development of this plan. Thus, this filing contains all the information which the Commission directed the RTOs to provide in the March 3 Order. This filing also meets the requirements that the RTOs file a combined report on the implementation of the JOA and progress towards a joint and common market.

Respectfully Submitted,

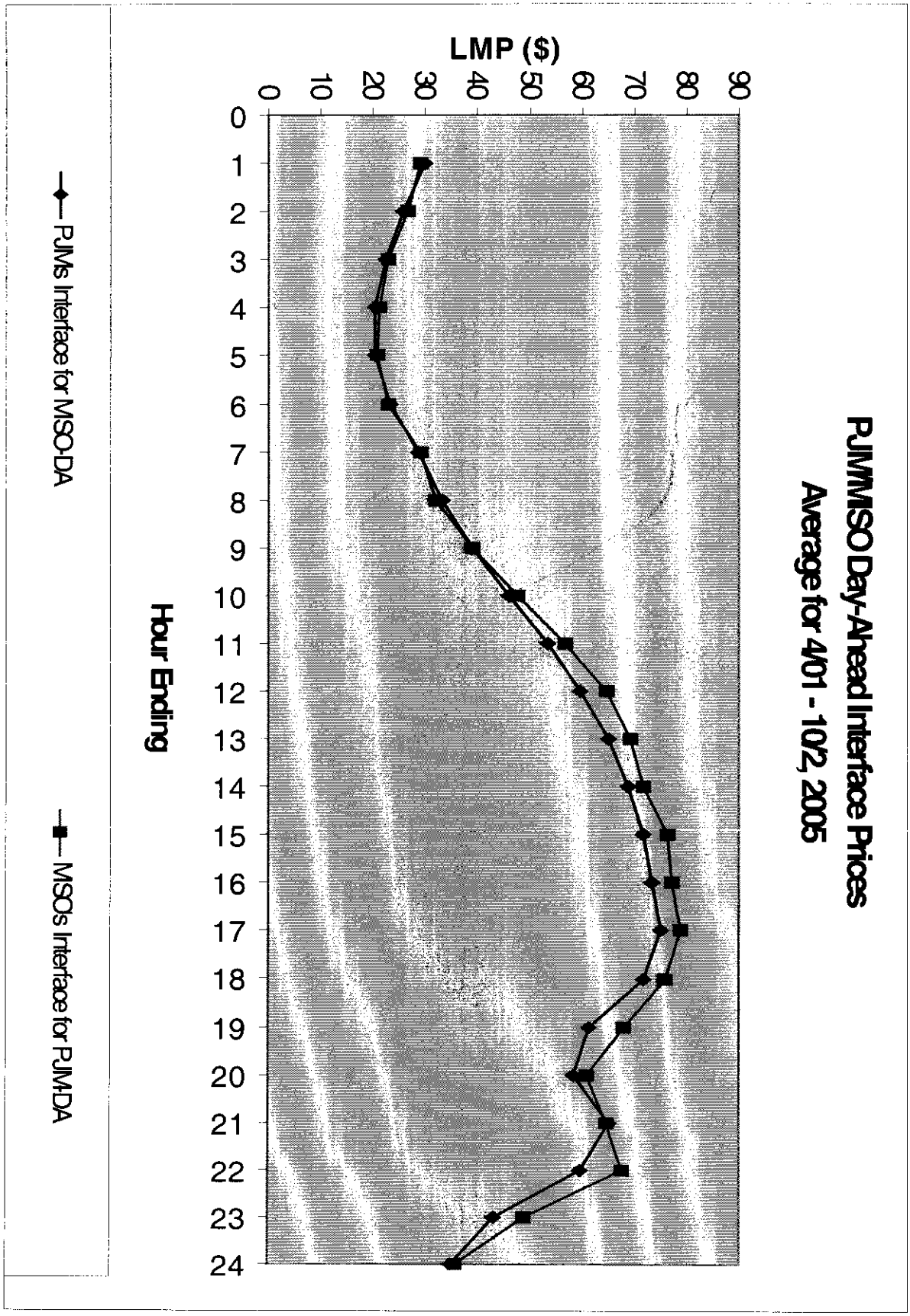


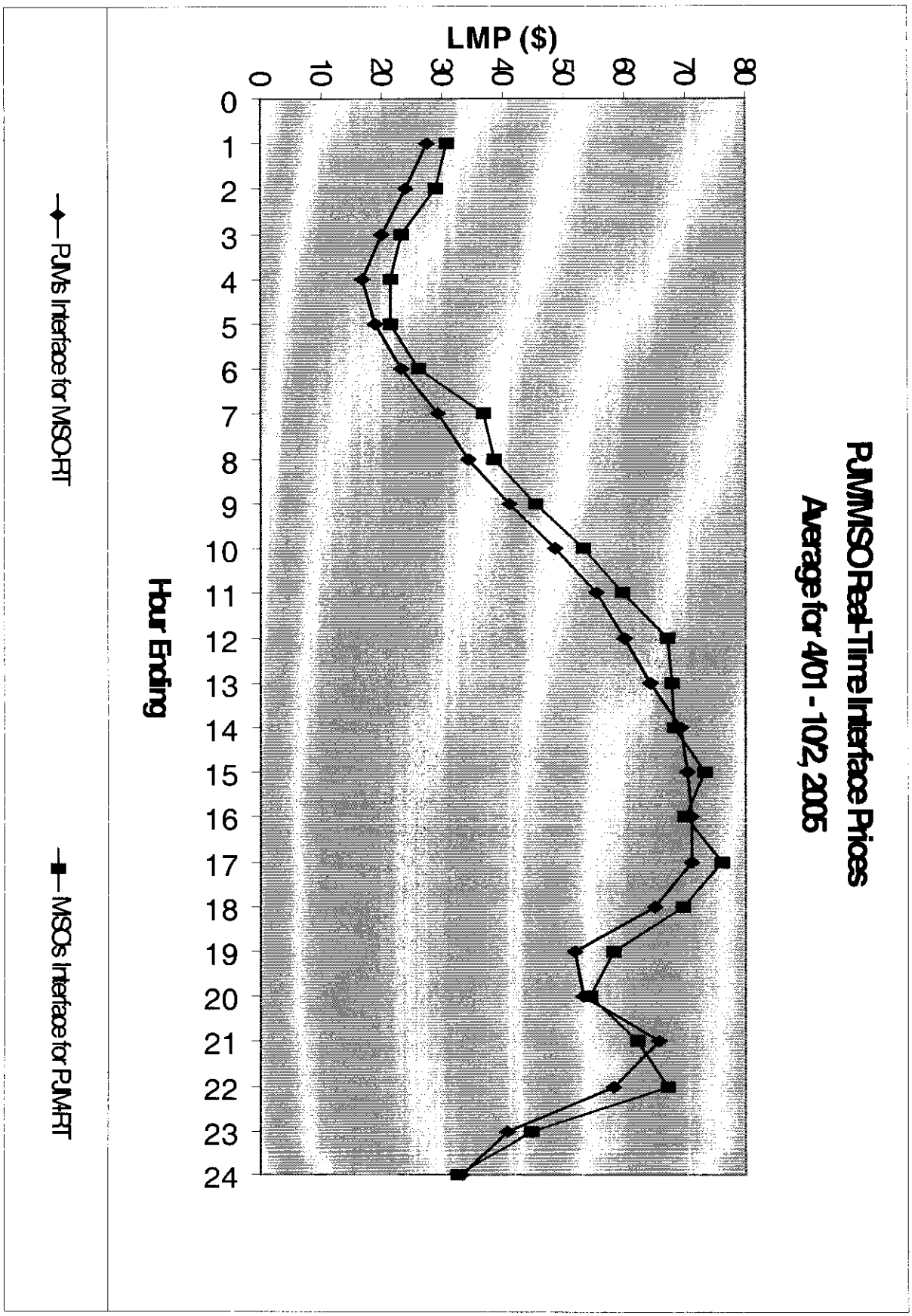
Steven R. Pincus
Counsel for PJM Interconnection, L.L.C.

