



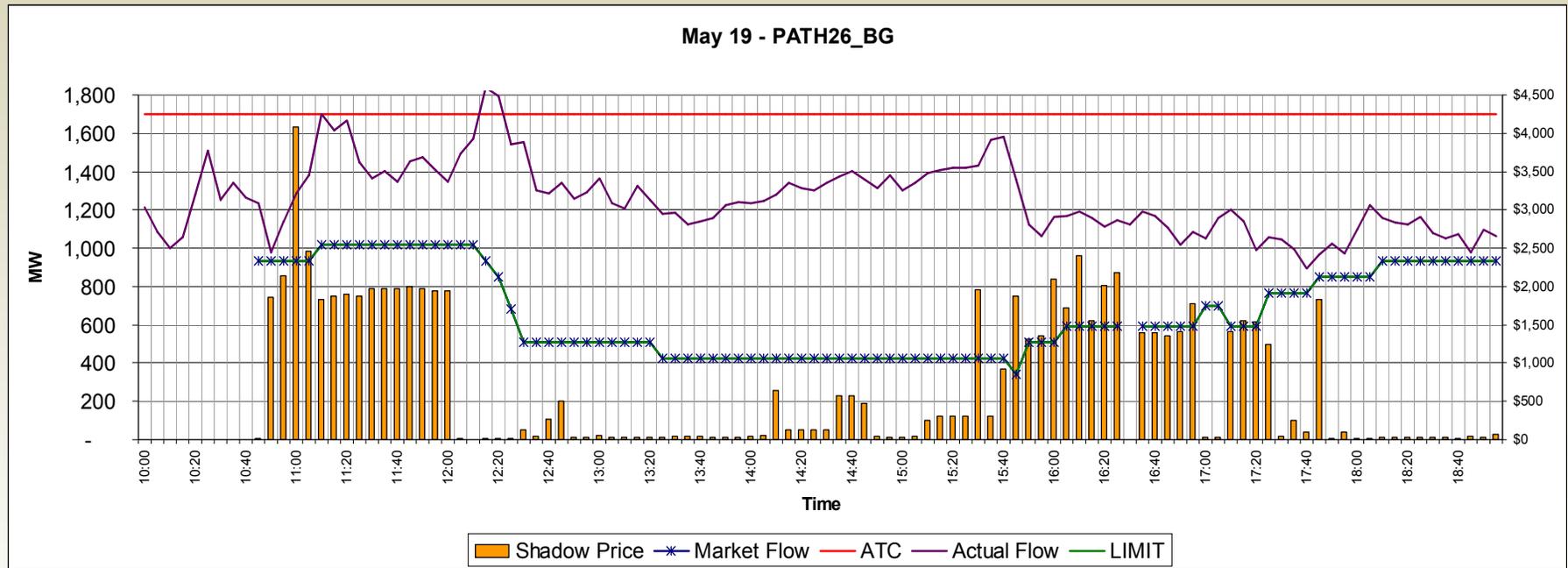
California ISO  
Your Link to Power

# Review and Response Market Performance

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# May 19<sup>th</sup> Review



# May 19<sup>th</sup>: Conditions

- **Transmission Maintenance and Derates**
  - Path26 limited to N-S 1700MW from 4000MW
  - Imperial Valley 500/230 kV Bank-81 clearance, limiting Imperial Valley generation & imports from CFE to SDGE
  
- **Unanticipated Events**
  - PDCI Schedules Cuts due to Balloon in line
  - mitigation of the Victorville branch group
  
- **Actual Loading Conditions**
  - Load shift from north to south by about 600+MW
  - Additional intermittent resources generation of 500+MW above DAM
  - Loop-Flow
  
- **Resource Ramping / Capacity Limitations**
  - Ramping capacity in area was not always sufficient to relieve constraint in 5 minutes
  - Capacity encumbered by awarded regulation and spin/non-spin capacity

# Real-Time Market Performance Improvement Plan Near Term

## 1. Load forecast and distribution

- Improve convergence of forecast between RTPD and RTD
- Improve load distribution

### Implemented Improvements

- Update load forecasting model approach as load turns
- Reduce need for biasing load forecast between RTPD and RTD
- Use up-to-date Load Forecast Zones to allocate Real-Time system forecast
- Provided functionality to update LDF from the previous hour

### Additional Improvements being evaluated

- Further refine 5 and 15-minute load forecasting capability
- Make use of more similar day attributes such weather conditions to select accurate LDF's for forecast conditions

# Real-Time Market Performance Improvement Plan Near Term

## 2. Transmission Limit Management

- Reduce sources of actual and model flow differences
- Refine operational margins
- Smooth changes to transmission limits

### Implemented Improvements

- Building transmission margins desktop procedure
  - Accounts for natural difference with DA, RTPD and RTD
  - Provides consistency across crews
- Internal tool
  - Calculated market and actual flow differences
  - Allows greater visibility and consistency for Grid Operators
  - Provides single interface for transmission flow true-up

# Real-Time Market Performance Improvement Plan Near Term

## 3. Low generation ramping availability

- Align 5-minute ramp capability with constraint relief timing
- Access to reserve capacity to relieve constraints

### Implemented Improvements

- Graduating bias over several intervals to smooth impact
- Align limit management and relaxation with timing with operational timing to resolve constraint
- Improve limit management process in the DA market

### Additional Improvements being evaluated

- Recognize the availability and use of regulation ramping capacity
- Evaluate ways to improve access operating reserve for short-term imbalance events
- Reconsider contingency-only reserve rules

# Real-Time Market Performance Improvement Plan Longer Term

- Pursue further refinements to the real time market optimization that would reduce ineffective (but mathematically correct) dispatch
  - Parameter Tuning
  - Shift Factors (Lossy vs. Lossless)
  - Effectiveness Threshold