



ATSI Integration Stakeholder Meeting

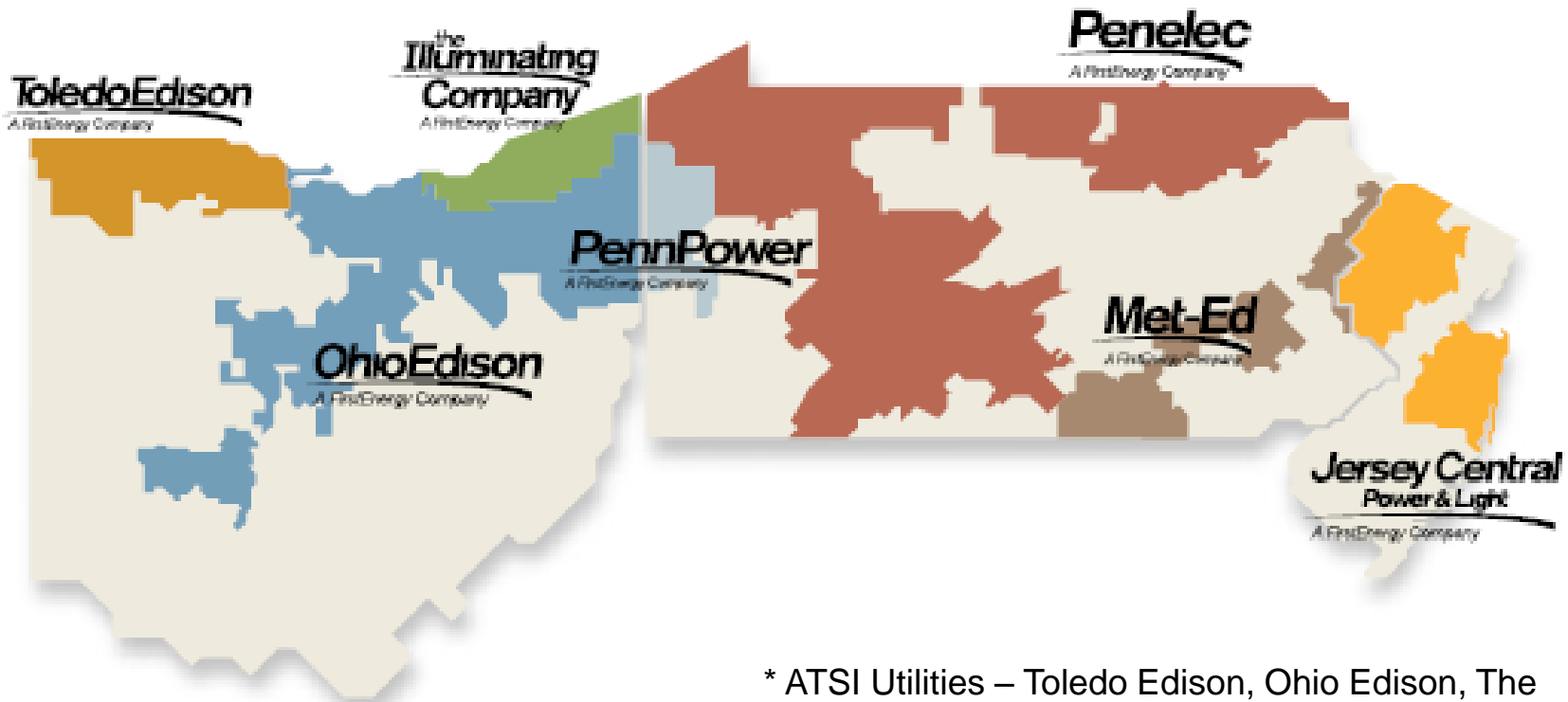
Columbus, OH
Philadelphia, PA
10/02/2009

- Introductions and Welcome
- ATSI Integration Overview
- RPM Transition
- FTR Transition
- Transmission Service Conversion
- RTEP Transition
- Training/Participant Readiness

- Operations Integration
- Regulatory/ Legal Activities
- Generator Interconnection Process
- PJM Demand Response Programs
- Other Questions and Concerns

ATSI Integration Overview

ATSI Utilities* to integrate into PJM operations on June 1, 2011

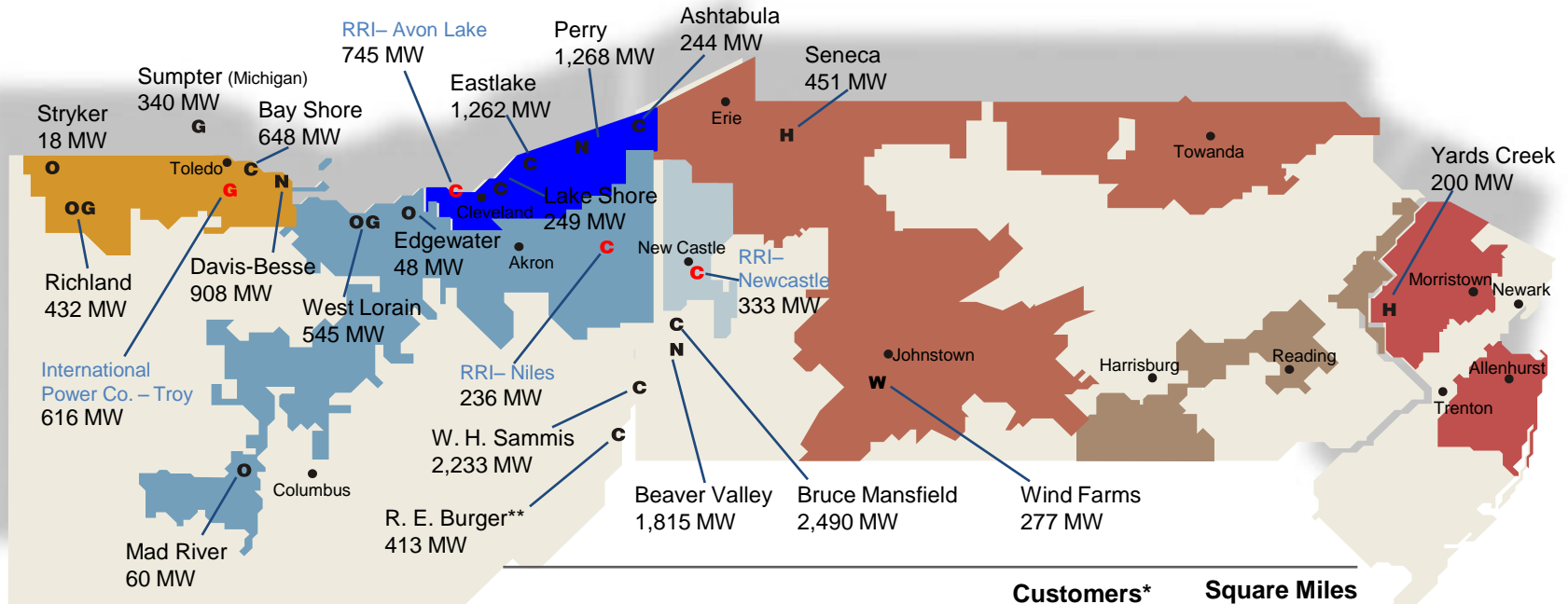


* ATSI Utilities – Toledo Edison, Ohio Edison, The Illuminating Company, and PennPower