Gregory A. Troxell
Counsel for Midwest Independent
Transmission System Operator, Inc.

APPENDIX 1 TO MIDWEST ISO/PJM

JOINT OCTOBER 31, 2005 FILING IN DOCKET ER04-375





APPENDIX 2 TO MIDWEST ISO/PJM
JOINT OCTOBER 31, 2005 FILING IN DOCKET ER04-375

PJM-MISO v. MISO-PJM Interface Price Correlation

All Hours

	Monthly Correlation		Overall Correlation	
Month	Day-ahead	Real-time	Day-ahead	Real-time
Apr-05	0.86	0.63	0.86	0.63
May-05	0.89	0.75	0.88	0.69
Jun-05	0.96	0.75	0.93	0.72
Jul-05	0.95	0.76	0.94	0.76
Aug-05	0.96	0.73	0.95	0.77
Sep-05	0.92	0.74	0.94	0.76

On-peak Hours

	Monthly Correlation		Overall Correlation	
Month	Day-ahead	Real-time	Day-ahead	Real-time
Apr-05	0.65	0.46	0.65	0.46
May-05	0.76	0.58	0.75	0.52
Jun-05	0.94	0.61	0.89	0.58
Jul-05	0.93	0.57	0.91	0.62
Aug-05	0.93	0.58	0.93	0.66
Sep-05	0.91	0.61	0.93	0.66

Off-peak Hours

	Monthly Correlation		Overall Correlation	
Month	Day-ahead	Real-time	Day-ahead	Real-time
Apr-05	0.80	0.58	0.80	0.58
May-05	0.90	0.67	0.83	0.63
Jun-05	0.95	0.75	0.90	0.69
Jul-05	0.95	0.82	0.92	0.77
Aug-05	0.95	0.72	0.93	0.77
Sep-05	0.84	0.68	0.91	0.75

APPENDIX 3 TO MIDWEST ISO/PJM

JOINT OCTOBER 31, 2005 FILING IN DOCKET ER04-375

Benefits Calculations

1. Participant Staff/Training Savings

Each initiative was examined to determine the effects on the day-to-day operations of the market participants. Participant staff time-savings were estimated for certain initiatives that are expected to directly impact those operations. For example, the joint and common market initiative for aligning FTR timelines and products should enable participants to save time in preparing for and participating in periodic FTR auctions as well as save time in scheduling and working with FTRs. The staff time-savings values, for each initiative were initially estimated by the working group and then validated with market participants through follow-up phone conversations and discussion during the stakeholder meetings. The estimated daily market participant time-savings associated with each initiative is listed in column 3 of Table 2 below.

This methodology can be illustrated. For example, the alignment of FTR initiative, summarized in row 1 of Table 2 is interpreted as follows:

- The alignment of FTR timelines and products initiative was expected to save market participants an average of 20 minutes per day or .33 hours per day.
- The annual time-savings estimated per market participant was calculated by multiplying the daily time-savings estimate by the 260 workdays per year (5 days per week for 52 weeks).
- The annual time-savings estimate was converted into a dollar savings estimated by multiplying the annual time-savings by an average hourly (Full Time Equivalent) FTE rate. (For this study the average hourly FTE rate was based on a fully loaded annual FTE cost of $120,000/year) and 2080 working hours per year.
- Finally the total annual benefit of the initiative was calculated by multiplying the annual market participant cost savings by the total number of participants who were expected to be able to take advantage of the proposed initiative, which in the case of the initiative to align FTRs was 80 participants (again see line 1 of Table 2).
  For the alignment of FTRs the full calculation of benefits was:

  .33 hr/day * 260 days * ($120,000 per year/2080 hours per year) * 80 participants

= $400,000

In addition to staff time-savings, savings to participant staff training efforts were also considered. In cases where an initiative would lead to market participants interfacing with one common system rather than a system for each RTO it was assumed that staff training savings would occur because participant employees would only need to be trained to use one system. The staff training savings values, for each initiative were initially estimated by the working group and then validated with market participants through follow-up phone conversations and discussion during the stakeholder meetings. The estimated daily market participant time-savings associated with each initiative is listed in column 2 of Table 2 below.

The process used to calculate the Staff Training Savings benefit for every initiative was very similar to the process used to develop the time-savings benefit discussed above. Again the alignment of FTR values listed in row 1 of Table 2 is used to illustrate the calculation:

- The alignment of FTR timelines and products initiative was expected to save market participants an average of 40 training hours per year.
- The annual training hour savings estimate was converted into a dollar savings estimated by multiplying the annual training savings by an average hourly Full Time Equivalent ("FTE") rate. (For this study the average hourly FTE rate was based on a fully loaded annual FTE cost of $120,000/year) and 2080 working hours per year.
- Finally the total annual benefit of the initiative was calculated by multiplying the annual market participant training cost savings by the total number of participants who were expected to be able to take advantage of the proposed initiative, which in the case of the initiative to align FTRs was 80 participants (again see line 1 of Table 2).

For the alignment of FTRs the full calculation of benefits was:

40 hours per year * ($120,000 per year/2080 hours per year) * 80 participants
= $184,615

Therefore, the total estimated benefit for the FTR timelines and products initiative is the sum of the time-savings and the training savings:

Participant Staff Savings: $400,000 per year
Participant Training Savings: $184,615 per year
Total Estimated Savings: $584,615 per year

Market Efficiency Gain

As previously discussed, the market efficiency gain benefits analysis for each joint and common market initiative was performed in two steps. In the first step, the analysis focused on developing an estimated market efficiency gain for the combined market footprint assuming a pseudo single market operation. The second step reviewed the relative impact each joint and common market initiative would have on improving the efficiency of transactions moving across the inter-RTO border and assigned a relative benefit to each based on an assigned weighting factor with the single market initiative capturing 100% of the estimated market efficiency gain. Absent the ability to perform a detailed production modeling analysis due to time constraints, the estimated market efficiency gain was calculated, on an hourly basis, as follows:

Estimated Reduction in Regional Production Cost =

Absolute Value of [PJM Proxy Bus Price – Midwest ISO Proxy Bus Price] * 0.5 * Transaction Volume, where as follows:

PJM Proxy Bus Price = LMP at PJM Proxy Bus for pricing bilateral transactions from PJM to Midwest ISO

Midwest ISO Proxy Bus Price = LMP at Midwest ISO Proxy Bus for pricing bilateral transactions from Midwest ISO to PJM

Transaction Volume = estimated increase in transaction volume, either from PJM to Midwest ISO or from Midwest ISO to PJM, that would be required to converge the PJM and Midwest ISO proxy bus prices.

Fifty percent of the difference between the proxy bus prices was utilized to represent the assumption that the converged proxy bus price would be half way between the actual PJM and Midwest ISO proxy bus price in each hour. Table 1 below shows the amount of increased transaction volumes utilized to calculate the hourly market efficiency gain, on both a Day-Ahead and Real-Time basis, that is estimated to be required for price convergence. Transaction volume assumptions increase with increases in proxy bus price differentials to represent the need for larger transaction volumes to converge larger differentials in proxy bus prices.

The results produced utilizing this methodology can be equated to a proxy for estimated production cost savings. The following example illustrates how this is accomplished:

Assumptions:

- PJM proxy bus price: $95/Mwh
- Midwest ISO proxy bus price: $83/Mwh
- Price differential = $12/Mwh
- Transaction Volume from Table 1: 500 Mws
- Prices converge to $89/Mwhr

Production Cost Calculations:

- Midwest ISO production cost increase = 500 Mws * $89/Mwhr = $44,500
- PJM production cost decrease = 500 Mws * $95/Mwh = $47,500
- Net reduction in production cost = $47,500 - $44,500 = $3,000

Efficiency Gain Calculation used in this Benefits Analysis:

- ($95/Mwh - $83/Mwh) * 0.5 * 500 Mws = $3,000

As shown from the example, the methodology used to calculate the market efficiency gains, based on 50% of the difference between proxy bus price differentials, exactly matches, the net change in production cost (assuming no congestion and assuming that the 500 Mws is sufficient to converge the border price to $89/Mwh).

