

**Seams Issues Matrix**  
(Limited to potential business practice issues)

Orig #	1ST Sub-Category		2ND Sub-Category		Description of Seam Issue			Comments			Resp Org			Priority	Currently Being Addressed	Submitter
	Category	Sub-Category	Sub-Category	Sub-Category	Issue	WEQ EC	Type	JIC	Issue	Type	JIC	Issue	Type			
36	Congestion Management	Congestion Management Market Coordination	Coordinate Hedging Instruments at Market Interfaces	Market Interfaces	Coordination of market based congestion hedging instruments, such as FTRs, between adjacent RTOs with markets, especially for out and thru' transactions	NAESB	NAESB	National	Undecided	1					Raj Rana - AEP	
35	Congestion Management	Congestion Management Market Coordination	Standardize Prices at Market Interfaces	Market Interfaces	Locational Marginal Prices (LMP) at borders of RTOs with markets (Price cap included)	NAESB	NAESB	National	Undecided	1					Raj Rana - AEP	
138	Congestion Management	Congestion Management Market Coordination			Coordination of congestion	NAESB	NAESB	National	NAESB	1	Yes				Karl Tammar - ISORTO Council	
9	Congestion Management	Standardize and Coordinate ATC Calculations and Postings			Transmission Calculations	NAESB	NAESB	National	Undecided	3	Yes - SSG - WI				Steven Cobb - SRP	
113	Market Design	Green Power Market			Green power attributes trading	NAESB	NAESB	National	Undecided	3					Jeff Mueller (PSEG), and Andy Rodriguez (PJM)	
16	Market Design	Transmission Ancillary Service Market Design and Coordination	Reactive Power Compensation		Compensation for Reactive Power	NAESB	NAESB	National	Undecided	3					Mark Lively - Lively Utility	
13	Market Design	Unscheduled/Parallel Path Flow Management	Compensation for Unscheduled/Parallel Path Flow		Compensation for Unscheduled Flows of Electricity	NAESB	NAESB	National	Undecided	2	Yes / IIPTF				Mark Lively - Lively Utility	
15	Market Design	Unscheduled/Parallel Path Flow Management	Compensation for Unscheduled/Parallel Path Flow		Compensation for Loop Flow	NAESB	NAESB	National	Undecided	2	Yes / IIPTF				Mark Lively - Lively Utility	
29	Market Design	Unscheduled/Parallel Path Flow Management	Compensation for Unscheduled/Parallel Path Flow		Allocation of transmission capacity on reciprocal flow gates amounts to transmission service without compensation. Legitimizes "parallel loop flow".	NAESB	NAESB	National	Undecided	3					Dave Nick - DTE Energy	
134	Market Design	Unscheduled/Parallel Path Flow Management	Compensation for Unscheduled/Parallel Path Flow		Compensation for parallel flows	NAESB	NAESB	National	NAESB	3					Jeff Mueller (PSEG), and Andy Rodriguez (PJM)	
142	Market Design	Unscheduled/Parallel Path Flow Management	Compensation for Unscheduled/Parallel Path Flow		Pricing for native load loop flow impacts	Multiple	Multiple	Regional	Multiple	3	No				Ed Davis - Entergy	

