



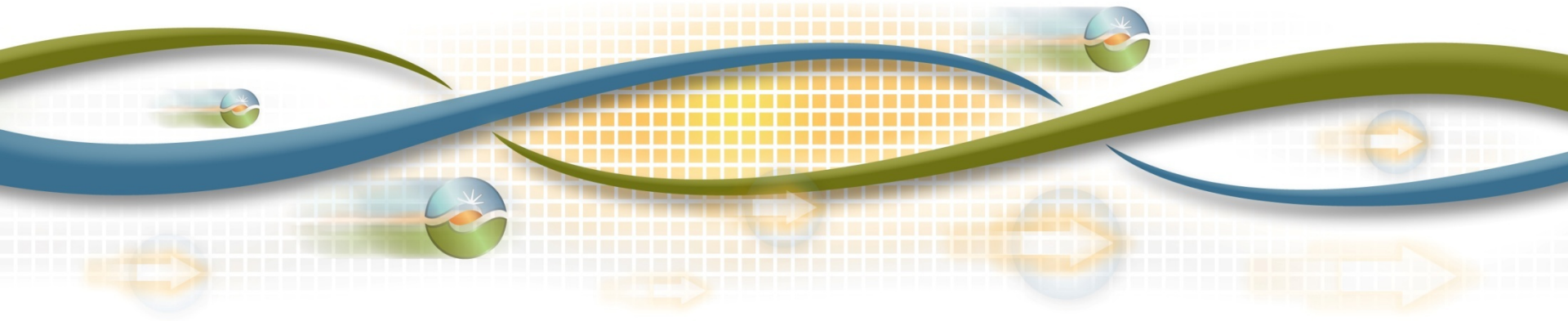
Opportunity Cost Methodology Discussion

Kallie Wells, Infrastructure Policy

Market Surveillance Committee Meeting

General Session

October 20, 2015



Updated scope of CCE3

- Opportunity cost model portion of CCE2 was postponed to CCE3
 - Allow sufficient time to develop business rules and methodology to determine opportunity costs for use-limited resources
 - CCE2 proposed a revised definition of use-limited
- Recent FERC ruling on CCE2 rejected revised definition of use-limited
 - Lack of clarity of acceptable limitations and regulations/statutes
 - Removed registration process details from the Tariff
- CCE3 will include additional discussion around the definition of use-limited to address FERC's direction.
 - March Board of Governors Meeting

Modeling approach

- Evaluated two different modeling approaches
 - Simplified heuristic model and an optimization model
- ISO will be proposing an optimization based model
 - Additional testing showed results can diverge
 - Cases with more than one constraint
 - More accurately enforces multiple constraints simultaneously
 - Minimizes post modeling processes due to nested limitations
- Seeking to retain monthly updates

Daily limitations

- Straw proposal set the opportunity cost for daily limitations as the maximum calculated daily opportunity cost of all days within the month.
 - One anomalous day the prior year could provide excessive headroom for the month
- Prevalence of daily limitations are anticipated to be minimal.
 - It is the ISO's understanding daily MF fields are reflecting annual limitations
 - The ISO is assessing the extent to which they do exist.
- Daily limitations will be addressed through future enhancements
 - Extend the real time look out horizon
 - SCs currently have the ability to manage daily limitations in the market
 - Operators currently have tools to manage daily limitations

Conversion factor

- Straw proposal included a future power price conversion factor to adjust historical implied heat rates.
 - account for anticipated market changes not reflected in prices of natural gas futures (e.g., lower hydro conditions relative to historical year).
 - only increase estimated LMPs with a lower bound of 1
- Conversion factor will now increase *or decrease* estimated LMPs
 - Removing the lower bound of 1
 - Purpose is to account for anticipated market changes, which may be lower LMPs relative to historical year
 - Lower bound of 1 does not necessarily result in a higher opportunity cost, e.g., limitation on starts