The level of transaction volumes across the different proxy bus differential ranges was based upon a review of resource merit order price curves, actual net interchange between PJM and Midwest ISO and flowgate limits associated with the flowgates utilized in the calculation of the proxy bus prices. In general, the increased transaction volume assumptions are conservative as compared to the estimated transaction volume increases required to converge proxy bus prices as indicated by the resource merit order price curves. Additionally, the maximum transaction volume increase was chosen as to not violate the combined transfer limit between Midwest ISO and PJM. This was accomplished by examining the historical actual net interchange between Midwest ISO and PJM and then limiting the transaction volume increase such that the increase in actual net interchange did not violate the combined transfer limit. The combined transfer limit was estimated by reviewing the ATC limits across all flowgates (between Midwest ISO and PJM) and utilizing the most limiting flowgate to calculate the transfer limit. Using this methodology, the transfer limit was estimated at approximately 7,000 megawatts and the actual net interchange between Midwest ISO and PJM was limited to this amount.

The price and volume calculations were based on actual hourly data for the proxy bus prices and actual Midwest ISO/PJM net interchange from April 1, 2005 through July 31,

2005. Table 1 below lists the range of price difference and the resulting MWH requirement that was associated with each range of price differences.

Price Differential	MWH
>$3 <= $5	150
>$5 <= $10	300
>$10 <= $20	500
>$20 <= $30	750
>$30 <= $40	1,000
>$40 <= $50	1,500
>$50	2,000

Table 1 – Proxy Price Ranges

The total estimated market efficiency gain for each initiative was calculated by multiplying the increased transaction volume by 50% of the proxy price difference for every hour and summing the hourly values over the four months of the test period. This was done for both the Day-Ahead and Real-Time proxy prices. The four month totals were then extrapolated to estimate a twelve month annual market efficiency gain for each market. Because of the way the PJM and Midwest ISO markets operate, the full volume of Day-Ahead energy market transactions settle at Day-Ahead price, while only deviations from Day-Ahead schedules settle at Real-Time price. Consequently, the net (100%) efficiency gain available from the Day-Ahead and Real-Time markets was assumed to be captured as 80% of the Day-Ahead market efficiency potential gains and 20% of the Real-Time market efficiency potential gains from price convergence in those markets.

The combined market efficiency gain from both markets was calculated based upon an 80% weighting applied to the Day-Ahead estimated market efficiency gain and a

weighting of 20% applied to the Real-Time market efficiency gain. This combined market efficiency gain was then used as the basis for calculating the estimated market efficiency gains for each joint and common market initiative. A summary of the calculations are listed below:

- Estimated market efficiency gain calculated using Real-Time proxy bus prices and Table 1 transaction volume increases:
  $14.7 Million for four month period
  $44.0 Million annually

- Estimated market efficiency gain calculated using Day-Ahead proxy bus prices and Table 1 transaction volume increases:
  $5.1 Million for four month period
  $15.1 Million annually

- Resulting market efficiency gain calculated as 20% of $44 Million plus 80% of $15.1 Million equals $20.9 Million annually

A percentage share of the annual $20.9 million was then allocated to each of the initiatives that were expected to provide incentives for increased transaction volumes across the border. Larger percentage shares were allocated to the initiatives creating the most incentive to increase transactions volumes, with the highest percentage (*i.e.* 100%) being allocated to the single market initiative. The sum of allocated market efficiency gains to joint and common market initiatives other than the Single Market initiative was limited to a maximum of 20% based upon internal discussions with PJM and Midwest ISO staff and feedback from market participants. The underlying principles applied in selecting this maximum percentage were:

- Market participants will not be able to capture 100% of the market efficiency gain because they are not privy to perfect hindsight in scheduling transactions and thus, will not be able to capture all of the opportunities.
- Prices at the border will never converge to be equal because the market participants' economic incentive diminishes with reduced proxy bus price differentials.
- Market efficiency gain benefits should be as conservative to ensure that benefits exceed costs for the identified JCM initiative to be implemented.

Results

Table 2 below lists the joint and common market initiatives and the allocations of staff time savings, reduced training and market efficiency percentage.

Table 2 – Benefits Allocations

Initiative	Market Efficiency Share - %	Reduced Training hrs/year	Staff Time Savings minutes/day (FTE - $120 k/year)	Number of affected Participants
Alignment of FTR Timelines and Products	2.0	40	20	80
Alignment of Operating Reserves/Revenue Sufficiency Guarantee Products	6.0	0	0	80
Common Search Capabilities	0.0	0	10	150
Link Existing eData/PTP Sites	0.5	10	25	80
Joint Website	0.0	0	10	150
Moving Joint-Owned Units Between Markets	0.25	0	0	10
Common Long-Term Transmission Queue	1.5	0	10	20
Midwest ISO Ramp Viewer	0.5	0	10	80
Central Location to View Both Ramp Viewers	1.0	0	15	80
Common Ramp Portal	1.5	0	25	80
Alignment of OASIS Business Practices	1.0	10	10	80
Common Treatment of Dynamic Schedules/Pseudo-Ties	0.5	5	0	80
Standard Data Exchange (Web Services)	0.75	20	30	80
Standard Data, Visualization & Reporting Portal	1.0	60	45	80
Single OASIS	7.0	20	25	80
Market Portal/Single Market Implementation	100.0	80	60	80

ATTACHMENT A TO MIDWEST ISO/PJM
JOINT OCTOBER 31, 2005 FILING IN DOCKET ER04-375

JCM Initiatives Matrix

The following depicts the JCM initiatives identified to date and the present status of each.

Committed Initiatives: PJM and Midwest ISO has committed to initiating the stakeholder processes and other tasks necessary for implementing these initiatives.

Further Action Needed Initiatives: Certain initiatives have been identified as potential additional elements to the joint and common market; however, further evaluation of these initiatives is required to determine if they will be recommended for implementation.

No Action Initiatives: These initiatives do not appear to be justified under current conditions and are not recommended for further consideration at this time.

Commited Initiatives	Initial Implementation Cost 3 Year Gross Benefit
Further Action Needed Initiatives	Initial Implementation Cost 3 Year Gross Benefit
No Action Initiatives	Initial Implementation Cost 3 Year Gross Benefit