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	Category	Sub-Category	Category	Sub-Category	Market Oversight	Market Monitoring/Requirements	Energy Market Standard Product Definitions	Energy Market Standard Product Definitions	Energy Market Standard Product Definitions	Energy Market Standard Product Definitions	Energy Market Standard Product Definitions	Energy Market Standard Product Definitions	Energy Market Standard Product Definitions			
11	Market Monitoring/Compliance	Market Monitoring/Requirements			Market Oversight					New and mature markets need oversight to ensure that existing rules are complied with and new rules are adequate in meeting the scenarios they were designed to govern. Solution: Independent Market Auditor or Monitor.	Multiple	Multiple	3	Yes - SSG - WI	Steven Cobb - SRP	
3	Market Standards	Energy Market Standard Product Definitions			Definition & treatment of Firm/nonfirm Power					Annual Plan item 4ci moved from MOS	NAESB	Undecided	3	No	Lou Oberski - Dominion Energy	
10	Market Standards	Energy Market Standard Product Definitions			Energy Products					Entities have disagreements concerning the definitions of various energy products. Solution: Standardized Energy Products.	NAESB	NAESB	3	Yes - WECC	Steven Cobb - SRP	
25	Market Standards	Energy Market Standard Product Definitions			Need for common physical market and products - regional variations permitted						NAESB	NAESB	3	No	Linda Horn - WE Energies	
34	Market Standards	Energy Market Standard Product Definitions			Clarification of Product Definitions					Complete/Standard definitions for Liquidated Damages (LD), "into", etc.	NAESB	NAESB	3	No	Tony Reed - Southern	
139	Market Standards	Energy Market Standard Product Definitions			Standard definition of energy products					Energy products and services have common attributes in all markets. Standards definitions will improve efficiencies in communicating and operating between areas with various market designs	NAESB	NAESB	3	Yes	Karl Tammar - ISO/RTO Council	
42	Market Standards	Market Standard Communication Protocols and Transparency			Data Visibility					Inability to view neighboring markets information through a common software such that this sometimes hinders Market Participants ability to complete business in a timely fashion.	NAESB	NAESB	2	Yes	Marjorie Perlman - Energy East	
52	Market Standards	Market Standard Communication Protocols and Transparency			Confidentiality of Data and Information Shared					Standards of Confidentiality would enhance the capability to resolve data sharing and information posting	NAESB	NAESB	2	Limited	Carl Monroe, Southwest Power Pool	
140	Market Standards	Market Standard Communication Protocols and Transparency			Standard messaging protocols for market notifications					Market participants will benefit from common messaging protocols.	NAESB	NAESB	3	No	Karl Tammar - ISO/RTO Council	
1	Market Standards	Market Standard Operating Time			Non Standard Time Zone					The lack of a standard Time Zone causes Market Inefficiencies	NAESB	NAESB	3	No	Phil Cox - AEP	
14	Market Standards	Physical and/or Financial Resolution of Inadvertent Interchange			Compensation for Inadvertent Interchange					Lack of compensation lessens incentives for operators to solve problems. Explicit compensation for inadvertent interchange is necessary for appropriate definition of other products, in that such compensation ensures that the defined product is delivered.	NAESB	NAESB	3	Yes / IIPTF	Mark Lively - Lively Utility	
46	Planning	Transmission Expansion and Generator Interconnection Coordination			Generator Interconnection - Affected Systems					Generation Interconnections close to seam affects both areas	NAESB	Undecided	3	Limited	Carl Monroe, Southwest Power Pool	
57	Planning	Transmission Expansion and Generator Interconnection Coordination			Transmission interconnection procedures					Need consistent approach to treating merchant generation interconnection procedures with transmission	Multiple	Multiple	3	Northeast ISO	Joe Rosignoli National Grid	
114	Planning	Transmission Expansion and Generator Interconnection Coordination			Coordination of interregional planning including transmission facilities and generator interconnection procedures						Multiple	Undecided	3	In Northeast Power Markets Seams Action Plan	Jeff Mueller (PSEG), and Andy Rodriguez (PJM)	