FirstEnergy Corporate Profile

- **Diversified energy company headquartered in Akron, Ohio**
- **Involved in generation, transmission and distribution of electricity, as well as other energy-related services**
- **Fifth largest investor-owned electric system in U.S.**
 - 4.5 million customers in Ohio, Pennsylvania and New Jersey
 - Diversified customer base
- **Controls more than 14,300 MW of generating capacity**
 - 39% nuclear; 61% fossil/other (2008 output MWh)
- **Approx. \$14B in annual revenues and more than \$33B in assets**
- **Approx. \$12B market capitalization**
- **Investment grade credit ratings**





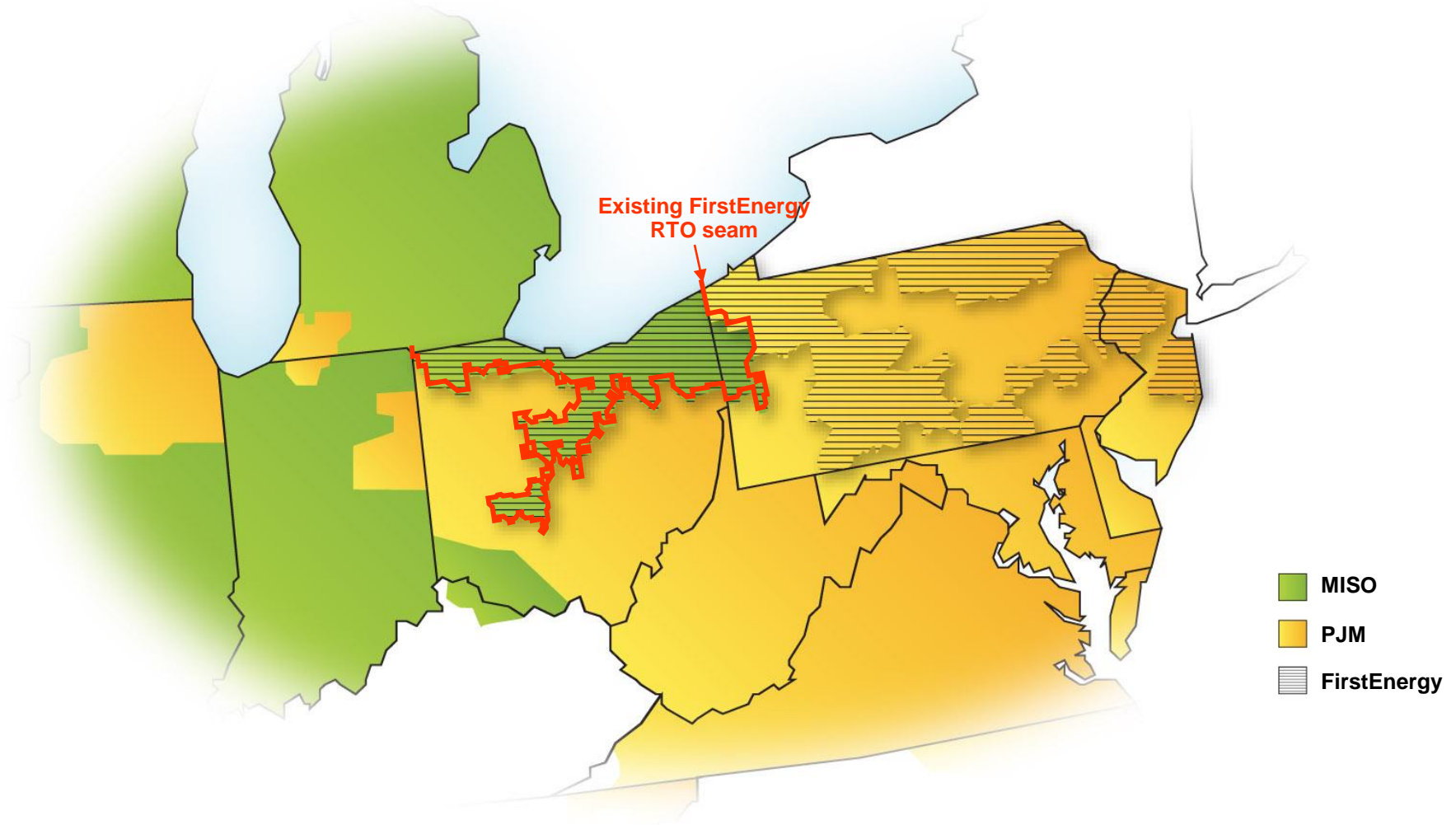
FirstEnergy Power Sources

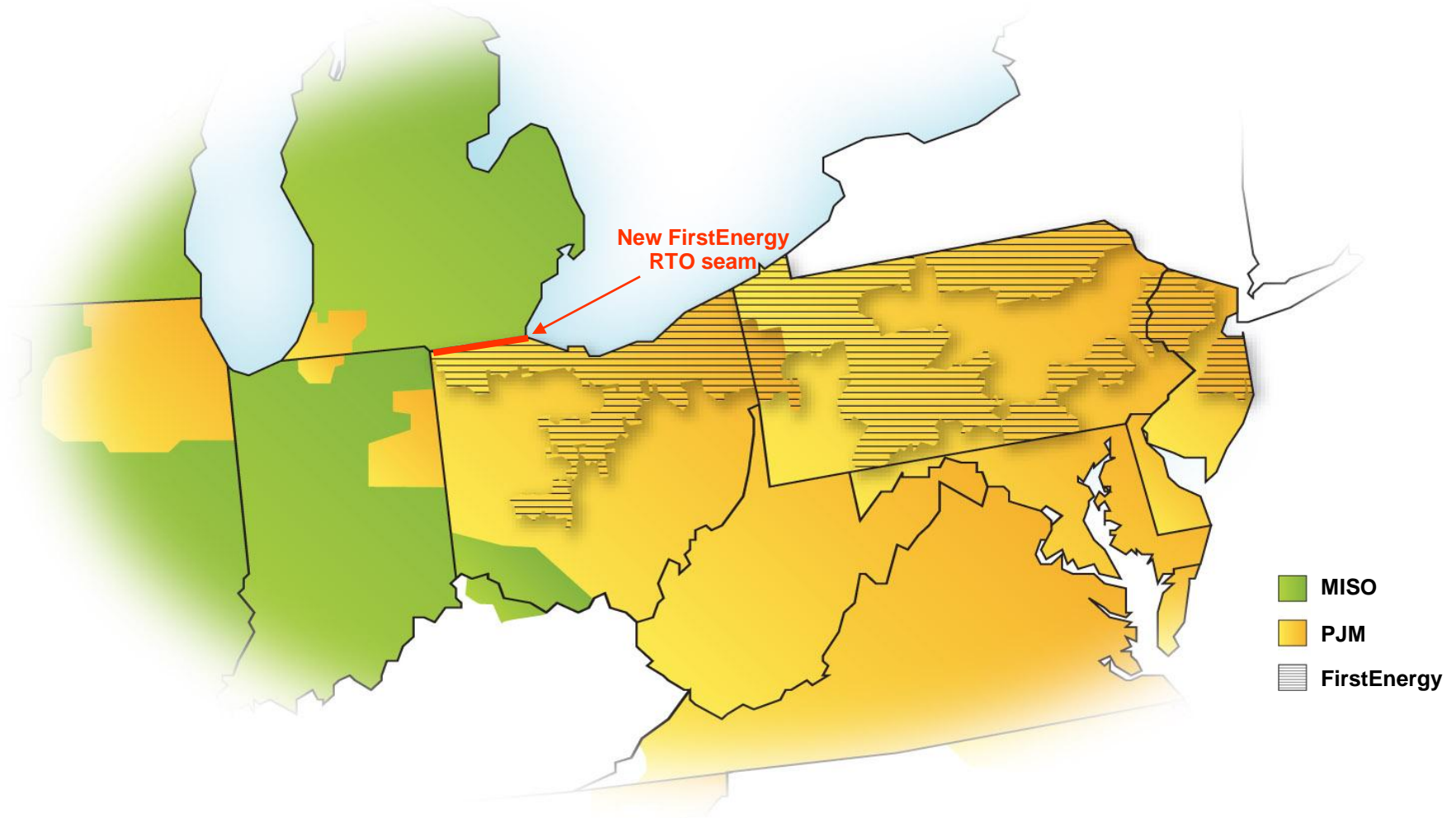
- C** Coal
- G** Gas
- H** Hydro
- N** Nuclear
- O** Oil
- W** Contracted Wind (277 MW in PA, 99 MW in IL)
- C/G** Contracts with RRI Energy and International Power Co.

	Customers*	Square Miles
Toledo Edison	312,000	2,300
Ohio Edison	1,040,000	7,000
The Illuminating Company	755,000	1,600
Penelec	590,000	17,600
Penn Power	160,000	1,100
Met-Ed	549,000	3,300
Jersey Central Power & Light	1,093,000	3,200
Total	4,499,000	36,100

* As of Dec. 31, 2008

** Conversion to Biomass expected by Dec. 2012





October 2009 – IRM Study and
Generator deliverability tests completed

A large, light blue downward-pointing arrow with a white outline, indicating a chronological flow from the first event to the second.

January 2010 - Load deliverability
tests completed

A large, light blue downward-pointing arrow with a white outline, indicating a chronological flow from the second event to the third.

**May 2010 RPM Base Residual
Auction** - CETO/CETLs for the ATSI
Load Deliverability Area provided

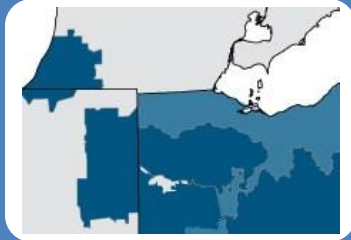
December 2009 – FERC approval of FRR auction plan

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March 2010 – FRR auctions for 2011-2012 and 2012-2013 delivery years completed

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May 2010 – RPM Base Residual Auction for 2013-2014 delivery year completed.



PJM EMS Model to be expanded to include all of the ATSI Utilities and more of MISO in Michigan



All transmission and generator outages submitted into eDART to support the outage planning process



