

## Seams Issues Matrix

#	Description of Seam Issue	Seam Interface Type	Region 1	Region 2	Seam Impediment Type	Currently Being Addressed ?	Submitter	Reference Papers	Comments
1	Non Standard Time Zone	All	All	All	Market Rule / Business Practice	No	Phil Cox - AEP	No	The lack of a standard Time Zone causes Market Inefficiencies
2	MaxGen/MaxLoad 345Kv	Other	ECAR	ECAR	Physical	No	Phil Cox - AEP	No	Undersized Transmission Line
3	Definition & treatment of Firm/nonfirm Power	All	All	All	Market Rule / Business Practice	No	Lou Oberski - Dominion Energy	No	Annual Plan Item 4ci moved from MOS
4	Definition & treatment of Firm/nonfirm Transmission	All	All	All	Market Rule / Business Practice	No	Lou Oberski - Dominion Energy	No	Annual Plan Item 4cii moved from MOS
5	Provision of reserves across multiple control areas	All	All	All	Market Rule / Business Practice	No	Lou Oberski - Dominion Energy	No	Annual Plan Item 4cii moved from MOS
6	Transmission Access	All	Non-RTO Market	Non-RTO Market/ISO Market	Market Rule/Business Practice	Yes - Various Transmission Providers	Steven Cobb - SRP	No	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.
7	Market Price Information	Non-RTO Mkt to Non-RTO Mkt	Non-RTO Market	Non-RTO Market	Market Rule/Business Practice	No	Steven Cobb - SRP	No	Market pricing methodology not comprehensive, consistent or dependable. Solution: Standardized Indices, Independently Managed.
8	Scheduling	RTO Market to Non-RTO Market	Non-RTO Market	ISO Market	Market Rule/Business Practice	Yes - SSG - WI	Steven Cobb - SRP	No	Inconsistent procedures among entities. Solution: Western Interconnection Standardized Interchange Scheduling Protocols.
9	Transmission Calculations	All	Non-RTO Market	Non-RTO Market/ISO Market	Market Rule/Business Practice	Yes - SSG - WI	Steven Cobb - SRP	No	Transmission calculations are not consistent. Solution: Standardized TTC & ATC Calculations.
10	Energy Products	All	Non-RTO Market	Non-RTO Market/ISO Market	Market Rule/Business Practice	Yes - WECC	Steven Cobb - SRP	No	Entities have disagreements concerning the definitions of various energy products. Solution: Standardized Energy Products.
11	Market Oversight	All	Non-RTO Market/ISO Market	Non-RTO Market/ISO Market	Market Rule/Business Practice	Yes - SSG - WI	Steven Cobb - SRP	No	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.
12	Interchange/Intrachange Scheduling Data Exchange	All	Non-RTO Market/ISO Market	Non-RTO Market/ISO Market	Market Rule/Business Practice	Yes - WECC	Steven Cobb - SRP	No	Current E-Tagging process is inadequate for exchanging reliability and market data within the Western Interconnection. Solution: Electronic Scheduling
13	Compensation for Unscheduled Flows of Electricity	All	All	All	Market Rule / Business Practice and Physical	Yes/IPTF	Mark Lively - Lively Utility	A - C	Lack of compensation lessens incentives for operators to solve problems and for accountants to spend money on metering.
14	Compensation for Inadvertent Interchange	All	All	All	Market Rule / Business Practice and Physical	Yes/IPTF	Mark Lively - Lively Utility	A - C	Lack of compensation lessens incentives for operators to solve problems and for accountants to spend money on metering.
15	Compensation for Loop Flow	All	All	All	Market Rule / Business Practice and Physical	Yes/IPTF	Mark Lively - Lively Utility	A - C	Lack of compensation lessens incentives for operators to solve problems and for accountants to spend money on metering.
16	Compensation for Reactive Power	All	All	All	Market Rule / Business Practice and Physical	Yes/IPTF	Mark Lively - Lively Utility	A - C	Lack of compensation lessens incentives for operators to solve problems and for accountants to spend money on metering.
17	TTC-ATC calculation/posting	Other	HQ TransÉnergie	IMO	Market Rule / Business Practice	No	Victor Bissonnette - HQ TransÉnergie	No	Interface between a financial market (no physical transmission arrangements) and physical transmission regions (selling transmission capacity through OASIS reservations): Problems of TTC-ATC calculations coordination

