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Technical Bulletin:
Flexible Ramping Constraint Penalty Price
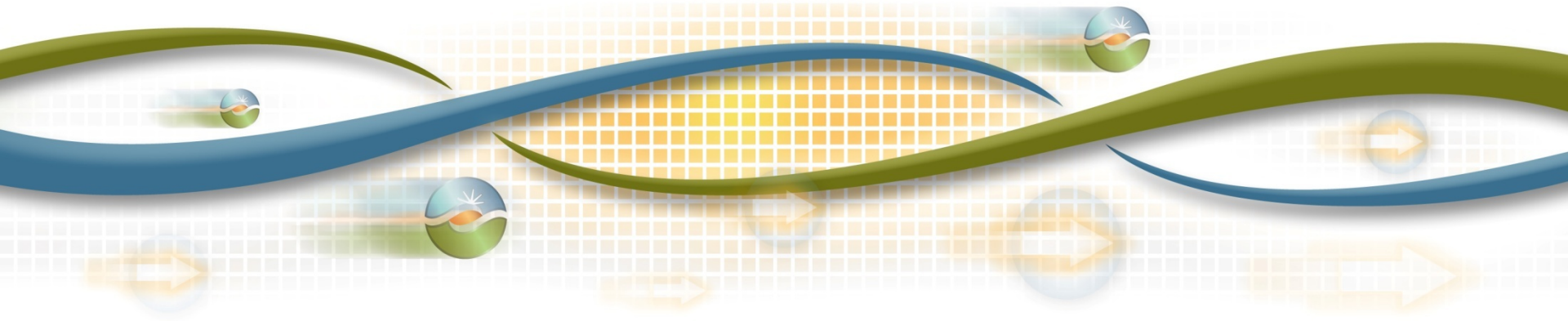# In the Fifteen Minute Market

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Topics

- Background
- Why adjust the penalty price
- Analysis
- Next Steps

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Background

- Flexible ramping constraint (FRC)
  - A constraint for ramping capability. Enforced in Real-Time Pre-Dispatch (RTPD), and unenforced in the Real-Time Dispatch (RTD) binding interval
  - Improve ramping capability available for the five minute RTD
  - Implemented in December 2011
- Meeting the FRC
  - Committing units
    - Useful for RTD
  - Positioning units
    - "Phantom" dispatch (a term used by the Market Surveillance Committee)
- Fifteen Minute Market
  - Financially binding RTPD
  - Part of the FERC Order 764 design

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Why adjust the FRC penalty price

- RTPD and RTD price divergence strongly correlated with FRC shadow price
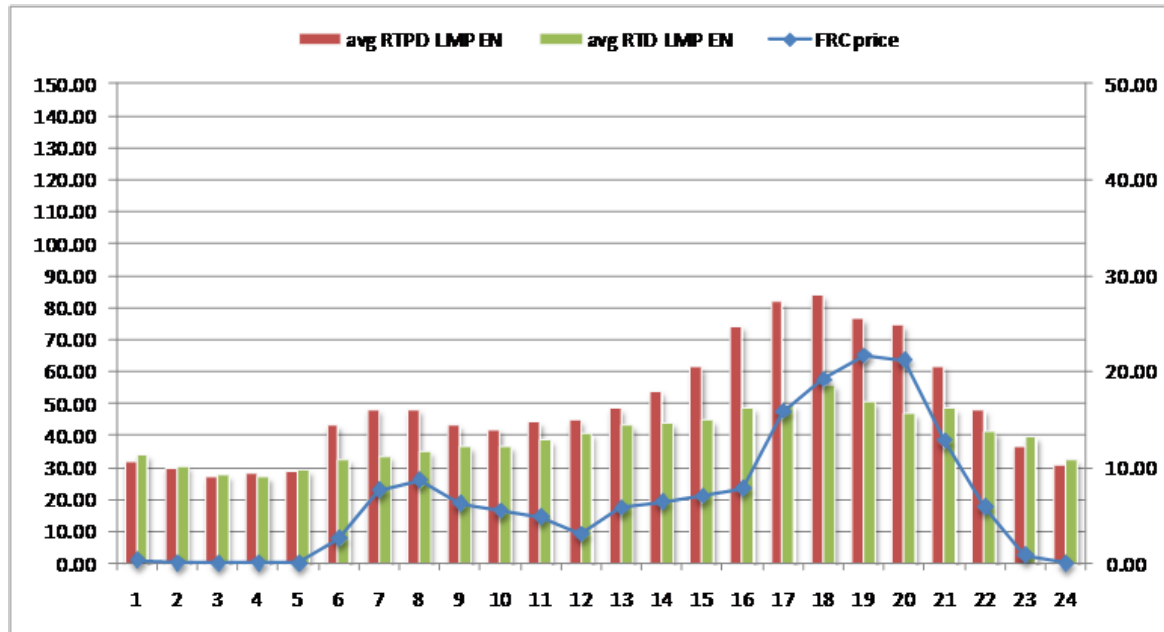
- "Phantom" dispatch is causing price divergence, and will have settlement consequences in the Fifteen Minute Market (FMM)

Analysis

- FRC shadow price and power balance violations in 2013

FRC shadow price range	Average power balance violation MWs	Number of instances
<20	3.87	3141
[20, 60)	3.27	691
[60, 240)	8.20	364
[240, 250]	9.90	473

- FRC effectiveness
  - Effective when FRC shadow price below $60
    - Why? More unit commitments and less "phantom" dispatches
      - All RTPD first intervals with unit commitments driven by FRC in 2013 have FRC shadow price below $60
  - Ineffective when FRC shadow price above $60
    - Why? More "phantom" dispatches and less unit commitments

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Next steps

- Change the FRC penalty price from $247 to $60 on May 1 2014
  - Allow FRC to be relaxed when the "phantom" redispatch cost exceeds $60
  - Maintain the beneficial unit commitments
- Continue to monitor the FRC and its impacts on FMM
  - Make further adjustments if necessary
- Resume flexible ramping products stakeholder process
  - Better design will resolve the FRC issues
  - Aiming at Fall 2015 implementation

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