



# RIF PRICE FORMATION

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# SPP BACKGROUND

# SPP MARKETS

## Transmission Service

Participants buy & sell use of transmission lines owned by different parties

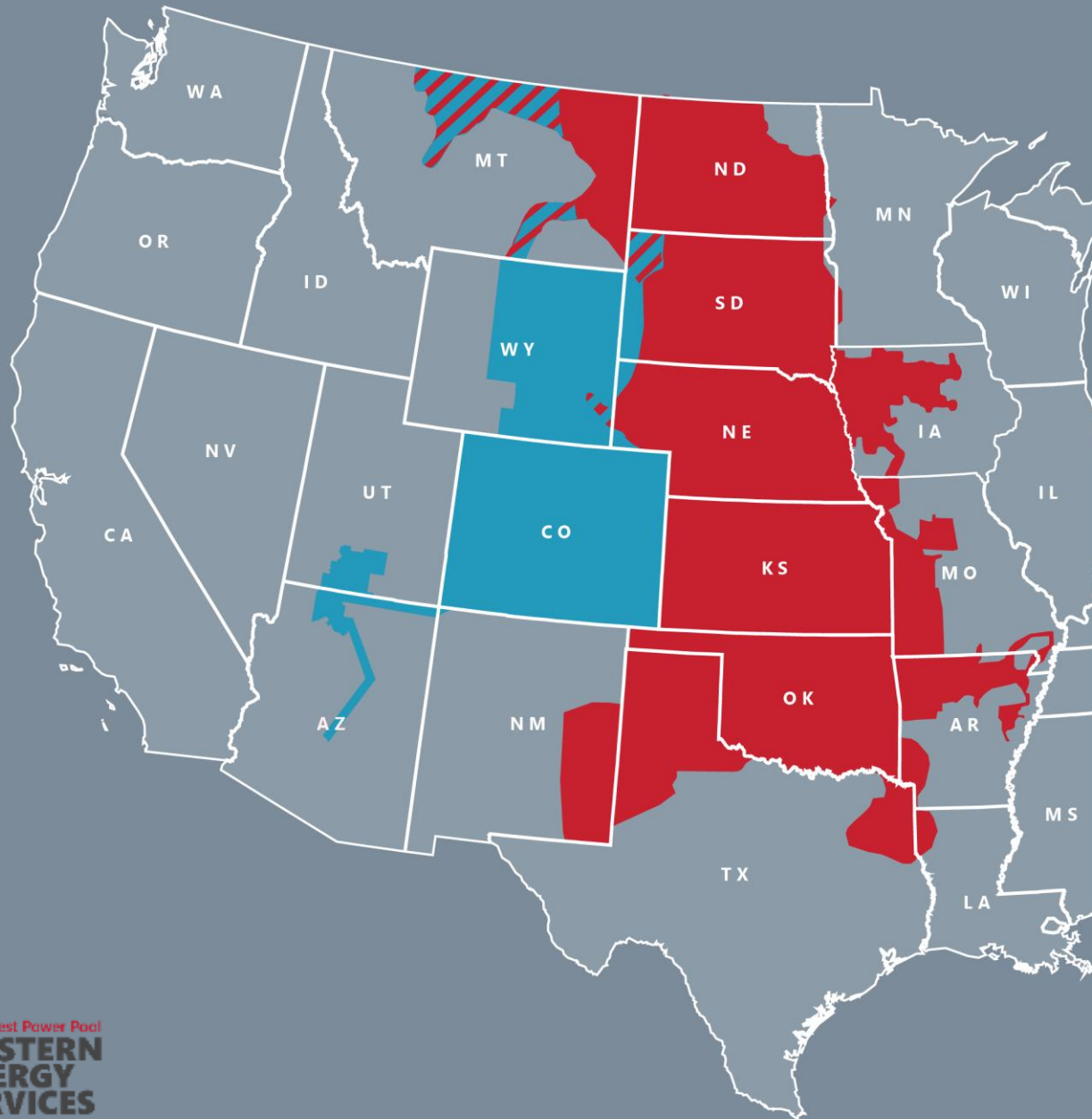
## Integrated Marketplace

Participants buy & sell wholesale electricity in day-ahead & real-time

- **Day-Ahead Market** commits cost-effective & reliable generation for region
- **Real-Time Balancing Market** economically dispatches generation to balance real-time generation & load while ensuring reliability
- **Consolidated Balancing Authority** operates as a single region

## Western Energy Imbalance Service Market

Contract-based, real-time balancing market in Western Interconnection



 **SPP** *Southwest Power Pool*

 Regional Transmission Organization (RTO)

 Western Energy Imbalance Service (WEIS)

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# **SPP MARKET POWER MITIGATION**

# MARKET POWER

- No market participant (MP) should have the ability to unduly influence the market price through its individual actions
  - Only true if high liquidity exists with a large number of participants such that no single entity controls too much of the supply or demand (i.e., perfect competition)
- Market designers want perfect competition so:
  - Prices reflect marginal value of “goods” for consumers
  - Prices drive towards greater efficiency
- MPs that can influence the market have “Market Power”