All transmission operators and generator operators to become PJM-certified

August 14, 2009

ATSI and PJM
have executed
an integration
agreement

August 17, 2009

ATSI
submitted
filing to
FERC

December 2009

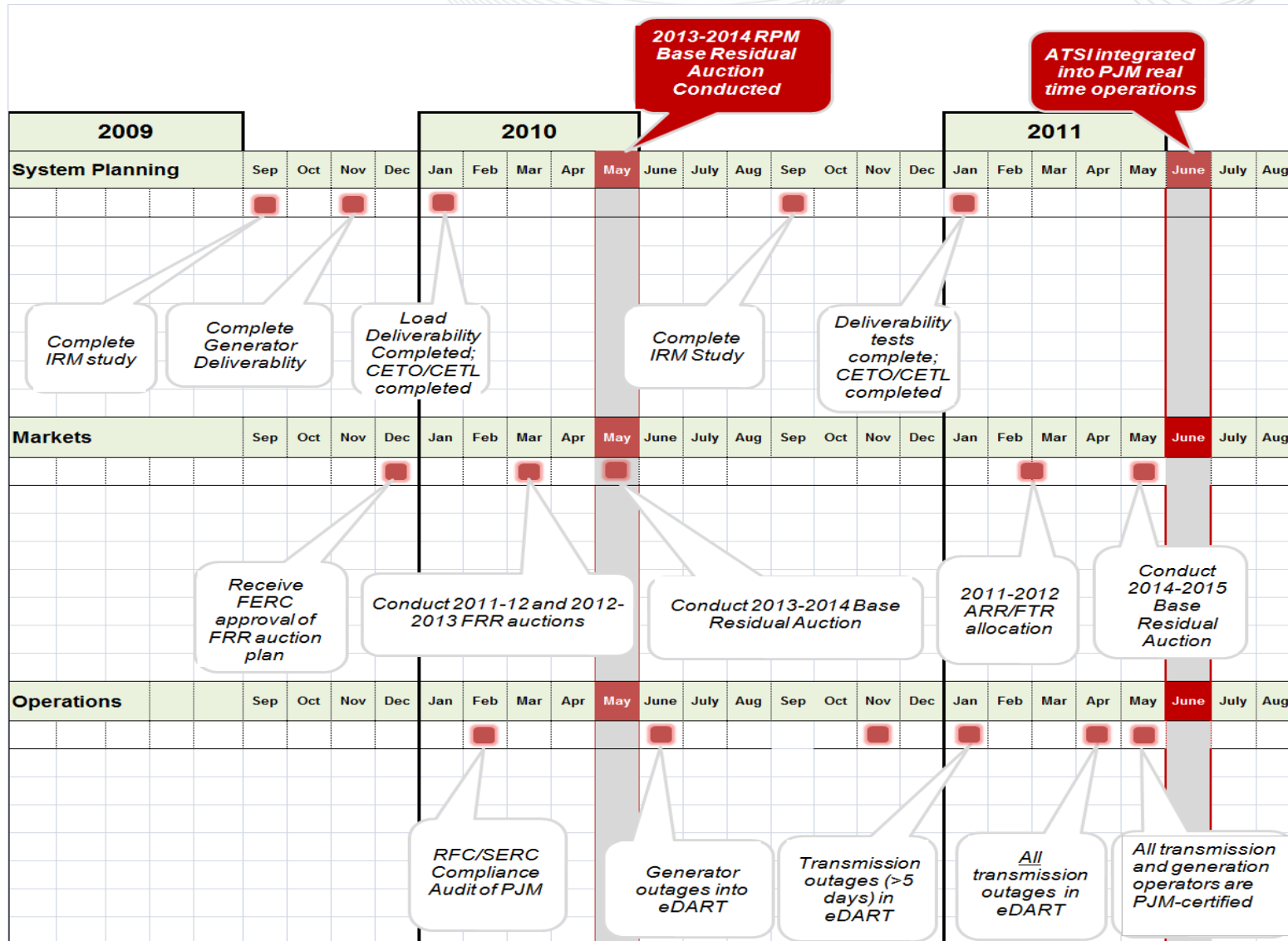
ATSI
requested
FERC
filing
approval

Later

Additional
FERC filings
in support of
ATSI
integration

Estimated Integration Costs

	Est. Expense	Est. Capital
Operations	\$1,100,000	\$1,200,000
Markets	\$700,000	\$450,000
Planning	\$100,000	\$600,000
IT Infrastructure	\$400,000	\$500,000
Compliance/Transm Service Conversion	\$400,000	\$250,000
Miscellaneous	\$500,000	
Project Management	\$1,500,000	
Training	\$300,000	
TOTAL	\$5,000,000	\$3,000,000



RPM Transition

- ATSI zone integration into PJM on June 1, 2011, start of 2011/12 Delivery Year
- FirstEnergy to submit out-of-time FRR Capacity Plans for 2011/12 DY and 2012/13 DY
 - RPM Auctions for 2011/12 DY and 2012/13 DY conducted in May 2008 and May 2009, respectively
- Capacity procured for ATSI zone through regular RPM schedule for 2013/14 DY
 - RPM Auction for 2013/2014 DY to be conducted in May 2010