			2006		2007		2008	
Commercial	1	FTR Market Convergence	Alignment of FTR Timelines and Products (Note: All MISO cost)	$600,000 $3,008,657			Cross Border FTRs in the allocations Cross border FTRs in auctions	$4,000,000 *Analyzing* $8,000,000 N/A
	2	Price Rationalization and Convergence at the Border			PJM implementation of marginal losses (Note: All PJM costs) Alternative Border Pricing Point Calculation	$600,000 N/A $200,000 *Analyzing*		
	3	Reduce Hurdle Rate	Alignment of PJM Operating Reserves and MISO Revenue Sufficiency Guarantee (Note: All MISO cost)	$600,000 $3,764,432	Depancaking of PTP ancillary services (Control Area Services, T.O. Control Center Services, Reactive, Black Start)	$400,000 N/A		
	4	Broader Price Transparency and Common Reporting	Existing MISO & PJM Websites Linking of sites Data Available at Both Sites (LMPs, Tie Flows, Loads) Common Search Capabilities New Joint Website to Host Joint meeting and Events Calendar, Joint Documents and Reports	$500,000 $1,952,165 $200,000 $1,125,000 $600,000 $1,125,000	Standard Data Exchange (Web Services) LMPs, Contingencies, Loads, Dispatch Signals, Outages, Emergency Event/Notifications	$3,000,000 $2,547,477	Implementation of single MISO & PJM Website (Individual Websites go away) Standard Data Visualization and Reporting Portal Create a single MISO & PJM Data and Report Portal	$750,000 N/A $8,500,000 $4,158,174
	5	Increased Market Opportunities	Moving JOUs between markets	$100,000 $156,851			Shared Regulation Market	$8,000,000 *Analyzing*
	6	Operational Consistency	Common Long Term Transmission Queue MISO Ramp Viewer (under way) Alignment of OASIS Business Practices Single OASIS Common Treatment of Dynamic Schedules/Pseudo-Ties	$200,000 $1,091,108 $150,000 $913,703 $500,000 $1,365,867 $8,000,000 $6,168,760 $200,000 $382,934	Common Time Zones (Note: All PJM cost) Central location to view both ramp viewers Coordinated OASIS Reserve Sharing	$5,000,000 *Analyzing* $100,000 $1,527,405 $1,200,000 *Analyzing* $8,000,000 N/A	Single Resource Adequacy Solution Common Ramp Portal	$8,000,000 N/A $750,000 $2,091,108
	7	Single Market	Year 1 - Rule Alignment & Market Portal Design	N/A N/A	Year 2 - Initial Market Portal Implementation	N/A N/A	Year 3-5 - Implementation of Single Market	$105,000,000 $67,500,000
Reliability	1	Emergency Energy Agreement	Alignment of Agreements and Practices	$100,000 *Reliability*				
	2	Black Start and Restoration			Alignment of Agreements and Practices	$500,000 $936,000		
Plan	1	Joint Expansion Planning and Common Deliverability Studies	Alignment of Agreements and Practices	$120,000 *Reliability*				
Total		Costs 3-Year Gross Benefit	2006	$3,870,000 $14,885,717	2007	$1,200,000 $2,463,405	2008	$750,000 $2,091,108

ATTACHMENT B TO *MIDWEST* ISO/PJM

JOINT OCTOBER 31, 2005 FILING IN DOCKET ER04-375

Attachment B - JCM Initiatives Timelines and Cost-Benefit Analyses

This attachment contains the implementation timelines and cost-benefit analyses that were performed for the evaluated JCM initiatives.

The implementation timeline attachment for a particular JCM initiative contains:

- The implementation activities for the initiative.
- The duration of the activities.
- Any key milestones for the implementation effort.
- Any critical dependencies that exist.

The cost-benefit attachment for a particular JCM initiative contains:

- The assumptions that were used in determining the benefits for the initiative.
- The forecasted costs to implement the initiative (spread across an assumed three year cost recovery period).
- Any on-going operating costs associated with implementation of the initiative (hardware and software licensing and/or maintenance fees).
- Market efficiency gains representing the overall market savings (estimated reduction in production cost used as a proxy) associated with the implementation of each initiative.
- Market participant savings representing estimated cost savings to market participant organizations associated with the implementation of each initiative. Market participant cost savings were split between reductions in staff time required to perform specific tasks and reductions in training costs associated with learning to use multiple processes, procedures and technologies.

Attachment B-1: **Alignment of FTR Timelines and Products**

Objective: Align Midwest ISO FTR products with PJM FTR products. Align Midwest ISO FTR allocation and auction timeframes with PJM FTR allocation and auction timeframes.

Implementation TimeLine: **Attachment B-1a**

Start :2006	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Assign team and create detailed project plan												
Review & compare FTR timeframes and product features, select best practices, determine required changes to MISO policies, procedures, applications and systems, estimate cost and scheduled to implement.		◆1	▲									
Review with stakeholders and obtain regulatory approval.		◆2	▲									
Modify policies, procedures , applications and systems as needed and test changes.			◆3									
Provide training & implement changes.				◆4								

Key Milestones:
(1) Alignment of product elements.
(2) Review best practices w/stakeholders
(3) Modifications complete
(4) Implementation complete

Critical Dependencies:
▲ MISO Stakeholder agreement on FTR best practices.
▲ Regulatory approval.

Cost-Benefit Analysis: **Attachment B-1b**

Assumptions

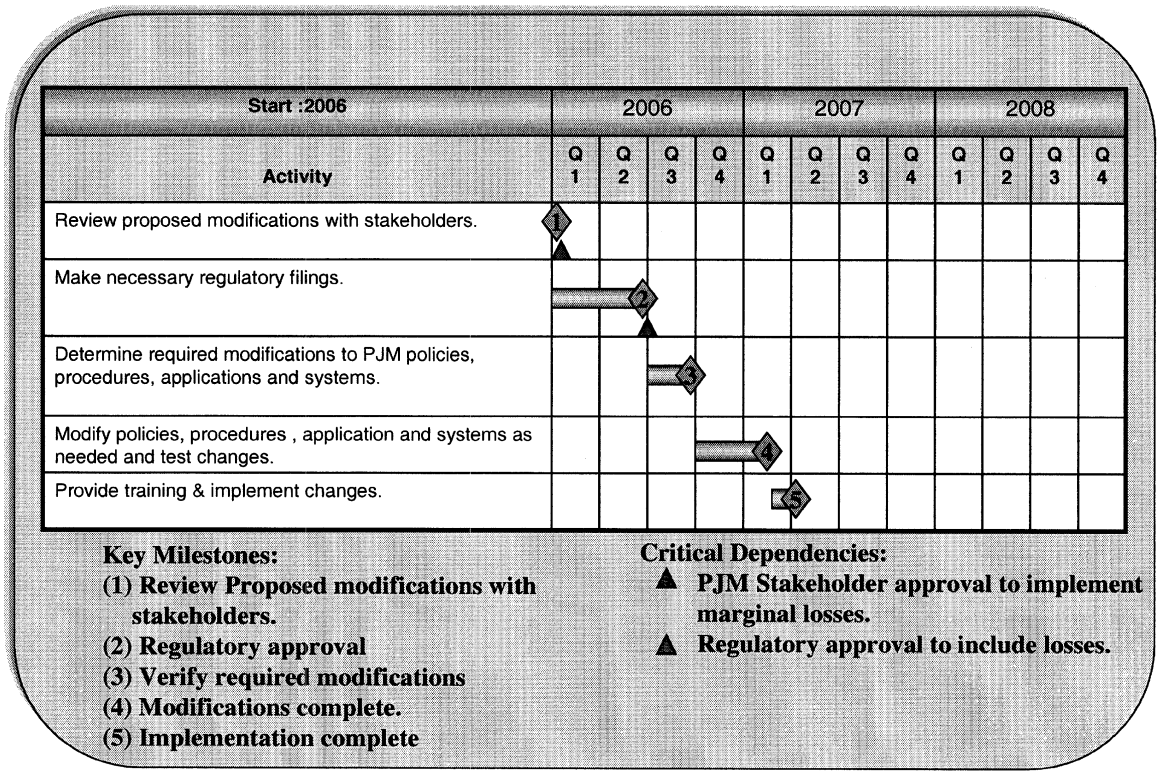
- ✓ **Capture 2.0% of est. market efficiency gain**
- ✓ **40 hours/year in reduced training time**
- ✓ **Time savings of 20 minutes/day**
- ✓ **80 Participants**

Cost/Benefit	2006	2007	2008	Total
Cost Recovery	($200,000)	($200,000)	($200,000)	($600,000)
On-going operating costs	($0)	($0)	($0)	($0)
Market Efficiency Benefit	$418,270	$418,270	$418,270	$1,254,811
Participant Staffing and Training Savings	$584,615	$584,615	$584,615	$1,753,846
Net Benefits	$802,886	$802,886	$802,886	$2,408,657

Attachment B-2: **PJM Move to Marginal Losses**

Objective: Achieve a greater level of price convergence and rationalization at the PJM-Midwest ISO border.