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26	Planning	Transmission Expansion and Generator Interconnection Coordination	Transmission Expansion Cost and Construction Responsibilities	Transmission expansion planning - coordination between systems and determine who is obligated to build and pay for improvements	Multiple	Regional	Multiple	Being reviewed by PJM/MISO.	Multiple	3	Yes	Linda Horn - WE Energies				
50	System Reliability	Generation-Load Balance	Interchange Schedule Ramping Requirements	Schedule Ramp Management	NAESB	National	NAESB	Ramping standard differences across the seams hinder business	Undecided	3	Limited	Carl Monroe, Southwest Power Pool				
12	Transaction Scheduling	Interchange Scheduling Standardized Protocols	Develop Electronic Scheduling	Interchange/Intrachange Scheduling Data Exchange	NAESB	National	NAESB	Current E-Tagging process is inadequate for exchanging reliability and market data within the Western Interconnection. Solution: Electronic Scheduling	NAESB	3	Yes - WECC	Steven Cobb - SRP				
41	Transaction Scheduling	Interchange Scheduling Standardized Protocols	Inter-Market Ramping Requirements Standardization	Scheduling Coordination (including Ramp Rates)	NAESB	National	NAESB	RTOs have different ramp rates and scheduling requirements that require Market Participants to complete multiple submissions for the same transaction.	Undecided	2	Yes	Marjorie Peifman - Energy East				
79	Transaction Scheduling	Interchange Scheduling Standardized Protocols	Standardize Inter-Market Scheduling Timelines	Market Design - Day Ahead. Other Scheduling Requirements	NAESB	National	NAESB	Should the time intervals and submission times be synchronized to mitigate obstacles to inter-RTO trade? (Issue I.b.12)	NAESB	2	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA				
78	Transaction Scheduling	Interchange Scheduling Standardized Protocols	Tools and Procedures to Accommodate Inter-Market Interchange Scheduling Requirements	Market Design - Day Ahead. Schedule Components	NAESB	National	NAESB	Can tools be developed for scheduling submission that assist the user in meeting any differences in protocols between RTOs? (Issue I.b.11)	Undecided	2	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA				
8	Transaction Scheduling	Interchange Scheduling Standardized Protocols		Scheduling	Multiple	Regional	Multiple	Inconsistent procedures among entities. Solution: Western Interconnection Standardized Interchange Scheduling Protocols.	Multiple	2	Yes - SSG - WI	Steven Cobb - SRP				
104	Transaction Scheduling	Interchange Scheduling Standardized Protocols		Transmission Checkout Failure - Operators curtail transactions due to mismatched tag data, different MW volumes, etc. The curtailment of transactions due to data incompatibility is disruptive to both the marketplace and the reliable operation of the grid.	NAESB	National	NAESB		NAESB	2	In Northeast Power Markets Seams Action Plan	Jeff Mueller (PSEG), and Andy Rodriguez (PJM)				
106	Transaction Scheduling	Interchange Scheduling Standardized Protocols		Transaction Scheduling - Inconsistent information and market timing rules lead to uncertainty and risk that discourage the scheduling of some inter-regional transactions.	NAESB	National	NAESB		NAESB	2	In Northeast Power Markets Seams Action Plan	Jeff Mueller (PSEG), and Andy Rodriguez (PJM)				
4	Transmission Service	Transmission Market Standard Product Definitions and Priorities		Definition & treatment of Firm/nonfirm Transmission	NAESB	National	NAESB	Annual Plan item 4cii moved from MOS	Undecided	1	No	Lou Oberski - Dominion Energy				
103	Transmission Service	Transmission Market Standard Product Definitions and Priorities		Transmission Service - Market participants require consistent treatment of transmission products across multiple control areas to reduce perceived market risk, scheduling confusion and uncertainty.	NAESB	National	NAESB		NAESB	1	In Northeast Power Markets Seams Action Plan	Jeff Mueller (PSEG), and Andy Rodriguez (PJM)				
141	Transmission Service	Transmission Market Standard Product Definitions and Priorities		Replacement of contract path with flow-based transmission service	Multiple	Regional	Multiple		Multiple	3	No	Ed Davis - Energy				
117	Transmission Service	Transmission Service Procurement	Common Reservation System for Market Interface Transmission ATC	Contract Tie Capacity - One Stop Shopping	NAESB	Regional	NAESB		NAESB	3	No	Jeff Mueller (PSEG), and Andy Rodriguez (PJM)				

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		Transmission Service Procurement	Transmission Service Procurement	Common Western Interconnection Wide OASIS	Intra-Hour Transmission Service Procurement	Transmission Access									
6	Transmission Service	Transmission Service Procurement	Transmission Service Procurement	Common Western Interconnection Wide OASIS	Transmission Access			No transmission market one stop shopping available for the Western Interconnection - entities can't find needed information to efficiently conduct business on a preschedule or real-time basis. Solution: Common OASIS Site needed.	Multiple	Regional	Undecided	3	Yes - Various Transmission Providers	Steven Cobb - SRP	
33	Transmission Service	Transmission Service Procurement	Transmission Service Procurement	Intra-Hour Transmission Service Procurement	Standard for Purchasing of Intra-Hour Transmission			The ability to purchase transmission after the top of the hour when the transmission service is predetermined as available in prior hour.	NAESB	National	NAESB	3	No	Tony Reed - Southern	
67	Transmission Service	Transmission Service Procurement	Transmission Service Procurement	Secondary Transmission Service Market Standardization	Market Design - Prior to Day Ahead, Primary Release Mechanism			There seems to be agreement here that a secondary market would be outside the RTO. If the resulting secondary market is not westwide, will coordination be needed? (Issue I.a.8)	Multiple	Regional	Multiple	3	SSG-WI, CMA Work Group	Syd Berwager - Bonneville PA	
28	Transmission Service	Transmission Service Settlement	Transmission Service Settlement	Consolidate Multiple Market Transmission Service Settlement Statements	Multiple transmission service charge invoicing			Being reviewed by PJM/MISO.	NAESB	National	NAESB	2	Yes	Linda Horn - WE Energies	