2011/2012 DY

Out-of-Time FRR
Capacity Plan

Special Integration
Auction

2012/2013 DY

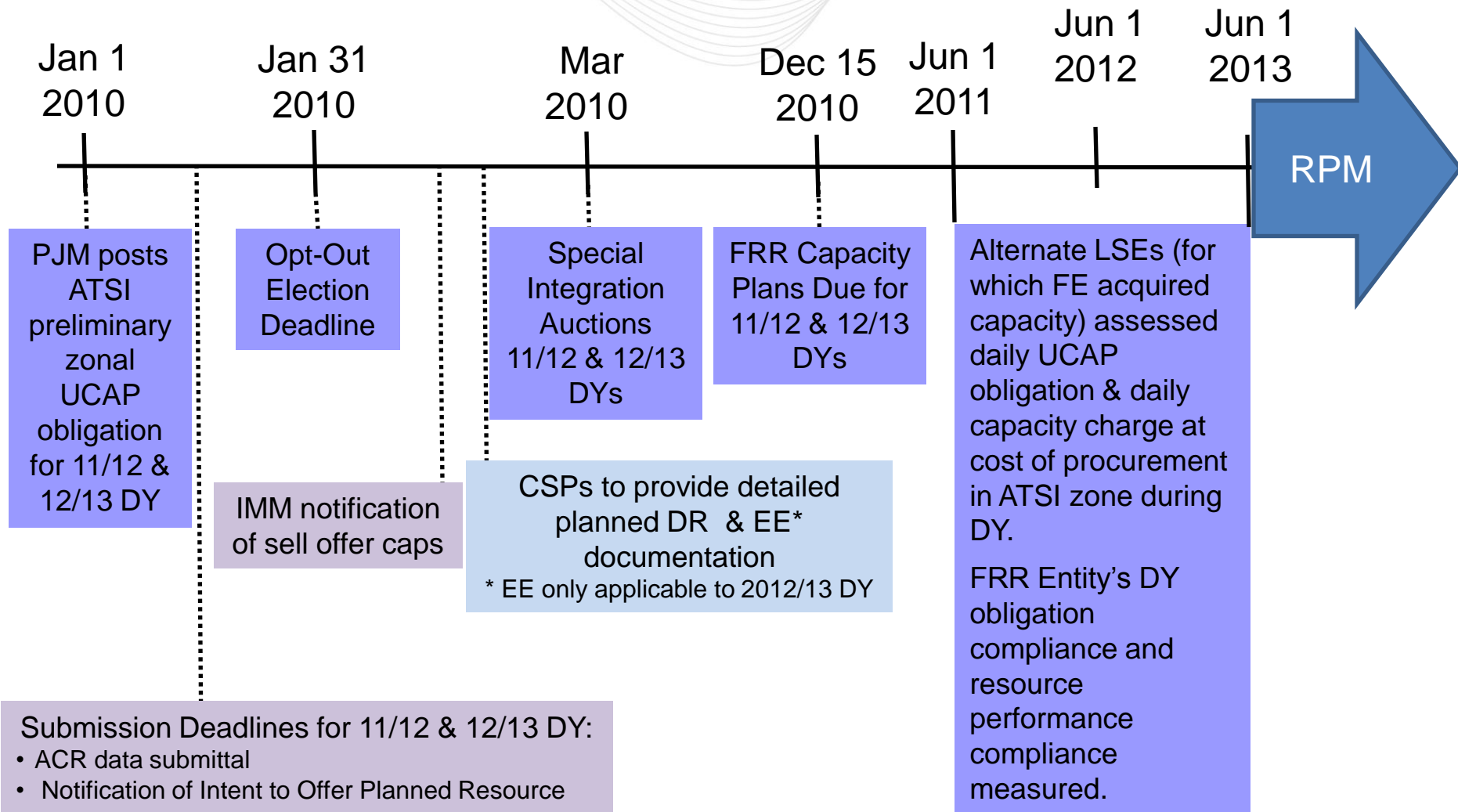
Out-of-
Time FRR
Capacity
Plan

Special
Integration
Auction

2013/2014 DY & beyond

ATSI Zonal
Load
considered
in RPM
Auctions

Transition Timeline 2011/12 & 2012/13 Delivery Years



- ATSI Utilities to submit out-of-time FRR Capacity Plans for each DY by December 15, 2010
- ATSI Utilities FRR plans must commit enough capacity to cover the UCAP obligation for the entire ATSI zone minus “opt-out” load
- Capacity to be procured through special integration auctions
 - If special integration auctions do not procure sufficient capacity to meet obligation then ATSI Utilities to procure balance through bilateral arrangements
- ATSI Utilities FRR capacity made available to LSEs in ATSI zone at auction clearing price (adjusted, if necessary, for cost of bilateral contract procurement)

- Two Special Integration Auctions, one for each DY, to be conducted in March 2010
- Special Integration Auctions for 11/12 & 12/13 DY to be conducted at the same time
- Sell Offers submitted via eRPM system by suppliers with available capacity will establish supply curve
- Vertical Demand Curve based on the remaining amount of zonal UCAP obligation (after any opt-out load is removed)

- LSEs that qualify and choose to model their load as a separate area in ATSI zone must provide a written notification of such election to FE no later than January 31, 2010.
 - Such LSEs will be considered an FRR Entity and their load will be removed from Special Integration Auction.
- Alternate LSEs in the ATSI zone that are not serving the entire load for a modeled area in the ATSI zone also may “opt-out” and have their load removed from Special Integration Auctions.
 - Such Opt-Out Alternate LSEs must provide written notification of such election to FE no later than January 31, 2010.
 - Opt-Out Alternate LSEs will be required to transfer unit-specific capacity bilaterally to FE for the 11/12 & 12/13 DYs in order for FE to commit such capacity in their FRR Capacity Plans.

- Preliminary Zonal UCAP Obligation based on Preliminary Zonal Peak Load Forecast and Forecast Pool Requirement (FPR)
 - 11/12 DY FPR = 1.0833
 - 12/13 DY FPR = 1.0872
- Preliminary Zonal UCAP Obligation for each DY to be posted by January 1, 2010
- Final Zonal UCAP Obligation based on Final Zonal Peak Load Forecast and updated IRM/FPR (for 12/13 DY).
- Final Zonal UCAP Obligation posted January 2011 for 11/12 DY and January 2012 for 12/13 DY

May be conducted at any time prior to DY

Feb 1 2010 Mar 2010 Apr 2010 May 2010 Sept* 2011 Jul* 2012 Feb 2013 Jun 1 2013 May 31 2014

PJM posts planning parameters for 13/14 DY BRA

Base Residual Auction

IMM notification of sell offer caps

1st Incremental Auction

2nd Incremental Auction

3rd Incremental Auction

LSEs assessed daily UCAP obligation & daily Locational Reliability Charge under RPM

Resource Provider's DY resource performance compliance measured.

Conditional Incremental Auction

Submission Deadlines for 13/14 DY:
• ACR data submittal
• Notification of Intent to Offer Planned Resource

CSPs to provide detailed planned DR & EE documentation

** CMEC proposal to change 1st IA from June to Sept and 2nd IA from April to July.*

FTR Transition