Implementation TimeLine: **Attachment B-2a**



Cost-Benefit Analysis: **Not Applicable**

Attachment B-3: **Alignment of Operating Reserves/Revenue Sufficiency Guarantee Products**

Objective: Allocate Operating Reserves (OR) and Revenue Sufficiency Guarantee (RSG) charges similarly to reduce the hourly volatility of these charges in the Midwest ISO market.

Implementation TimeLine: **Attachment B-3a**

Start :2006	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Assign team and create detailed project plan												
Determine required modifications to MISO RSG policies, procedures, applications, and systems.		1										
Review proposed modifications with stakeholders.		2										
Make appropriate regulatory filings.			3									
Modify policies, procedures , application and systems as needed and test changes.				4								
Provide training & implement changes.				5								

Key Milestones:
(1) Requirements Defined
(2) Stakeholder go/no-go decision.
(3) Regulatory approval
(4) Modifications complete
(5) Implementation complete

Critical Dependencies:
- **Agreement from stakeholders to implement aligned policy.**
- **Regulatory approval**

Cost-Benefit Analysis: **Attachment B-3b**

Assumptions

- ✓ **Capture 6% of est. market efficiency gain**
- ✓ **Number of Participants = 80**

Cost/Benefit	2006	2007	2008	Total
Cost Recovery	($200,000)	($200,000)	($200,000)	($600,000)
On-going operating costs	($0)	($0)	($0)	($0)
Market Efficiency Benefit	$1,254,811	$1,254,811	$1,254,811	$3,764,432
Participant Staffing and Training Savings	$0	$0	$0	$0
Net Benefits	$1,054,811	$1,054,811	$1,054,811	$3,164,432

Attachment B-4: **Common Search Capabilities**

Objective: Implement one search engine that searches both the PJM and Midwest ISO public websites.

Implementation TimeLine: **Attachment B-4a**

Start :2006	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Assign team and create detailed project plan												
Identify terminology which can be easily aligned and develop common terminology where possible.												
Evaluate alternative search engines and select the best option.												
Modify policies, procedures , applications and systems to accommodate new terminology and test changes.												
Install new search engine & test			(1)									
Provide training & implement changes.				(2)								

Key Milestones:
(1) Implement aligned terminology
(2) Implementation complete

Critical Dependencies: None identified.

Cost-Benefit Analysis: **Attachment B-4b**

Assumptions

- ✓ Time savings of 10 minutes/day
- ✓ 150 Participants

Cost/Benefit	2006	2007	2008	Total
Cost Recovery	($66,667)	($66,667)	($66,667)	($200,000)
On-going operating costs	($50,000)	($50,000)	($50,000)	($150,000)
Market Efficiency Benefit	$0	$0	$0	$0
Participant Staffing and Training Savings	$375,000	$375,000	$375,000	$1,125,000
Net Benefits	$258,333	$258,333	$258,333	$775,000

Attachment B-5: **Link Existing eData/PTP Sites**

Objective: Link the existing PJM eData and Midwest ISO PTP sites together. Exchange a subset of data between the two sites (e.g. LMP, Instantaneous Load, Tie Flows) and make it available for display and download.

Implementation TimeLine: **Attachment B-5a**

Start :2006	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Assign team and create detailed project plan												
Identify the subset of data that will be made available for display and download.												
Evaluate alternative options for linking the site, and for downloading and displaying the in-scope data. Select the appropriate technology and estimate cost and schedule to implement.												
Review cost and schedule with stakeholders.		(1)										
Link sites and deploy and test download and display technology.			(2)									
Provide training & implement changes.				(3)								

Key Milestones:
(1) Stakeholder approval to proceed
(2) linkage made and capability tested.
(3) Implementation complete

Critical Dependencies: None identified.

Cost-Benefit Analysis: **Attachment B-5b**

Assumptions

- ✓ **Capture .5% of est. market efficiency gain**
- ✓ **10 hours/year in reduced training time**
- ✓ **Time savings of 25 minutes/day**
- ✓ **80 Participants**

Cost/Benefit	2006	2007	2008	Total
Cost Recovery	($166,667)	($166,667)	($166,667)	($500,000)
On-going operating costs	($100,000)	($100,000)	($100,000)	($300,000)
Market Efficiency Benefit	$104,568	$104,568	$104,568	$313,703
Participant Staffing and Training Savings	$546,154	$546,154	$546,154	$1,638,462
Net Benefits	$384,055	$384,055	$384,055	$1,152,165

Attachment B-6: **Joint Website**

Objective: Create one new joint website that hosts PJM and Midwest ISO common information (e.g. joint meeting and event calendars).

Implementation TimeLine: **Attachment B-6a**

Start :2006	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Assign team and create detailed project plan.												
Develop a process to determine what information must be maintained, when information should be change/added or deleted and who should maintain.		(1)										
Design and build website, populate with initial information.		(2)										
Perform Systems test.			(3)									
Provide training & implement changes.			(4)									

Key Milestones:
(1) Agreement on content.
(2) Design Approved
(3) Testing Complete
(4) Implementation complete

Critical Dependencies: none identified.

Cost-Benefit Analysis: **Attachment B-6b**

Assumptions

- ✓ Time savings of 10 minutes/day
- ✓ 150 Participants

Cost/Benefit	2006	2007	2008	Total
Cost Recovery	($200,000)	($200,000)	($200,000)	($600,000)
On-going operating costs	($100,000)	($100,000)	($100,000)	($300,000)
Market Efficiency Benefit	$0	$0	$0	$0
Participant Staffing and Training Savings	$375,000	$375,000	$375,000	$1,125,000
Net Benefits	$75,000	$75,000	$75,000	$225,000

Attachment B-7: **Moving Joint-Owned Units Between Markets**

Objective: Allow selection of PJM or Midwest ISO Markets to sell output of certain Joint Owned Units

Implementation TimeLine: **Attachment B-7a**

Start :2006	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Assign team and create detailed project plan.												
Develop alternative processes for further accommodating the movement of JOUs between markets and jointly select the best option.		(1)										
Identify policies, procedures, applications and systems which must be to modified to accommodate the new process & determine cost to implement.			(2)									
Modify policies, procedures, application and systems as required and test.				(3)								
Provide training & implement changes.					(4)							

Key Milestones:
(1) Process Designed
(2) Modifications Identified
(3) Testing Complete
(4) Implementation complete

Critical Dependencies: None identified.

Cost-Benefit Analysis: **Attachment B-7b**

Assumptions

- ✓ **Capture 0.25% of est. market efficiency gain**
- ✓ **Time savings of 0 minutes/day**
- ✓ **10 Participants**

Cost/Benefit	2006	2007	2008	Total
Cost Recovery	$33,333	$33,333	$33,333	$100,000
On-going operating costs	$0	$0	$0	$0
Market Efficiency Benefit	$52,284	$52,284	$52,284	$156,851
Participant Staffing & Training Savings	$0	$0	$0	$0
Net Benefits	$18,951	$18,951	$18,951	$56,851

Attachment B-8: **Common Long-Term Transmission Queue**

Objective: Create a common long-term transmission queue that facilitates easier scheduling of annual, cross-border firm transmission service requests.

Implementation TimeLine: **Attachment B-8a**

Start :2006	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Assign team and create detailed project plan.												
Determine differences in existing PJM and MISO processes and define a common long term transmission queue process.		(1)										
Identify policies, procedures, applications and systems which must be to modified to accommodate the new process & determine cost to implement.												
Review process and cost with stakeholders and make go/no-go decision.			(2)									
Make necessary regulatory filings			(3)									
Modify policies, procedures, application and systems as required and test.				(4)								
Provide training & implement changes.				(5)								

Key Milestones:
(1) Agreement on Process
(2) Stakeholder Approval
(3) Regulatory Approval
(4) Testing Complete
(5) Implementation Complete

Critical Dependencies:
▲ MISO Stakeholder approval.
▲ Regulatory approval.