# SPP MITIGATION IMPLEMENTATIONS

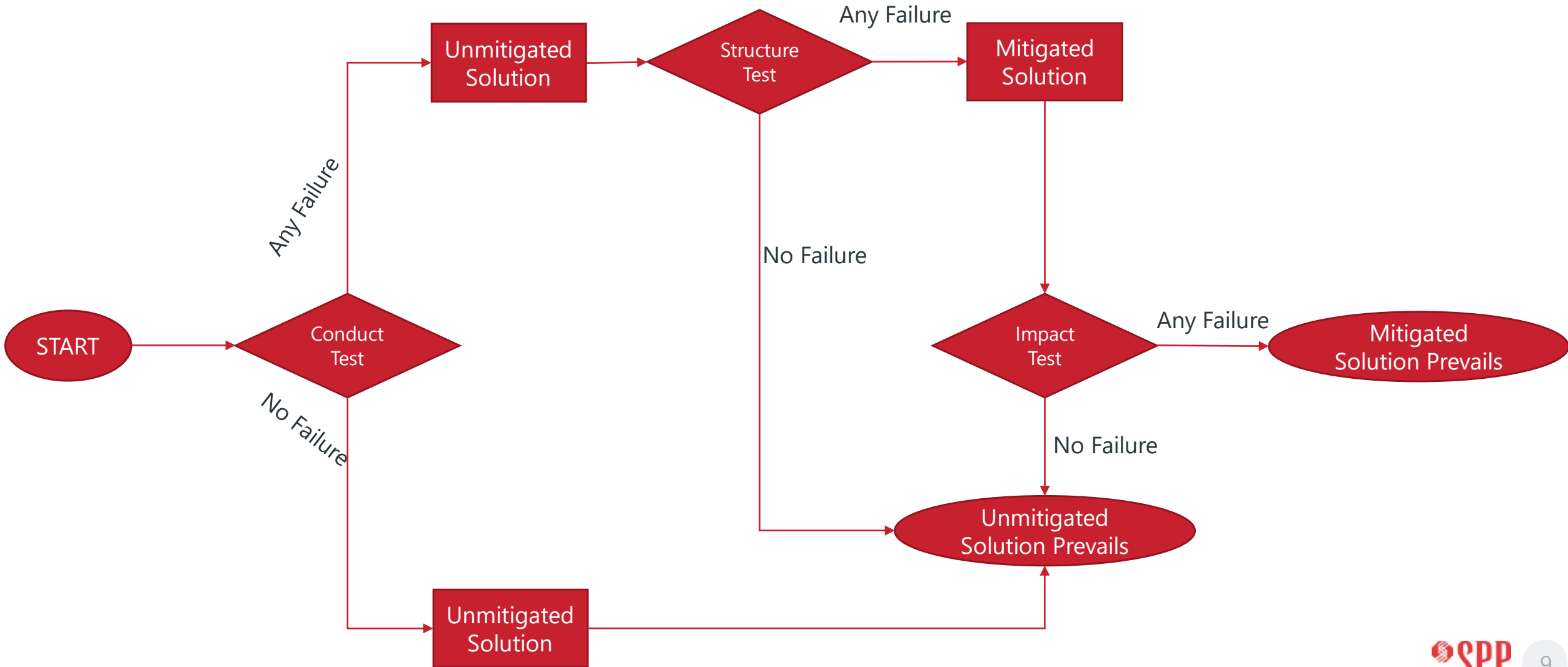
- Mitigation of market power occurs fully “inline” with the market optimization
  - Embedded within the market clearing engine
    - Both Unit Commitment and Unit Dispatch
  - Embedded within “manual” commitment decisions
- **SPP Mitigation of local and structural Market Power consists of 3-part test**
  - Structural market power logic only present in WEIS Market implementation

# SPP MARKET POWER MITIGATION

- 3-Part Test
  - Behavior (i.e., Conduct) Test
    - Resource offers exceed a pre-determined threshold
  - Structure Test
    - Local Market Power Test:
      - Is Resource pivotal (RLDF > 5%) to a binding constraint?
      - Is Resource located in a binding Reserve Zone
    - Structural Market Power Test:
      - Sum of single MPs online capacity required to meet market obligation
      - Residual Supply Index (RSI) < 1
  - Impact Test
    - Are prices influenced by a substantive amount (e.g., \$25/MWh)?



# SPP MITIGATION TEST



# PERFORMANCE IMPACTS

- This “inline” process was adopted in order to automate the mitigation process and reduce the manual actions needed to be taken by SPP’s independent market monitor
  - It is well liked by the SPP MMU and FERC
- The RTO recognizes both the value and drawbacks
  - The additional solves are a significant performance burden
  - The “inline” model ensures the costs used in settlements are also reflected in the dispatch and pricing decisions