- MISO and PJM Comparison
- Integration Alternatives
- Schedule and Training

Comparison of MISO and PJM ARR/FTR

	MISO	PJM
Planning Period	June thru May	June thru May
Annual ARR Allocation	Seasonal	Annual only
	Value based on Annual Auction Clearing prices	Value based on Annual Auction Clearing prices
	OnPeak or OffPeak	24H only
	Stage 1A nominations to Base load	Stage 1A nominations to Base load
	Restoration	No Restoration
	Stage 1B nominations to Peak Load	Stage 1B nominations to Peak Load
	Stage 2 is automatic distribution of excess revenue from Annual Auction	Stage 2 is a three round nomination period for ARR paths. Source can be to any Generator, Interface, Zone, and Hub. Sink is Load zone.
Annual FTR Auction	Seasonal	Annual only
	Obligations	Obligations and Options
	OnPeak or OffPeak	OnPeak, OffPeak, or 24H
	Self Scheduling available	Self Scheduling available
Monthly Auctions	Obligations	Obligations and Options
	OnPeak or OffPeak	OnPeak, OffPeak, or 24H
	Prompt month period	Any of next three months or full quarter remaining in planning period
Long Term Auction	No Long Term Auction	FTRs available for any of next three planning periods not including current planning period. Three rounds conducted in June, September, and December.
Load Shifting	ARRs shift as Load shifts	ARRs and directly allocated FTRs for new zones shift as load shifts
FTR Credit Requirements	Yes	Yes

Alternative 1: ATSI integration is definitive before Annual Process*

- ARR nominations in March 2011 for ARRs effective 6/1/11 thru 5/31/12
- ARRs available in Stage 1A, 1B, and 2
 - Stage 1A and 1B available source points only at historical resources
 - Stage 2 available source points to any generator, interface, zone, or hub
- LSEs in newly integrated zone(s) may elect to receive a direct allocation of FTRs for up to two allocations following their integration [Section 5.2.2 paragraph (e) of the PJM Operating Agreement]
 - Self Scheduling not available for LSEs that elect this option. Directly allocated FTRs shift as load shifts.
 - Available for 2011/12 and 2012/13 planning periods
- FTR Annual Auction available points include ATSI zone and generators.

*ATSI integration is considered definitive if there is FERC approval and no outstanding disputes/issues/open items.

Alternative 2: ATSI integration is not definitive before Annual Process*

- ARR nominations in May 2011 for ARRs effective 6/1/11 thru 5/31/12
- ARRs available in Stage 1A, 1B, and 2
 - Stage 1A and 1B available source points only at historical resources
 - Stage 2 available source points to any generator, interface, zone, or hub
- LSEs in newly integrated zone(s) may elect to receive a direct allocation of FTRs for up to two allocations following their integration [Section 5.2.2 paragraph (e) of the PJM Operating Agreement]
 - Self Scheduling not available for LSEs that elect this option. Directly allocated FTRs shift as load shifts.
 - Available for 2011/12 and 2012/13 planning periods
- FTR Annual Auction available points do not include ATSI zone and generators.
 - ATSI participants may still participate in Annual FTR Auction and any awards will be binding regardless of integration

*ATSI integration is considered definitive if there is FERC approval and no outstanding disputes/issues/open items.