Cost-Benefit Analysis: **Attachment B-8b**

Assumptions

- ✓ **Capture 1.5% of est. market efficiency gain**
- ✓ **Time savings of 10 minutes/day**
- ✓ **20 Participants**

Cost/Benefit	2006	2007	2008	Total
Cost Recovery	($66,667)	($66,667)	($66,667)	($200,000)
On-going operating costs	($0)	($0)	($0)	($0)
Market Efficiency Benefit	$313,703	$313,703	$313,703	$941,108
Participant Staffing & Training Savings	$50,000	$50,000	$50,000	$150,000
Net Benefits	$297,036	$297,036	$297,036	$891,108

Attachment B-9: **Midwest ISO Ramp Viewer**

Objective: Develop a central location where Market Participants can view Midwest ISO ramp.

Implementation TimeLine: **Attachment B-9a**

Start :2005 (project underway)	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Assign team and create detailed project plan.	To be Complete in 2005											
Define Ramp Viewer business and technical requirements.	To be Complete in 2005											
Architect and design viewer and select appropriate technology to implement.	To be Complete in 2005											
Build and test viewer.		(1)										
Provide training & implement changes.			(2)									

Key Milestones:
(1) Testing Complete
(2) Implementation complete

Critical Dependencies: None identified

Cost-Benefit Analysis: **Attachment B-9b**

Assumptions

- ✓ Capture 0.5% of est. market efficiency gain
- ✓ Time savings of 10 minutes/day
- ✓ 80 Participants

Cost/Benefit	2006	2007	2008	Total
Cost Recovery	($150,000)	$0	$0	($150,000)
On-going operating costs	($10,000)	($10,000)	($10,000)	($30,000)
Market Efficiency Benefit	$104,568	$104,568	$104,568	$313,703
Participant Staffing & Training Savings	$200,000	$200,000	$200,000	$600,000
Net Benefits	$144,568	$294,568	$294,568	$733,703

Attachment B-10: **Central Location to View Both Ramp Viewers**

Objective: Develop a central location where both Midwest ISO and PJM ramp viewers can be accessed.

Implementation TimeLine: **Attachment B-10a**

Start :2007	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Assign team and create detailed project plan.												
Develop business and technical requirements for central location including a review of security concerns.						(1)						
Design central location and select appropriate technology to implement.												
Build and test central location.							(2)					
Provide training & implement changes.								(3)				

Key Milestones:
(1) Security Concerns Addressed
(2) Testing Complete
(3) Implementation complete

Critical Dependencies: None identified

Cost-Benefit Analysis: **Attachment B-10b**

Assumptions

- ✓ Capture 1% of est. market efficiency gain
- ✓ Time savings of 15 minutes/day
- ✓ 80 Participants

Cost/Benefit	2007	2008	2009	Total
Cost Recovery	($33,333)	($33,333)	($33,333)	($100,000)
On-going operating costs	($10,000)	($10,000)	($10,000)	($30,000)
Market Efficiency Benefit	$209,135	$209,135	$209,135	$627,405
Participant Staffing & Training Savings	$300,000	$300,000	$300,000	$900,000
Net Benefits	$465,802	$465,802	$465,802	$1,397,405

Attachment B-11: **Common Ramp Portal**

Objective: Develop a common portal to allow market participants to view and reserve ramp in both RTOs simultaneously.

Implementation TimeLine: **Attachment B-11a**

Start :2008	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Assign team and create detailed project plan.												
Develop joint business and technical requirements for a common ramp portal.										◇1		
Architect and design portal and select appropriate technology to implement.												
Build and test portal.											◇2	
Provide training & implement changes.												◇3

Key Milestones:
(1) Joint Requirements Complete
(2) Testing Complete
(3) Implementation Complete

Critical Dependencies: None identified

Cost-Benefit Analysis: **Attachment B-11b**

Assumptions

- ✓ Capture 1.5% of est. market efficiency gain
- ✓ Time savings of 25 minutes/day
- ✓ 80 Participants

Cost/Benefit	2008	2009	2010	Total
Cost Recovery	($250,000)	($250,000)	($250,000)	($750,000)
On-going operating costs	($50,000)	($50,000)	($50,000)	($150,000)
Market Efficiency Benefit (1.5%)	$313,703	$313,703	$313,703	$941,108
Participant Staffing & Training Savings	$500,000	$500,000	$500,000	$1,150,000
Net Benefits	$513,703	$513,703	$513,703	$1,541,108

Attachment B-12: **Alignment of OASIS Business Practices**

Objective: Align the timing requirements between PJM and the Midwest ISO associated with transmission service requests.

Implementation TimeLine: **Attachment B-12a**

Start :2006	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Assign team and create detailed project plan.												
Identify policies, procedures, and terminology which comprise the MISO and PJM OASIS business practices.												
To the extent possible, develop common terminology and align policies, procedures and business practice documentation.		(1)										
Identify applications and systems which must be modified to effect the alignment.												
Modify applications and systems as required and test.			(2)									
Provide training & implement changes.				(3)								

Key Milestones:
(1) Common terminology and business practices.
(2) Testing Complete
(3) Implementation Complete

Critical Dependencies: None identified

Cost-Benefit Analysis: **Attachment B-12b**

Assumptions

- ✓ **Capture 1.0% of est. market efficiency gain**
- ✓ **Training savings of 10 hours/year**
- ✓ **Time savings of 10 minutes/day**
- ✓ **80 Participants**

Cost/Benefit	2006	2007	2008	Total
Cost Recovery	($166,667)	($166,667)	($166,667)	($500,000)
On-going operating costs	($0)	($0)	($0)	($0)
Market Efficiency Benefit	$209,135	$209,135	$209,135	$627,405
Participant Staffing & Training Savings	$246,154	$246,154	$246,154	$738,462
Net Benefits	$288,622	$288,622	$288,622	$865,867

Attachment B-13: **Common Treatment of Dynamic Schedules/Pseudo Ties**

Objective: In general, participants desire the flexibility to allow their generating units to participate directly in the RTO of their primary interest, even if those units are not physically located in that RTO. Providing this flexibility means implementing dynamic schedules the same way in each RTO.

Implementation TimeLine: **Attachment B-13a**

Start :2006	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
MISO implement change to remove dynamic schedule from ramp.												
Assign team and create detailed project plan												
Identify PJM and MISO procedures, applications and systems which are related to dynamic schedules												
Determine the effort required by stakeholders to modify their systems to accommodate a change.												
Review results with stakeholders and implement.												

Key Milestones:
(1) Analysis complete
(2) Stakeholder decision.

Critical Dependencies: None Identified.

Cost-Benefit Analysis: **Attachment B-13b**

Assumptions

- ✓ **Capture .5% of max market efficiency gain**
- ✓ **Reduced Training Time by 5 hours/year**
- ✓ **Number of Participants = 80**

Cost/Benefit	2007	2008	2009	Total
Cost Recovery	($66,667)	($66,667)	($66,667)	($200,000)
On-going operating costs	($0)	($0)	($0)	($0)
Market Efficiency Benefit	$104,568	$104,568	$104,568	$313,703
Participant Staffing & Training Savings	$23,077	$23,077	$23,077	$69,231
Net Benefits	$60,978	$60,978	$60,978	$182,933

Attachment B-14: **Emergency Energy - Align Agreements & Practices**

Objective: Former Control Area Operators of PJM and Midwest ISO had emergency energy agreements in place to facilitate the sale of energy during emergency conditions. While these agreements existed prior to RTO development, Midwest ISO and PJM may not be a legal party to the agreement. Midwest ISO and PJM would need to replace these existing agreements with emergency energy agreements between the RTOs.

