

Comparisons of Market Price Spreads and Transmission System Utilization

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Objective of this report is to explore the relation between market price spreads and transmission usage and see if there are situations where additional efficiencies can be gained. These efficiency gains may be used to support benefit estimates associated with increased transmission utilization by the proposed reconfiguration market.

Data points, sources and methodology:

Price data: We took 2003 hourly price data at a few western market hubs (MID C, COB, SP15, NP15, 4C and PV) and calculated the spreads between:

1. Mid C and COB
2. Mid C and SP15
3. SP15 and PV

We tested Dow Jones daily price index and PowerDex hourly prices. Source for hourly price data is Powerdex. Powerdex, Inc., an independent energy information company featuring the first hourly wholesale power indexes in the WECC, it tracks transactions in seven points: Palo Verde/Westwing, COB/Malin, NP-15, SP-15, Mead, Four Corners and Mid-Columbia. Powerdex is survey driven.

Transmission data: We obtained WECC's hourly Scheduled, Actual and Capacity for main transmission lines between these hubs for 2003.

Methodology: Taking hourly prices and transmission flows we identified:

- 1- Hours when there were neither physical constraint nor scheduling constraint
- 2- Calculated Market price Spread
- 3- Calculated wheeling rates (adjusted for losses 10%)
- 4- Identified those hours where market spread was greater than wheeling and losses.
- 5- These hours were considered as potential hours for gain in efficiency should a reconfiguration market be established.
- 6- We then identified hours where the direction of schedule flows were opposite the direction of market price spreads.
- 7- We then summarized across all hours in 2003

Our findings are summarized in the table below. This suggests that there is room for increased efficiency in transmission system.

	Mid C to COB	Mid C to SP15	SP15-PV
Path	COI	Pacific DC Intertie	Path 49 EOR
Wheeling charges and 7.5%-10% for losses	7.0	16.4	8
Sum of Line Limit MW	34,201,244	36,114,198	64,146,843
Sum of Actual MW	16,486,667	8,293,499	35,010,008
Sum of Schedule MW	16,284,028	8,756,304	39,151,656
Hours where there was a physical constraint	5	14	0
Number of Hours where there is no physical constraint and Spread is greater than Wheeling charge and losses	1597	1277	2967
Approximated Dollar value= ABS(spread * MW flow)	\$32 million	\$43 million	202 million
Hours where schedule flow and price spread contradict	3347	1153	3327
Hours where Spread switches	Mid C > COB 3347 hours	Mid C>SP 2771 hours	PV>SP 3327 hours