ARR Historical Resource List

- Historical Resource List to be used for Stage 1 allocation will be same list used in MISO

Possible Special FTR Allocation

- A Special FTR Allocation will be conducted for the ATSI zone if the integration date is not on the first of June.
- Special FTR Allocation will cover the period of time between the implementation of the ATSI zone and the next Annual ARR Allocation in which the ATSI zone actually integrates into PJM.

Monthly and Long Term FTR auctions

- ATSI points will be available for the June 2011 Monthly FTR Auction only if integration is definitive before annual process.
- ATSI points will be available for the 2012/15 Long Term Auction which opens June of 2011.

FTR Schedule and Training

- Annual ARR allocation conducted in March/April 2011.
 - Annual FTR Auction conducted in April/May 2011.
 - June Monthly FTR Balancing of Planning Period Auction conducted in May 2011.
 - Long Term Auction conducted in June 2011.

 - Annual FTR Training will be available in late 2010 and/or early 2011.
- Annual FTR training presentation located on main FTR page at below link.

<http://www.pjm.com/markets-and-operations/~media/markets-ops/ftr/2009-annual-ftr-auction-training.ashx>

Questions ?

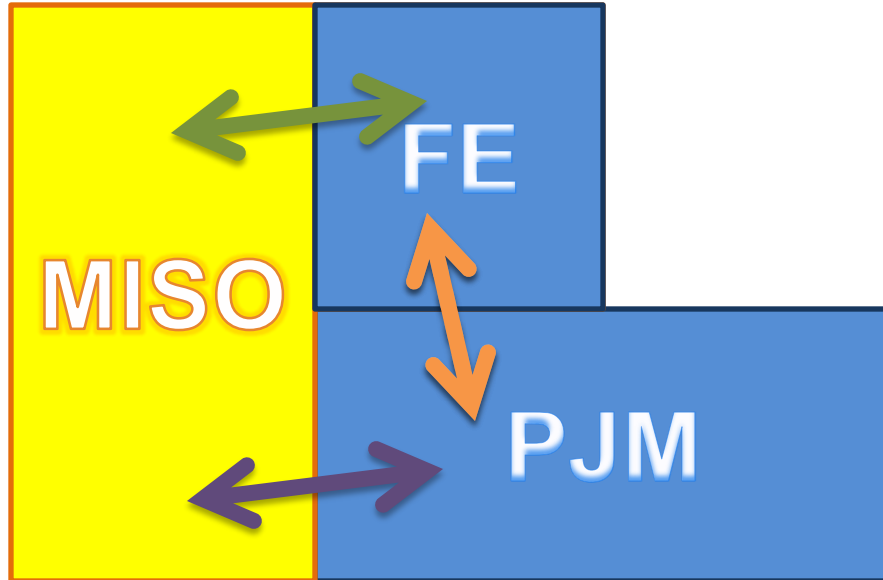


Transmission Service & Congestion Management

OASIS Hotline
(610) 666-8972
oasisadmin@pjm.com

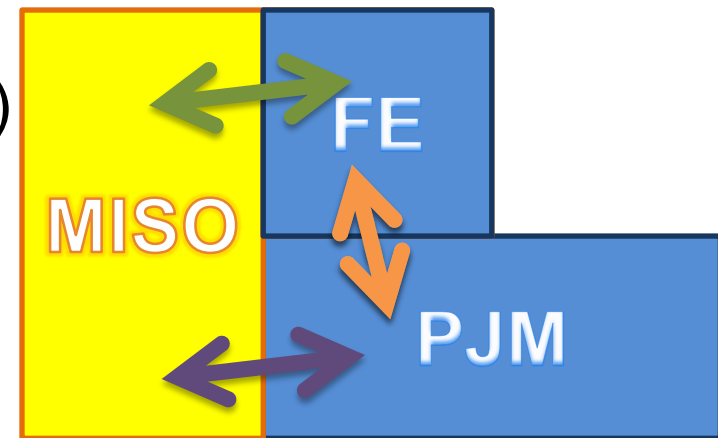
- Affects Market to Market coordination and TLR
- May be new and/or removed flowgates
- Flowgate ownership changes
- The same IDC case and historic date is used

6/1/2011



- Existing **FE/PJM** service becomes **internal (no reservation)**
- **MISO-FE** internal becomes **MISO/PJM**
- Other **MISO/PJM** service is unaffected
- Available service (ATC) may change

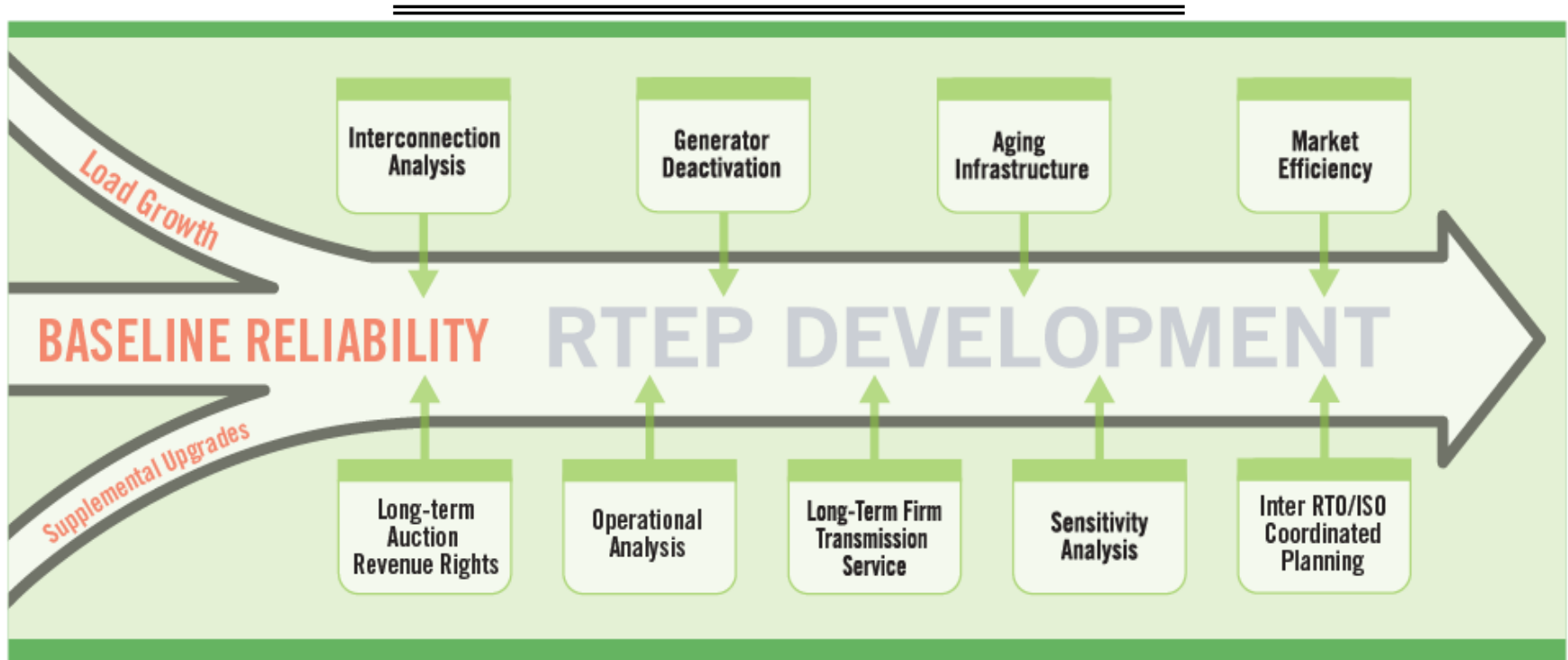
- MISO evaluates MISO-FE paths until 6/1/2011
 - Automatic conversion of TSRs and network resources
- Model change affects ATC
 - Simultaneous window (shotgun) approach for increase in short-term service
 - Impacts will be considered in long-term service requests