Implementation TimeLine: **Attachment B-14a**

Start :2006	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Assign team and create detailed project plan.												
Identify existing agreements which need to be replaced with emergency energy agreements between the RTOs.												
Determine the legal, regulatory and corporate structure issues associated with replacing the prior agreements with new RTO to RTO agreements and analyze the cost to resolve.		1										
Obtain necessary Stakeholder approvals to move forward with new agreements.			2									
Make appropriate regulatory filings.			3									
Draft, sign and implement new agreements.				4								

Key Milestones:
(1) Analysis Complete
(2) Stakeholder Approval
(3) Regulatory approval
(4) Agreements in place.

Critical Dependencies:
▲ Stakeholder approval.
▲ Regulatory approval.

Cost-Benefit Analysis: **Not applicable. This is a Reliability Initiative.**

Attachment B-15: **Black Start & Restoration**

Objective: Coordinate system restoration plans and jointly evaluate critical black start resources.

.

Implementation TimeLine: **Attachment B-15a**

Start :2006	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Assign team and create detailed project plan.												
Compare MISO & PJM process, review terminology, process elements and product pricing, and determine the modifications required to align the processes.												
Determine the tariff, regulatory, and reliability issues associated with closer alignment of the processes and analyze the cost to proceed.												
Obtain stakeholder Approval to proceed.												
Make appropriate regulatory filings.												
Modify policies, procedures, applications and system to accommodate the new process.												
Provide training and implement.												

Key Milestones:
(1) Analysis Complete
(2) Stakeholder approval
(3) Regulatory approval
(4) Implementation complete

Critical Dependencies:
▲ Stakeholder approval.
▲ Regulatory approval.

Cost-Benefit Analysis: **Attachment B-15b**

Assumptions

- ✓ **Black Start requirements reduced by 150 MWs**
- ✓ **Black Start Charges in PJM are $2112/Mw-year**

Cost/Benefit	2007	2008	2009	Total
Cost Recovery	($166,667)	($166,667)	($166,667)	($500,000)
On-going operating costs	($100,000)	($100,000)	($100,000)	($300,000)
Reduced Black Start Unit Costs	$312,000	$312,000	$312,000	$936,000
Net Benefits	$45,333	$45,333	$45,333	$136,000

Attachment B-16: **Joint Expansion Planning & Common Deliverability Studies**

Objective: Regional expansion plans will include coordinated planning to include evaluation of impacts on other RTO facilities and required facility upgrades. Generation deliverability studies will include common criteria and study to obtain results, which demonstrate if units are deliverable in both RTOs and if they are not deliverable in both RTOs what system constraints limit the deliverability.

Implementation TimeLine: **Attachment B-16a**

Start :2006	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Create detailed project plan and discuss with stakeholders – end of 2005.												
Complete study to determine any reliability problems including limiting facilities for common deliverability – 1st and 2nd quarter 2006												
Provide results to stakeholders – early 3rd qtr 2006												
Obtain stakeholder Approval to proceed.												
Modify policies, procedures, applications and system to accommodate the new process.												
Provide training and implement.												

Key Milestones:
(1) Analysis Complete.
(2) Approval to Proceed.
(3) Process in place.

Critical Dependencies: None identified.

Cost-Benefit Analysis: **Not applicable. This is a Planning Initiative to improve reliability.**

ATTACHMENT C TO MIDWEST ISO/PJM
JOINT OCTOBER 31, 2005 FILING IN DOCKET ER04-375

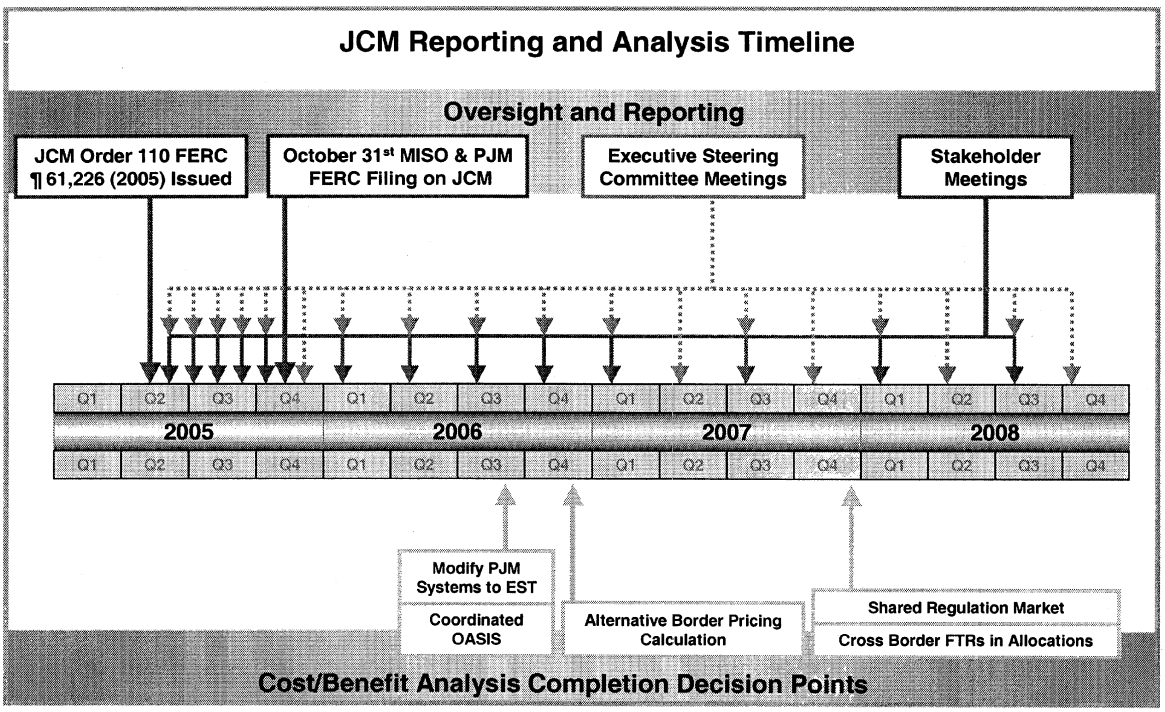
Attachment C - Further Action Needed JCM Initiatives

This attachment contains the JCM initiatives that while under consideration for possible implementation, require further cost/benefit studies, investigation, or overcoming of obstacles that prevent the RTOs from committing at this time to a definitive implementation plan and schedule.

The analysis timeline attachment for a particular JCM initiative contains:

- The implementation activities for the initiative.
- The duration of the activities.
- Any key milestones for the implementation effort.
- Any critical dependencies that exist.

The following figure depicts the time frame in when decisions on each of these JCM initiatives will be made and progress reports provided to stakeholders, as well as the stakeholder meetings held to date.



Attachment C-1: **Cross Border FTRs in the Allocations**

Objective: Align the process by which FTRs/ARRs are allocated in the two markets.

Analysis TimeLine: **Attachment C-1**

Start :2007	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Assign team and create detailed project plan												
Determine how the PJM and MISO allocation processes must change to create alignment. Define the business rules for resolving differences in SFT results.												
Perform detailed cost/ benefit analysis of required modifications to allocation processes and develop implementation plan.								1				
Review results with stakeholders.								2				

Key Milestones:
(1) Cost/benefit Analysis Complete
(2) Analysis reviewed with stakeholders and go/no-go decision made

Critical Dependencies:
Alignment of MISO FTR time frames and product features with PJM complete.

Attachment C-2: **Alternative Border Pricing Point Calculations**

Objective: Allow participants to submit transactions based on physical flow effects on localized transactions.

