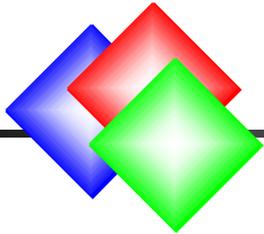


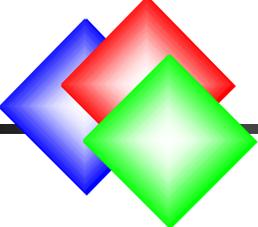
Differences in Western Energy Market Designs



Comments of
Steven L. Walton

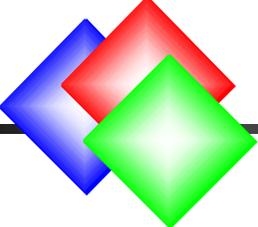
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FERC Staff-to-Staff Meeting
On Western Operations
October 22, 2002



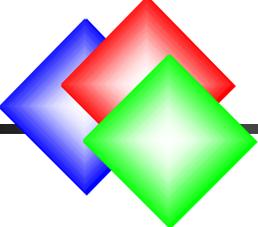
Market Design Differences

- ◆ **Timing** – Does the timing of different market designs (scheduling, open and close of bidding, etc.) encourage or inhibit efficient trades between RTOs?
- ◆ **Physical** – Does the system control impact of the different market design models create or solve physical problems such as loop-flow?
- ◆ **Financial** – Do differences produce artificial price discontinuities?



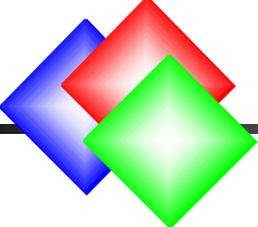
Acronym Glossary

- ◆ AMP = Automatic Mitigation Process
- ◆ A/S = Ancillary Services
- ◆ CM = Congestion Management
- ◆ DA = Day-Ahead
- ◆ HA = Hour-Ahead
- ◆ LSE = Load Serving Entity
- ◆ RT = Real-Time



Capacity Obligations

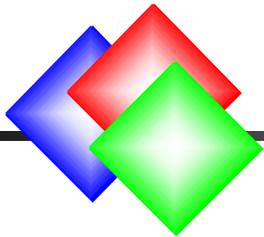
- ◆ California ISO – Available Capacity Obligation
- ◆ RTO West – LSE obligation to provide DA balanced load and resources.
- ◆ WestConnect – LSE obligation to provide DA balanced load and resources.
- ◆ Difference Impact:
 - ◆ Timing – None
 - ◆ Physical – Long term infrastructure concerns
 - ◆ Financial – ?



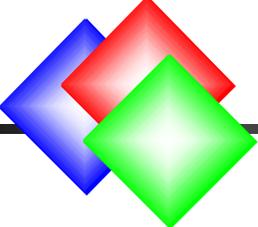
Transmission Rights

- ◆ California ISO – Financial obligations w/payments (pt-pt options and flowgate rights later)
- ◆ RTO West – Financial options, “use or lose”
- ◆ WestConnect – Physical rights
- ◆ Difference Impact:
 - ◆ Timing – Minimal
 - ◆ Physical – Potential conflict between “accept all schedules” and “must hold to schedule” approaches
 - ◆ Financial – Hedging inter-RTO trades complex

Day-Ahead Markets



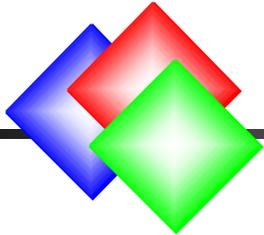
- ◆ California ISO – Energy, CM & A/S w/nodal prices
- ◆ RTO West – CM & A/S w/nodal prices
- ◆ WestConnect – CM & A/S w/zonal prices
- ◆ Difference Impact:
 - ◆ Timing – Conscious effort required to synchronize markets
 - ◆ Physical – Independent solutions can produce loop flow effects as they do today
 - ◆ Financial – Possible price mismatch at seams and differences in liquidity between markets.



Hour-Ahead Markets

- ◆ California ISO – Third settlement period not proposed by others
- ◆ RTO West – None
- ◆ WestConnect – None
- ◆ Difference Impact:
 - ◆ Timing – Will schedule adjustment periods outside California permit participation in HA Market?
 - ◆ Physical – Same issues as DA
 - ◆ Financial – ?

Real-Time Markets



- ◆ California ISO – Energy, CM & A/S w/10-minute settlement of nodal prices
- ◆ RTO West – Energy, CM & A/S w/hourly settlement of integrated nodal prices
- ◆ WestConnect – Energy, CM & A/S w/zonal prices
- ◆ Difference Impact:
 - ◆ Timing – Adopt a common dispatch interval?
 - ◆ Physical – Can price exchange at dispatch interval recognize effects within other RTOs?
 - ◆ Financial – Possible price mismatch at seams.