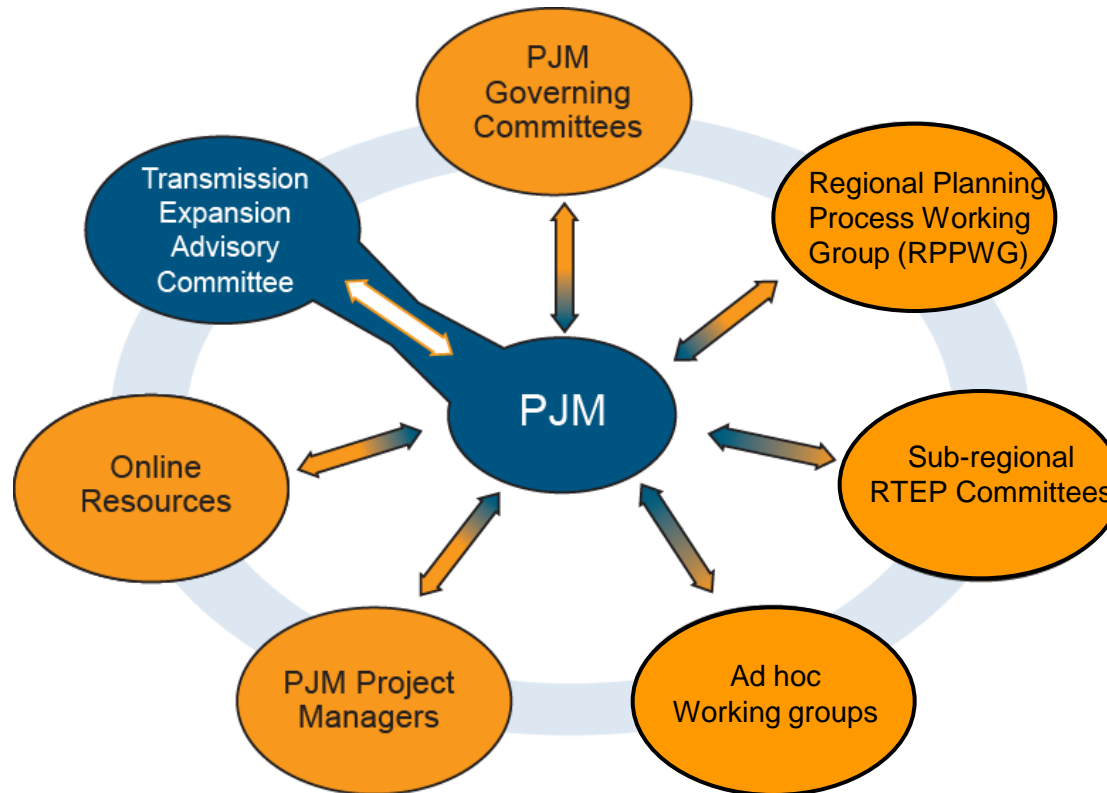


Regional Transmission Expansion Plan (RTEP)

- ❖ Ongoing and cyclical
- ❖ 15 year planning horizon
- ❖ RTEP issued each year
- ❖ Baseline analysis
- ❖ Interconnection analysis
- ❖ Coordinated planning w/ adjacent areas



- ❖ Open
- ❖ Transparent
- ❖ Collaborative
- ❖ Topics...process, plans, FERC compliance, implementation issues...etc



Transmission Expansion Advisory Committee (TEAC)

- ❖ Input on scope and assumptions of RTEP analyses
- ❖ Review & comment on results to date and planned upgrades
- ❖ Provide comments and recommendations to the PJM Board or as requested by the PJM Board itself
- ❖ No TEAC RTEP approval authority; that rests with the BOM

- ❖ Near term effort will be in support of upcoming RPM activities
- ❖ Installed Reserve Margin (IRM)
- ❖ Generation deliverability testing
 - Test the resources within the ATSI zone to confirm that they are deliverable to the aggregate of the PJM.
- ❖ Load Deliverability – January 2010 for May RPM auction

- ❖ 2010 RTEP will model the ATSI zone as part of PJM for planning years starting with 2011
- ❖ PJM staff will develop load forecasts for the ATSI zone starting with the PJM 2010 Load Forecast Report (issued January 2010).
- ❖ Interconnection queue coordination
- ❖ Resources:
 - <http://www.pjm.com/planning.aspx>
 - Manual 14B – PJM Region Transmission Planning Process
<http://www.pjm.com/documents/~media/documents/manuals/m14b.ashx>

Participant Readiness Activities

The participant readiness effort focuses on preparing companies impacted by the ATSI integration for participation in PJM's markets

The objectives of this effort are:

- Provide new customers with a central point of contact (Client Manager)
- Provide materials to inform and educate new customers about PJM requirements
- Provide and define criteria that promotes new customer readiness
- Provide checkpoints to facilitate the provision of necessary information to PJM

The integration project team is actively working to identify and contact companies who will be impacted by the ATSI Market Integration.

- PJM Client Managers will be contacting impacted companies to discuss the type of activity they will conduct in PJM and understand questions and concerns
- Client Managers will provide a checklist to help new customers identify integration readiness tasks and data required by PJM

The central tool to the readiness process is the Checklist, which contains a list of base requirements that PJM has identified as central to a successful integration.