Analysis TimeLine: **Attachment C-2**

Start :2007	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Assign team and create detailed project plan												
Develop alternative border pricing options and decide which options to study further.		1										
Perform a detailed study modeling the impact of alternative border pricing methodologies and assess each option to ensure that opportunities for gamming are not introduced. Estimate the cost and schedule to implement viable options.			2									
Review results with stakeholders and create a detailed implementation plan.				3								

Key Milestones:
(1) Alternative pricing options developed
(2) Modeling & Analysis Complete
(3) Go/No-go stakeholder decision

Critical Dependencies: none identified.

Attachment C-3: **Shared Regulation Market**

Objective: A larger market operated over both RTO footprints would result in more efficient procurement of the Regulation service by the RTOs.

Analysis TimeLine: **Attachment C-3**

Start :2007	2006				2007				2008			
Activity	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**
Assign team and create detailed project plan												
Develop and analyze options for implementing a combined regulation market and determine if implementation is feasible.						①						
Perform detailed study modeling the impact of shared regulation on market efficiency and reliability to benefits of implementation.												
Identify policies, procedures, application and systems which must be modified and determine costs to implement.							②					
Review results with stakeholders and make Go/No-go decision.								③				

Key Milestones:
(1) Joint agreement of feasibility of implementation.
(2) Completion of detailed cost and benefit analysis.
(3) Go/No-decision

Critical Dependencies:
▲ Control Area consolidation and reserve market issues in MISO must be resolved prior to implementing.

Attachment C-4: **Common Time Zones (Modify PJM Systems to EST)**

Objective: Midwest ISO's systems are currently on EST. PJM currently operates on EPT. The recommendation would be to move PJM's system to EST to align with the Midwest ISO system.

Analysis TimeLine: **Attachment C-4**

Start :2006	2006				2007				2008			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Assign team and create detailed project plan												
Identify PJM policies, procedures, applications and systems which must be modified to accommodate a time change.												
Determine the effort and cost required to conform to the timing requirements in the federal energy legislation and the incremental effort required to change to EST.												
Determine the effort required by stakeholders to modify their systems to accommodate a change.				◇1								
Review results with stakeholders and make Go/No-go decision.				◇2								

Key Milestones:
(1) Analysis complete
(2) Stakeholder decision.

Critical Dependencies: None Identified.

Attachment C-5: **Coordinated OASIS**

Objective: Link the two OASIS nodes, so there is a single logon (to two individual OASIS nodes).

Analysis TimeLine: **Attachment C-5**

Start :2006	2006				2007				2008			
Activity	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**	**Q 1**	**Q 2**	**Q 3**	**Q 4**
Assign team and create detailed project plan												
Develop and analyze options for implementing a coordinated OASIS and determine if implementation is feasible.		(1)										
Identify policies, procedures, application and systems which must be modified and determine costs to implement.			(2)									
Review results with stakeholders and make Go/No-go decision.			(3)									

Key Milestones:
(1) Determination of feasibility
(2) Cost analysis complete
(3) Stakeholder decision

Critical Dependencies: None identified.

ATTACHMENT D TO MIDWEST ISO/PJM
JOINT OCTOBER 31, 2005 FILING IN DOCKET ER04-375

Attachment D - No Action Initiatives

This attachment contains the JCM initiatives that do not have stakeholder support and/or cannot be justified under current conditions.

The cost-benefit attachment for a particular JCM initiative contains:

- The assumptions that were used in determining the benefits for the initiative.
- The forecasted costs to implement the initiative (spread across an assumed three year cost recovery period).
- Any on-going operating costs associated with implementation of the initiative (hardware and software licensing and/or maintenance fees).
- Market efficiency gains representing the overall market savings (estimated reduction in production cost used as a proxy) associated with the implementation of each initiative.
- Market participant savings representing estimated cost savings to market participant organizations associated with the implementation of each initiative. Market participant cost savings were split between reductions in staff time required to perform specific tasks and reductions in training costs associated with learning to use multiple processes, procedures and technologies.

Attachment D-1: **Standard Data Exchange (Web Services)**

Objective: Develop a standard architecture and mechanism for exchanging data between MISO and PJM and make it available to participants. This would apply to new exchanges of data and not to existing connections.

Cost-Benefit Analysis: **Attachment D-1**

Assumptions

- ✓ **Capture .75% of est. market efficiency gain**
- ✓ **20 hours/year in reduced training time**
- ✓ **Time savings of 30 min/day**
- ✓ **80 Participants**
- ✓ **$120,000/year FTE**

Cost/Benefit	2007	2008	2009	Total
Cost Recovery	($1,000,000)	($1,000,000)	($1,000,000)	($3,000,000)
On-going operating costs	($200,000)	($200,000)	($200,000)	($600,000)
Market Efficiency Benefit	$156,851	$156,851	$156,851	$470,554
Participant Staffing & Training Savings	$692,308	$692,308	$692,308	$2,076,923
Net Benefits	($350,841)	($350,841)	($350,841)	($1,052,523)

Attachment D-2: **Standard Data, Visualization & Reporting Portal**

Objective: Implementation of a single, redundant, data and report portal and supporting architecture with back-up capability shared between PJM and MISO.

Cost-Benefit Analysis: **Attachment D-2**

Assumptions:

- ✓ **Capture 1.0 % of est. market efficiency gain**
- ✓ **60 hours/year in reduced training time**
- ✓ **Additional Time savings of 45 minutes/day**
- ✓ **80 Participants**

Cost/Benefit	2006	2007	2008	Total
Cost Recovery	($2,833,333)	($2,833,333)	($2,833,333)	($8,500,000)
On-going operating costs	($500,000)	($500,000)	($500,000)	($1,500,000)
Market Efficiency Benefit	$209,135	$209,135	$209,135	$627,405
Participant Staffing & Training Savings	$1,176,923	$1,176,923	$1,176,923	$3,530,769
Net Benefits	($1,947,275)	($1,947,275)	($1,947,275)	($5,841,825)

Attachment D-3: **Single OASIS**

Objective: A customer facing front end that masks the existence of the individual PJM Midwest ISO OASIS systems.

Cost-Benefit Analysis: **Attachment D-3**

Assumptions:

- ✓ **Capture 7% of est. market efficiency gain**
- ✓ **20 hours/year in reduced training time**
- ✓ **Additional Time savings of 25 minutes/day**
- ✓ **80 Participants**

Cost/Benefit	2006	2007	2008	Total
Cost Recovery	($2,666,667)	($2,666,667)	($2,666,667)	($8,000,000)
On-going operating costs	($500,000)	($500,000)	($500,000)	($1,500,000)
Market Efficiency Benefit	$1,463,936	$1,463,936	$1,463,936	$4,391,837
Participant Staffing & Training Savings	$592,308	$592,308	$592,308	$1,776,923
Net Benefits	($1,110,413)	($1,110,413)	($1,110,413)	($3,331,240)

Attachment D-4: **Market Portal /Single Market Implementation**

Objective: Implementation of a Single Market. The implementation consists of three initiatives: Year 1 – Rule Alignment and Market Portal Design, Year 2 – Initial Market Portal Implementation and Years 3-5 – Implementation of Single Market.

Cost-Benefit Analysis: **Attachment D-4**

Assumptions:

- ✓ **Capture 100 % of est. market efficiency gain**
- ✓ **80 hours/year in reduced training time**
- ✓ **Additional Time savings of 60 minutes/day**
- ✓ **80 Participants**

Cost/Benefit	2011	2012	2013	Total
Cost Recovery	($35,000,000)	($35,000,000)	($35,000,000)	($105,000,000)
On-going operating costs	($7,000,000)	($7,000,000)	($7,000,000)	($21,000,000)
Market Efficiency Benefit	$20,900,000	$20,900,000	$20,900,000	$62,700,000
Participant Staffing & Training Savings	$1,600,000	$1,600,000	$1,600,000	$4,800,000
Net Benefits	($19,500,000)	($19,500,000)	($19,500,000)	($58,500,000)