

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

| Orig # | 1ST Sub-Category      |   | 2ND Sub-Category                                    |   | Description of Seam Issue  |              | Comments |           | Resp Org |                | Issue Type | Resp Org JIC | Priority  | Currently Being Addressed | Submitter                                     |
|--------|-----------------------|---|---|---|--|--------------|----------|-----------|----------|----------------|------------|--------------|---|---------------------------|---|
|        | Category              | Sub-Category  | Sub-Category  | Sub-Category  | Sub-Category   | Sub-Category | WEQ      | EC        | WEQ      | EC             |            |              |   |                           |   |
| 36     | Congestion Management | Congestion Management Market Coordination                     | Coordinate Hedging Instruments at Market Interfaces | Coordinate Hedging Instruments at Market Interfaces | Coordination of market based congestion hedging instruments, such as FTRs, between adjacent RTOs with markets, especially for out and thru' transactions | NAESB        | National | Undecided | 1        |                | National   | Undecided    |   |                           | Raj Rana - AEP                                |
| 35     | Congestion Management | Congestion Management Market Coordination                     | Standardize Prices at Market Interfaces             | Standardize Prices at Market Interfaces             | Locational Marginal Prices (LMP) at borders of RTOs with markets (Price cap included)  | NAESB        | National | Undecided | 1        |                | National   | Undecided    |   |                           | Raj Rana - AEP                                |
| 138    | Congestion Management | Congestion Management Market Coordination                     |   |   | Coordination of congestion   | NAESB        | National | NAESB     | 2        | Yes            | National   | NAESB        | Yes   |                           | Karl Tammar - ISORTO Council                  |
| 9      | Congestion Management | Standardize and Coordinate ATC Calculations and Postings      |   |   | Transmission Calculations  | NAESB        | National | Undecided | 1        | Yes - SSG - WI | National   | Undecided    | Yes - SSG - WI  |                           | Steven Cobb - SRP                             |
| 113    | Market Design         | Green Power Market  |   |   | Green power attributes trading   | NAESB        | National | Undecided | 2        |                | National   | Undecided    | In Northeast Power Markets Seams Action Plan          |                           | Jeff Mueller (PSEG), and Andy Rodriguez (PJM) |
| 16     | Market Design         | Transmission Ancillary Service Market Design and Coordination | Reactive Power Compensation                         | Reactive Power Compensation                         | Compensation for Reactive Power  | NAESB        | National | Undecided | 2        |                | National   | Undecided    | Yes / IIP/TF  |                           | Mark Lively - Lively Utility                  |
| 13     | Market Design         | Unscheduled/Parallel Path Flow Management                     | Compensation for Unscheduled/Parallel Path Flow     | Compensation for Unscheduled/Parallel Path Flow     | Compensation for Unscheduled Flows of Electricity  | NAESB        | National | Undecided | 1        |                | National   | Undecided    | Yes / IIP/TF  |                           | Mark Lively - Lively Utility                  |
| 15     | Market Design         | Unscheduled/Parallel Path Flow Management                     | Compensation for Unscheduled/Parallel Path Flow     | Compensation for Unscheduled/Parallel Path Flow     | Compensation for Loop Flow   | NAESB        | National | Undecided | 1        |                | National   | Undecided    | Yes / IIP/TF  |                           | Mark Lively - Lively Utility                  |
| 29     | Market Design         | Unscheduled/Parallel Path Flow Management                     | Compensation for Unscheduled/Parallel Path Flow     | 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        | National | Undecided | 1        |                | National   | Undecided    |   |                           | Dave Nick - DTE Energy                        |
| 134    | Market Design         | Unscheduled/Parallel Path Flow Management                     | Compensation for Unscheduled/Parallel Path Flow     | Compensation for Unscheduled/Parallel Path Flow     | Compensation for parallel flows  | NAESB        | National | NAESB     | 1        |                | National   | NAESB        | In PJM/MISO Congestion Management Proposal Whitepaper |                           | Jeff Mueller (PSEG), and Andy Rodriguez (PJM) |
| 142    | Market Design         | Unscheduled/Parallel Path Flow Management                     | Compensation for Unscheduled/Parallel Path Flow     | Compensation for Unscheduled/Parallel Path Flow     | Pricing for native load loop flow impacts  | Multiple     | Regional | Multiple  | 2        | No             | Regional   | Multiple     | No  |                           | Ed Davis - Entergy                            |



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|        | Category               | Sub-Category  | Category   | Sub-Category  | Issue Type                | WEQ EC    | JIC      | Issue Type | WEQ EC | JIC  | Issue Type                                    | WEQ EC | JIC |          |                           |           |
| 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                  | Multiple  | Regional | Multiple   | 1      | Yes  | Linda Horn - WE Energies                      |        |     |          |                           |           |
| 50     | System Reliability     | Generation-Load Balance   | Interchange Schedule Ramping Requirements  | Schedule Ramp Management  | NAESB                     | Undecided | National | NAESB      | 1      | Limited                                      | Carl Monroe, Southwest Power Pool             |        |     |          |                           |           |
| 12     | Transaction Scheduling | Interchange Scheduling Standardized Protocols                     | Develop Electronic Scheduling  | Interchange/Intrachange Scheduling Data Exchange  | NAESB                     | NAESB     | National | NAESB      | 2      | Yes - WECC                                   | Steven Cobb - SRP                             |        |     |          |                           |           |
| 41     | Transaction Scheduling | Interchange Scheduling Standardized Protocols                     | Inter-Market Ramping Requirements Standardization                                    | Scheduling Coordination (including Ramp Rates)  | NAESB                     | Undecided | National | NAESB      | 1      | 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                     | NAESB     | National | NAESB      | 3?     | 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                     | Undecided | National | NAESB      | 3?     | SSG-WI, CMA Work Group                       | Syd Berwager - Bonneville PA                  |        |     |          |                           |           |
| 8      | Transaction Scheduling | Interchange Scheduling Standardized Protocols                     |  | Scheduling  | Multiple                  | Multiple  | Regional | Multiple   | 3?     | 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                     | NAESB     | National | NAESB      | 3?     | 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                     | NAESB     | National | NAESB      | 3?     | 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                     | Undecided | National | NAESB      | 2      | 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                     | NAESB     | National | 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                  | Multiple  | Regional | Multiple   | 1      | 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                     | NAESB     | Regional | NAESB      | 2      | No   | Jeff Mueller (PSEG), and Andy Rodriguez (PJM) |        |     |          |                           |           |

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| 6      | Transmission Service | 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 | 2               | Yes - Various Transmission Providers | Steven Cobb - SRP            |          |                           |           |
| 33     | Transmission Service | 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     | 2               | No                                   | Tony Reed - Southern         |          |                           |           |
| 67     | Transmission Service | 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  | Consolidate Multiple Market Transmission Service Settlement Statements | Multiple transmission service charge invoicing                | Being reviewed by PJM/MISO.  | NAESB    | National | NAESB     | 1               | Yes                                  | Linda Horn - WE Energies     |          |                           |           |