Each checklist contains a breakdown of readiness topics, including:

- Administrative Tasks (e.g. membership)
- Education (e.g. PJM process and application training)
- Data Submission (e.g. generator data, meter data)
- Application Changes (e.g. scheduling system changes)
- Technical Changes (e.g. connectivity, XML submission)

A generic checklist has been created for six general participant types. Each checklist contains comprehensive information on tasks required and capabilities needed to integrate with PJM.

List have been created for:

- LSEs
- Marketers
- Municipalities
- Generators
- Transmission Owners
- Demand Resources

Participant Readiness Checklists		
Activity	Sub-activity	Action(s)
Load Serving Entities (LSEs)		
Administrative	Membership and Agreements (Level 1)	<p>The following is a list of PJM membership requirements:</p> <ul style="list-style-type: none"> ? Become a member of PJM ? Sign the PJM Reliability Assurance Agreement (RAA) ? Submit Network Transmission Service Agreement for Retail Load Serving Entities ? Reviewed OATT ? Meet your daily unforced capacity obligation or be subject to deficiency charges ? Sign a Transmission Service Enabling Agreement ? Sign s Service agreement for Firm and/or Non-Firm Point-to-Point Transmission Service ? Complete the credit application <p>Applications: The appropriate resources within your organization have learned how to:</p> <ul style="list-style-type: none"> ? Obtain User IDs/Passwords for required users of each PJM application ? Account Managers and users have learned how to use CAM
		<p>Business Procedures: The appropriate resources within your organization have:</p> <ul style="list-style-type: none"> ? Obtained an understanding of PJMs scheduling process for generation and load ? Obtained an understanding of the PJM Network Model ? Obtained an understanding of LMP and LMP Pricing Mechanisms including pricing hubs and other aggregates

The Readiness Checklist will be quantified to facilitate the assessment of Participant Readiness.

Each section of the checklist is broken into levels of readiness:



- **Level One** – Required criteria for successful implementation
- **Level Two** – Meeting this criteria will improve the success of the integration
- **Level Three** – Meeting this criteria will enhance the integration

- Client Managers will conduct an initial meeting with primary contacts from each company (Reps) to review and update a Readiness Checklist.
- Client Managers and Reps will work together to modify the checklist to meet the specific needs of the participant.
- Reps and Client Managers will speak on a regular basis to determine status of readiness tasks.
- The status process will also help PJM to identify key issues and mitigate risks on a week-to-week basis.
- Status will be reported throughout the readiness process to the individual participant and the PJM RTO Integration team.
- *The Rep can use the checklist as one tool for communicating status internally.*

There are several resources companies can use to prepare to integrate into PJM.

- Market Integration Website
 - (<http://www.pjm.com/markets-and-operations/atsi-integration.aspx>)
 - White papers
 - FAQs
 - Market Integration Updates
 - New Member Readiness Guide
- PJM Manuals (www.pjm.com)
- Committees and Working Groups
- Training Sessions
- Market Trials (Apr – May 2011)

Client Managers:

Jim Kirby: 610-666-8872 kirbyjw@pjm.com

Glenn Weiss: 610-666-8855 weissgc@pjm.com

Customer Relations Hotline

866-400-8980 custsvc@pjm.com

Stakeholder Training

- A series of training programs will be held within the ATSI footprint to prepare stakeholders for integration
 - Tentatively targeted for Aug 2010 – March 2011
 - Cleveland, Akron and Columbus locations
- Additional training sessions will be available in other parts of the PJM footprint, as well as online
- Training is targeted towards three main groups of stakeholders:
 - Transmission: owners, operators and engineering support staff
 - Generation: owners, operators, schedulers, power marketers, traders
 - Load serving entities

- All local control center (LCC) operators must be PJM certified prior to integration
- LCC program is designed to
 - Orient participants to the working knowledge needed to operate on the PJM transmission system
 - Help prepare operators for PJM certification exam
- LCC program qualifies for NERC Continuing Education Hours

- LCC program topics include:
 - Markets Overview
 - Transmission Outage Scheduling
 - Transmission Operating Criteria and Limits
 - Emergency Procedures
 - System Restoration
 - Communications
 - eDART

- All generation operators must be PJM certified within 1 year of integration
 - Must work under direct supervision of PJM certified operator prior to certification
- Market Operations Center (MOC) program is designed to
 - Provide a basic level of knowledge on topics critical to gen dispatch in PJM
 - Help prepare gen operators for PJM certification exam
 - Prepare traders and schedulers for participation in PJM markets
- MOC program qualifies for NERC Continuing Education Hours

- MOC program topics include:
 - Locational Marginal Price
 - Generation Outage Scheduling
 - Generation Control
 - Scheduling Process for Generation
 - Ancillary Service Markets
 - Transactions
 - Emergency Procedures
 - System Restoration
 - Market Settlements
 - Applicable eTools
 - eDART, eDATA, eMKT, eSchedules, OASIS, EES

- Transmission and Generation Operators must also meet PJM training requirements
 - Complete LCC/MOC or Interconnection Training Program (ITP) program within 1 year of integration
 - New operators must complete ITP program within 2 years of integration
 - Defined as operator with less than 2 years of prior experience participating in real time operations before assignment of PJM real time duties
 - ITP program is offered each fall and winter in the area of PJM's campus

- Program designed to provide Load Serving Entities and Marketers with the information necessary to conduct business in PJM
 - Topics include:
 - Locational Marginal Price
 - Financial Transmission Rights
 - Energy Transactions
 - Capacity Obligations and RPM
 - Two-Settlement (Demand Perspective)
 - Market Settlements
 - Applicable eTools
 - eMKT, eFTR, OASIS, EES, eSchedules, eRPM
 - Market Examples

- **Reliability Pricing Model**
 - Introduces participants to RPM and covers demand and supply in RPM, RPM auctions, LSE obligations, resource performance assessments and settlements
 - Special attention focused on detail of special integration auctions

- **Market Settlements 301**
 - Provides details of the market settlements process and the components of a typical PJM invoice. The program describes the various possible charges and credits and review examples on spot market interchange calculations.

- **PJM 101**
 - Introduces participants to PJM's markets and operations models. Includes presentations on the PJM markets and system operations, as well as market settlements, capacity and transmission expansion planning.
- **Locational Marginal Pricing 101**
 - Covers definition of LMP, 5-bus model examples, LMP verification & posting process
- **Follow-up one-on-one training, as necessary**
- **Other regularly scheduled training**
 - Includes FTR/ARR annual training, eLRS
 - PJM Training web page: <http://www.pjm.com/training.aspx>