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18	TTC-ATC calculation/posting	Other	HQ TransÉnergie	NYiso	Market Rule / Business Practice	No	Victor Bissonnette - HQ TransÉnergie	No	Interface between a financial market (no physical transmission arrangements) and physical transmission regions (selling transmission capacity through OASIS reservations): Problems of TTC-ATC calculations coordination
19	TTC-ATC calculation/posting	Other	HQ TransÉnergie	ISO-NE	Market Rule / Business Practice	No	Victor Bissonnette - HQ TransÉnergie	No	Interface between a financial market (no physical transmission arrangements) and physical transmission regions (selling transmission capacity through OASIS reservations): Problems of TTC-ATC calculations coordination
20	TTC coordination	Other	HQ TransÉnergie	NYiso	Market Rule / Business Practice	Yes	Victor Bissonnette - HQ TransÉnergie	No	Disagreement between two operators on the physical capability of an interconnection (line 7040)
21	TTC coordination	Other	HQ TransÉnergie	ISO-NE	Market Rule / Business Practice	Yes	Victor Bissonnette - HQ TransÉnergie	No	Disagreement between two operators on the physical capability of an interconnection (Phase II)
22	Rate pancaking elimination	All	All	All	Market Rule / Business Practice	Yes	Linda Horn - WE Energies	No	Being reviewed by PJM/MISO.
23	How different congestion management methodologies will interact to ensure parallel flows and impacts are recognized and controlled to ensure system reliability.	All	All	All	Physical	Yes	Linda Horn - WE Energies	No	Being reviewed by PJM/MISO.
24	Improve Real Time use of transmission interfaces - regional dispatch coordination	All	All	All	Market Rule / Business Practice	Yes	Linda Horn - WE Energies	No	Being reviewed by PJM/MISO.
25	Need for common market and products and definitions	All	All	All	Market Rule / Business Practice	No	Linda Horn - WE Energies	No	
26	Transmission expansion planning - coordination between systems and determine who is obligated to build and pay for improvements	All	All	All	Market Rule / Business Practice	Yes	Linda Horn - WE Energies	No	Being reviewed by PJM/MISO.
27	See PJM presentation "Status Report to FERC on July 31, 2002 Alliance Order" dated Jan 2003, page 6 as posted under NAESB WEQ Seams subcommittee July 8 date.	All	All	All	Market Rule / Business Practice	Yes	Linda Horn - WE Energies	D	Being reviewed by PJM/MISO.
28	Multiple transmission service charge invoicing	All	All	All	Market Rule / Business Practice	Yes	Linda Horn - WE Energies	No	Being reviewed by PJM/MISO.
29	Allocation of transmission capacity on reciprocal flow gates amounts to transmission service without compensation. Legitimizes "parallel loop flow".	RTO Market to RTO Market	MISO	PJM	Market Rule / Business Practice		Dave Nick - DTE Energy	E	
30	Market allocations over flow gates are approved without regard to flow gate capacity resulting in over subscription of flow gates.	RTO Market to RTO Market	MISO	PJM	Market Rule / Business Practice		Dave Nick - DTE Energy	E	
31	MISO- PJM will do their own flowgate contribution analysis and send to NERC IDC if the 5% threshold is exceeded for an individual generator. IDC will not have complete information.	RTO Market to RTO Market	MISO	PJM	Market Rule / Business Practice		Dave Nick - DTE Energy	E	

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32	MISO- PJM market allocation will give preference to the market as Network over PTP even though the Market allocation may be a non paying transmission customer.	RTO Market to RTO Market	MISO	PJM	Market Rule / Business Practice		Dave Nick - DTE Energy	E	

#	Reference Paper or Supporting Document Provided
A	"Profit-Enhancing Seam Management: A White Paper on Pricing The Unscheduled Flows of Electricity Across the Seams Between Utilities Using A Geographically Differentiated Auction of Inadvertent Interchange", released 2001 March 25 (Mark Lively - Lively Utility).
B	"WOLF: Wide Open Load Following," A presentation to the NERC Market Interface Committee, 2002 September 4-5, Houston, Texas (Mark Lively - Lively Utility).
C	E-Mail by Mark Lively to NAESB WEQ Seams Subcommittee of 9/4/2003 8:28:10 PM Eastern Standard Time (Mark Lively - Lively Utility).
D	See the PJM/MISO JOA dated 8/5/03 (Linda Horn - WE Energies).
E	MISO - PJM Managing Congestion to Address Seam Paper, April 28 2003 (Dave Nick - DTE Energy).